



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

MBEU NTSU (PTY) LTD

BASIC ASSESSMENT REPORT (DRAFT-FOR COMMENTS)

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

PREPARED BY: MNB HOLDINGS (PTY) LTD, FOR

NAME OF APPLICANT: MBEU NTSU (PTY) LTD

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FILE REFERENCE NUMBER SAMRAD: NC30/5/1/1/2/12479PR

1. IMPORTANT NOTICE

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

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

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

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process—

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

ABBREVIATIONS AND ACRONYMS

%	Percent
°C	Degrees Celsius
<	Less than
>	Greater than
AMD	Acid Mine Drainage
BAR	Basic Assessment Report
BID	Background Information Document
BH	Borehole
CARA	Conservation of Agricultural Resources Act
cm	Centimetre
DEAT	Department of Environment, Agriculture and Tourism
DM	District Municipality
DMRE	Department of Mineral and Resources
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMPR	Environmental Management Programme
FBAR	Final Basic Assessment Report
GNR	Government Notice Regulation
HA	Hectares
HIA	Heritage Impact Assessment
I&AP's	Interested and Affected Parties
LED	Local Economic Development
LM	Local Municipality
MAR	Mean Annual Runoff
MASL	meters above sea level
MHSA	Mine Health and Safety Act
MPRDA	Minerals and Petroleum Resource Development Act,
NEMA	National Environmental Management Act
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency

SHE

Safety, Health and Environmental

Sqm/m²

Square Meter

WMA

Water Management Area

Mbeu Ntsu (Pty) Ltd Environmental Statement and Declaration:

MNB Holdings (Pty) Ltd has been appointed to conduct an assessment on behalf of Mbeu Ntsu (Pty) Ltd, (the applicant) for the proposed Iron Ore, Limestone and Manganese project. The aim of the assessment by Mbeu Ntsu to identify the potential for possible detrimental impacts of the proposed project (in the unmitigated scenario in particular) on the biophysical, cultural and socio-economic environments and more specifically on the project site with little to no impact on the surrounding area. With management actions proposed and outlined in this report, these potential impacts can be prevented or reduced to acceptable levels.

If Mbeu Ntsu (Pty) Ltd follows that provided the Environmental Management Programme (EMPr) is effectively implemented there is no risk to biophysical, social or economic impact and as such there is no reason why MNB Holdings see that the project should not proceed.

I ***Mantsepuoa Bolofo Adelinah*** on behalf of MNB Holdings (Pty) Ltd who is an EAP on behalf of Mbeu Ntsu (Pty) Ltd declares the above statement.

Signed.....at **Pretoria Sunnyside** On the 29th of April 2021.

Executive Summary

Mbeu Ntsu (Pty) Ltd has applied for a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) as well as Environmental Authorisation (EA) National Environmental Management Act (Act 107 of 1998) (NEMA) for proposed prospecting in terms of GNR 327 activity 20 of listing notice which was gazetted in April 27 2017. Activity 20 refers to Any activity including the operation that activity which requires a prospecting right in terms of Section 16 of the MPRDA, (Act 28 of 2002) including associated infrastructure, structures and earth works, directly related to prospecting of mineral resource including activities for which an exemption has been issued in terms of Section 106 of the MPRDA.

MNB Holdings (Pty) Ltd has been appointed as an independent consultant for Environmental studies as well as Consultation processes with the Interested and Affected Parties (I&AP) on behalf of Mbeu Ntsu (Pty) Ltd. This process includes the consultation with parties that may be affected, or interested in the project.

The prospecting right for Iron Ore, Limestone and Manganese was lodged on the farm Goold 329 portion 0 & 1, Simondium 308 and Constantia 309 which covers an area of 6 370Ha in size, Goold 329 are located 15km south east of Hotazel while Simondium 308 and Constantia 309 are located 18km south west of Hotazel town in the Northern Cape province

Should the prospecting right is granted; the duration or lifespan of the right will be 5 years. Once granted, Land access agreements must be concluded before anyone can enter and conduct any work on the farm. Communication is of pivotal importance as a good relationship between the land owner and the applicant is key to make the prospecting activity a success.

The prospecting activities to be done by Mbeu Ntsu will be done in phases or stages, in accordance to their PWP. The three phases are Non-Invasive, Invasive as well as Closure and Rehabilitation

- *The non-invasive phase* will involve mapping of the area for any outcrop and sample collection, followed by desktop studies or literature review of the area then lastly conducting Geophysics in order to determine the different physical properties and a potential ore underground.
- *The invasive phase* will involve mainly drilling of the resource in order to quantify while the other step would be to road excavation in order to make way for a drilling machine.
- The last two phases would be *closure and rehabilitation*. The drilling or prospecting will involve some level of impact on the land applied for, we need to rehabilitate the impact, minimizing the impact as well as making sure that the land is returned to its original state.

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PART A

SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

3. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a. Details of EAP:

i) Details of the Environmental Assessment Practitioner (EAP)

Company	MNB Holdings (Pty) Ltd
Contact Person	Mantsepua Bolofo
Qualification	N.Dip Environmental Science
Years of Experience	5 years
SACNASP Membership No	N/A
Tel No	067 027 8059
Cell No	067 027 8059
Fax No	086 272 4330
E-mail address	mnbholdings17@gmail.com
Address	1707 Sunnypark Apartments, 150 Robert Sobukwe, Sunnyside, Pretoria, 0002

ii) Expertise of the EAP

Mantsepua Bolofo (qualification and Summary)

Mantsepua Bolofo is an independent Environmental Assessment Practitioner (EAP) holds a National Diploma in Environmental Sciences, obtained from the Tshwane University of Technology. She is currently pursuing a B-Tech in Environmental

Sciences as the same institution; she has acquired 5 years of experience in the Environmental Consulting field to date.

In 2015, Ms. Bolofo joined Plantago Lanceolata (Pty) Ltd as an intern; she was then hired as a junior Environmental Assessment Practitioner (EAP) post-graduation. That is where she acquires knowledge and experience in conducting EIAs, Water Use Licence Applications, conducting public participation, drafting of Basic Impact Assessment (EIA), Environmental Management Plan (EMP) and Scoping Reports.

Please refer to **Appendix 1** for the Curriculum Vitae of EAPs

b. Location of the overall activity

Table 3-1: Details of the Prospecting Right Application

Farm Name:	Goold 329, Simondium 308 and Constantia 309
Application area (Ha)	6370 Hectares
Magisterial district:	Iron Ore, Limestone and Manganese
Distance and direction from nearest town	Kuruman District Municipality
21 digit Surveyor General Code for each farm portion	20km South East & West of Hotazel

c. Locality Map

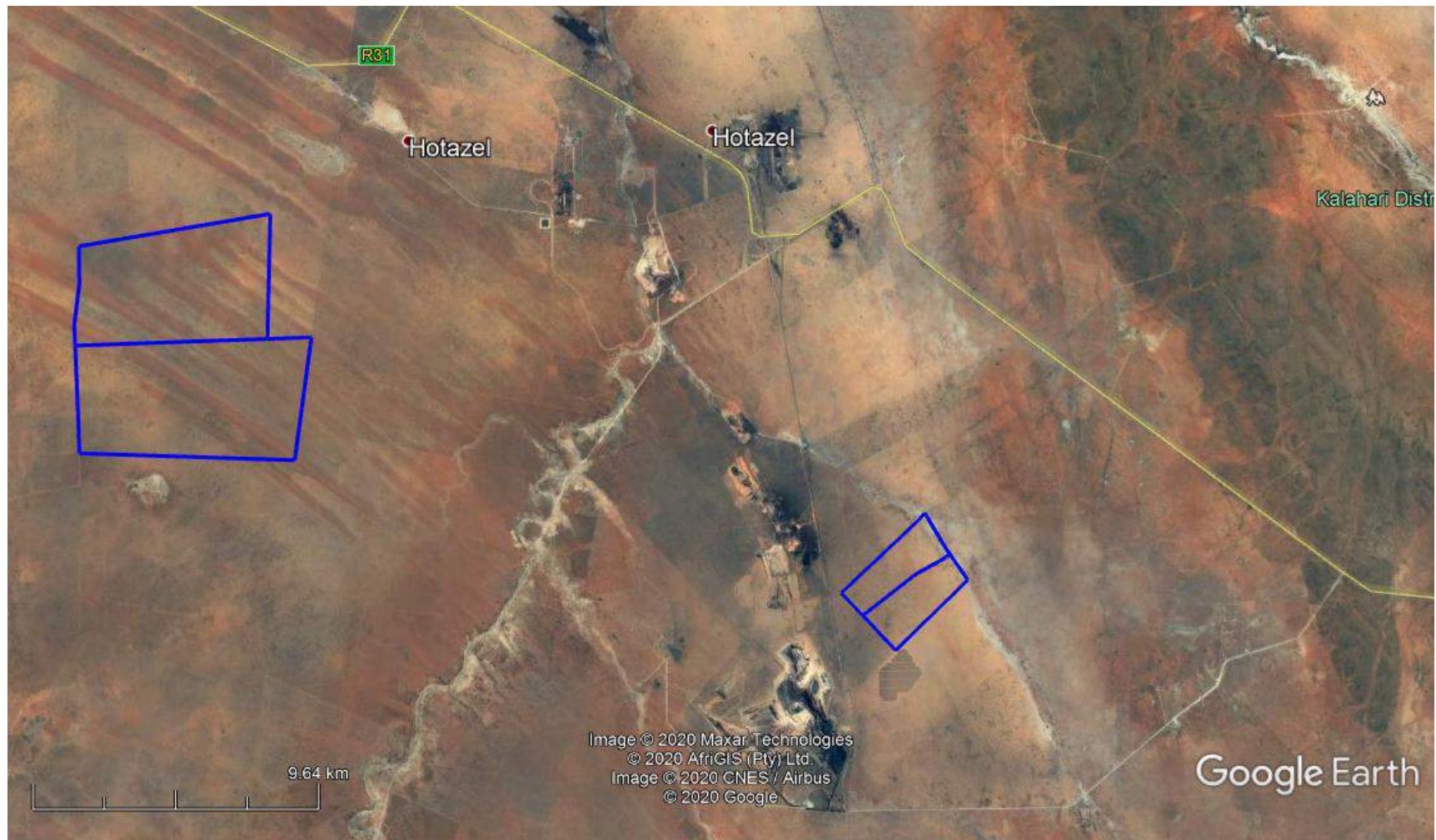


Figure 1: Location prospecting area and farms

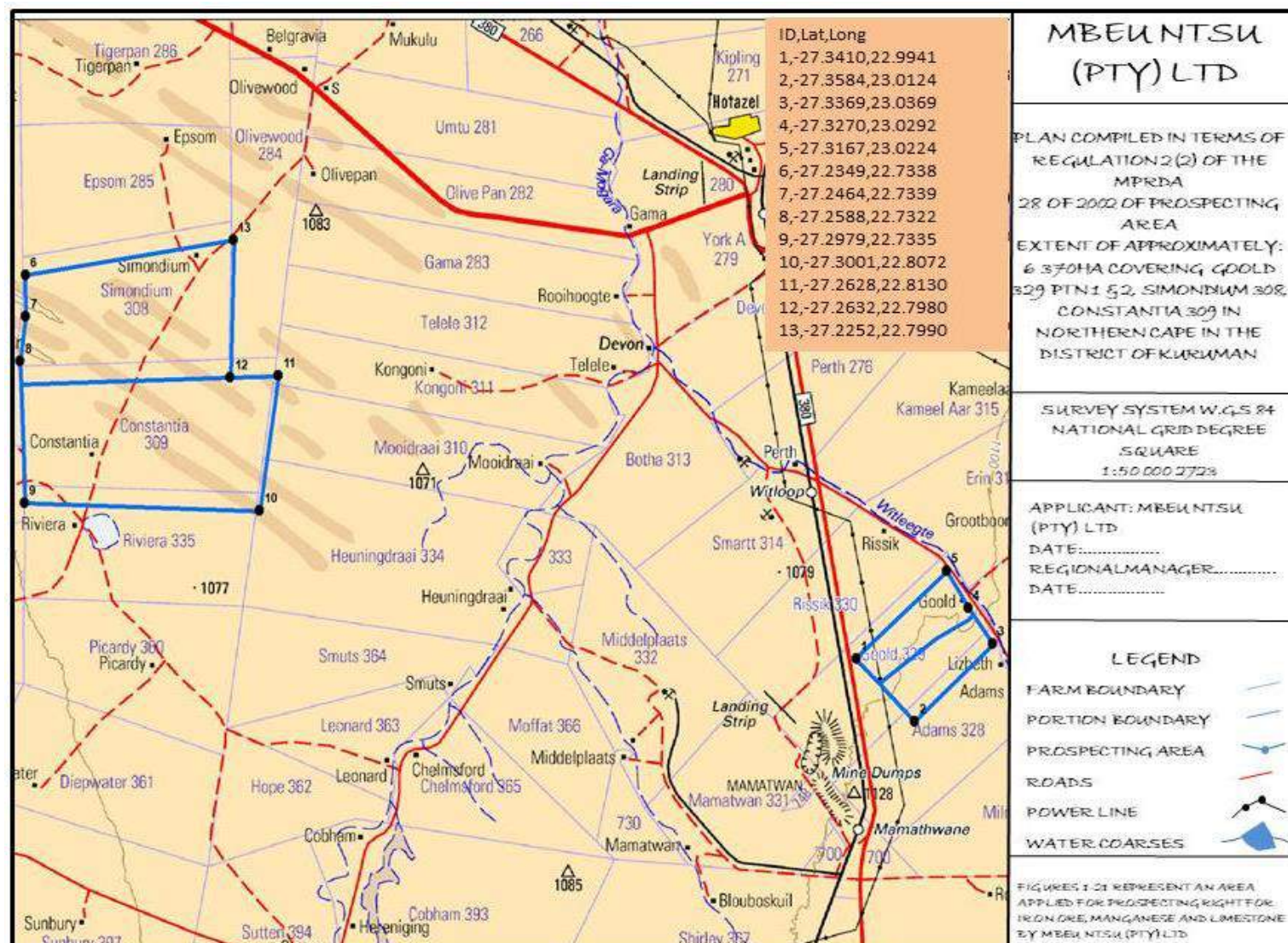


Figure 2: Location of the area on Reg 2.2

d. Description of the scope of the proposed overall activity

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

(i) Listed and specified activities

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc	Aerial extent of the activity in Ha/m ²	LISTED ACTIVITY-Mark with an X where applicable or affected	APPLICABLE LISTING NOTICE
Drilling	120sqm per BH	X	GNR 327 of 2014: Activity 20: Any activity including the operation that activity which requires a prospecting right in terms of Section 16 of the MPRDA, (Act 28 of 2002)
Desktop Studies	6 370 Ha	-	N/A
Mapping	6 370 Ha	-	N/A
Geophysics	6 370 Ha	-	N/A
Geochemistry	6 370 Ha	-	N/A
Accommodation & Ablution	200m ²	-	N/A
Equipment & Storage	500m ²	-	N/A
Decommissioning activities	6 370 Ha	X	NEMA: GNR 983, Listing Notice 1: Activity 22 - The decommissioning of any activity requiring a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

(ii) DESCRIPTION OF THE ACTIVITY TO BE UNDERTAKEN

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

The prospecting activities to be done by Mbeu Ntsu will be done in phases or stages, namely 3 phases which is in accordance to their PWP. The three phases are Non-Invasive, Invasive as well as Closure and Rehabilitation.

1) Phase 1-Non-Invasive

These are activities which do not cause any harm to the environment or they have no direct contact with the environment and no rehabilitation will need to be done after this phase.

- **Desktop studies and Preliminary field work**

This is the collection of all available historical geological data (including assays and mineralogy) and there after assessed. This will also include the assessments of any information of existing mining operations in the area near-by, boreholes as well as any relevant data from any institution that may have done work in and around that particular area.

This includes the establishment of survey grids for geological and structural mapping and geophysical surveys. Subsequent to these activities, proposed drill sites for the drilling program will be pegged. A preliminary report with updated maps will be produced at the end of this phase.

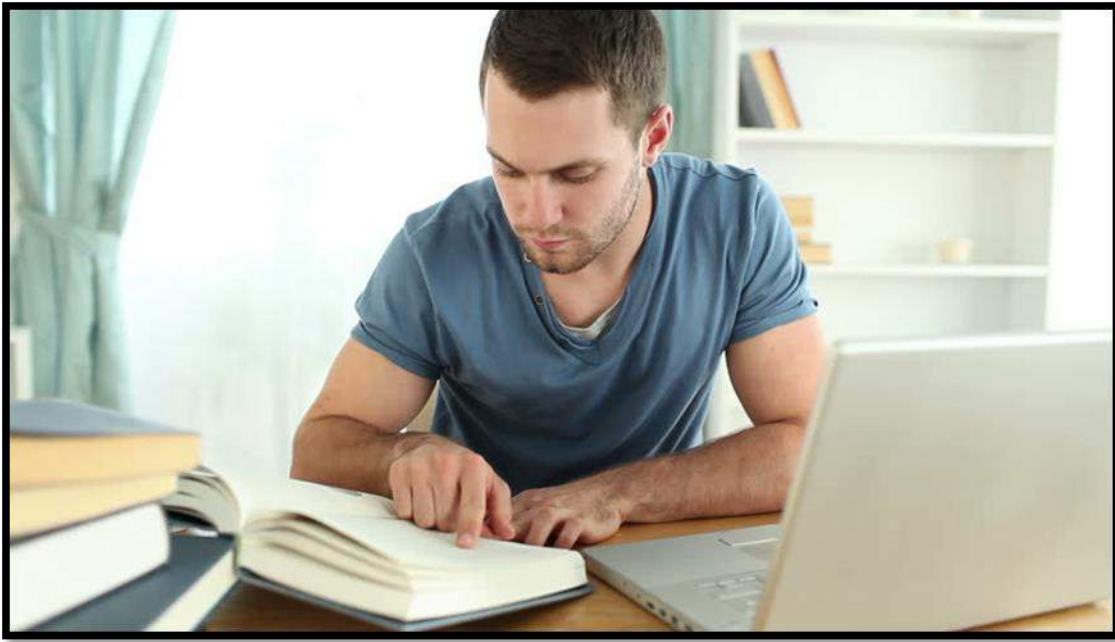


Figure 3: Desktop and literature review

- **Geophysics**

This is a method of using an instrument which can be either hand-held or mounted on an aircraft to search for ore underground. The procedure does not have an impact on the environment, meaning that is also non-invasive method. An airborne method uses an aircraft to survey the areas for any possible ore targets, while ground geophysics is used for the same studies but usually in areas where the area is not too large, while airborne is used for large areas.

Airborne surveys are excellent tools for mapping exposed bedrock, geological structures (such as basements, faults, dikes, sills), sub-surface conductors, paleochannels, mineral deposits and salinity.

Airborne electromagnetic, magnetic and gamma-ray spectroscopy surveys are very useful for mapping the distribution and movement of soil salinity, a problem that affects large areas of farming land

Airborne is usually used in areas which are too large or big which will need an aircraft to be flying over the area. The use of an aircraft saves time on the entire geophysics study. The appropriate methodology will need to be applied to the correct commodity.



Figure 4: airborne Geophysical plane

Ground magnetic survey

A photograph of a person wearing a blue cap and a light-colored shirt, holding a tall, thin black pole with a circular magnetometer at the top. The person is standing in a dirt area with a brick building and trees in the background.

- The ground magnetic measurements were performed using walking magnetometer GSM 19TW (Proton precision magnetometer fitted with GPS)

Figure 5: Hand-Held Geophysical Instrument

- **Drone Geophysics**

There is a shift and new entry of geophysics which is done by a drone, this is the 21st century way of operating. A drone is used to fly over the area and offer the same results as either the ground or airborne studies. It is predominantly used in areas which are too large for ground geophysics and too small for flying an aircraft. It is efficient and cheaper than both methods.

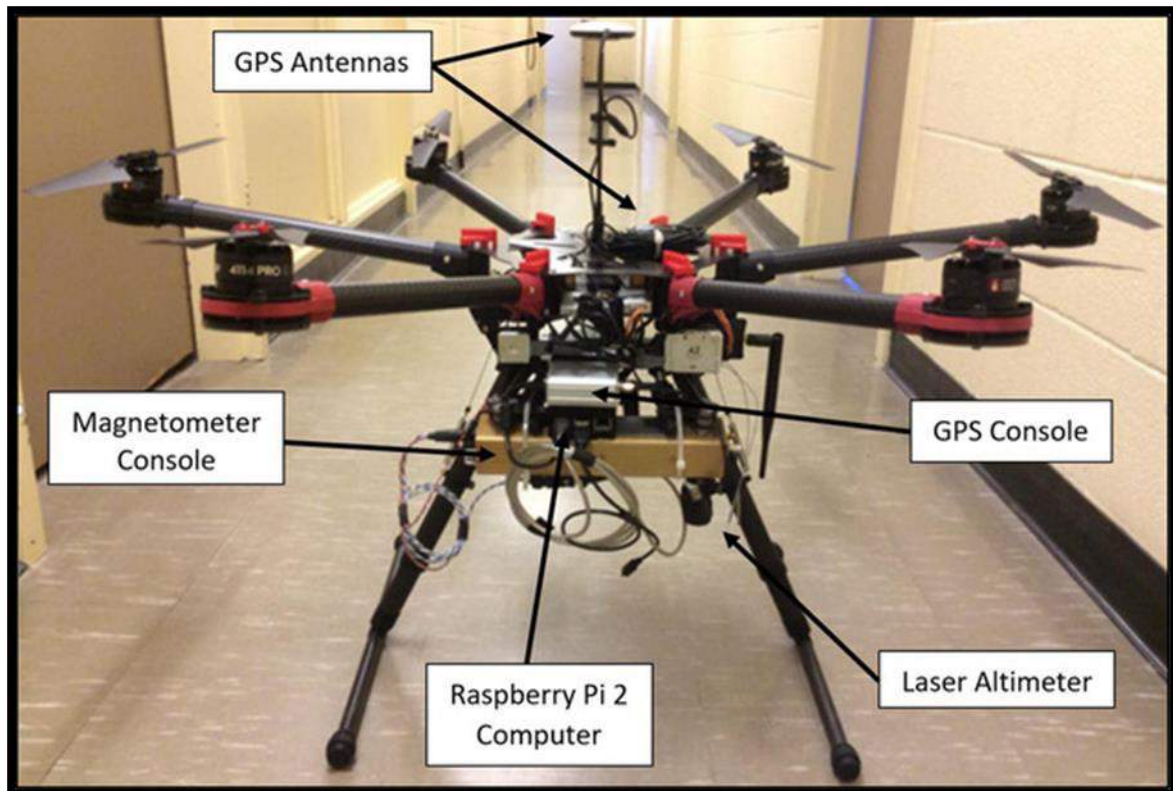


Figure 6: Drone Magnetometer

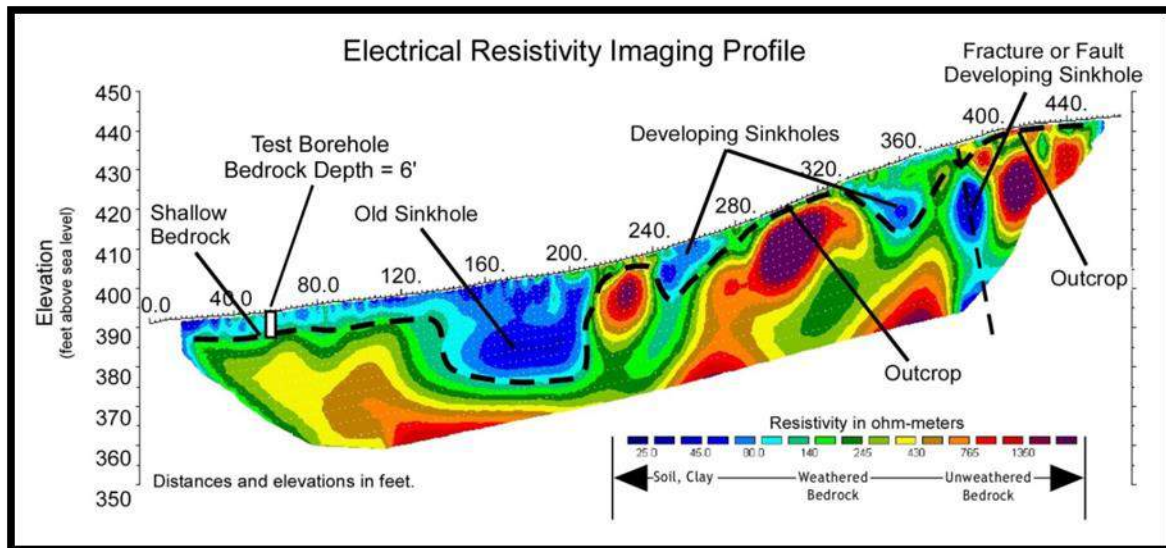


Figure 7: Typical Geophysics Results

2) Phase 2-Invasive Activity

- **Field Mapping**

Geological field mapping is the process of selecting an area of interest and identifying all the geological aspects of that area with the purpose of preparing a detailed geological report which must include a map. The three basic reasons why geological field work is carried out include exploitation of natural resources, as a requirement of the government and for academic purposes. This is the verification of field lithology based on site based on the geological map and geophysical data. This includes ground mapping of geological features including rock outcrops, lithological contact zones, any geological structural features, surface depressions and vegetation types. This may include collection of data from outcrops for analysis, as the outcrops also indicate what can be found beneath the ground. This is mainly done after desktop studies and geophysics. It is basically to confirm



Figure 8: Typical mapping of a site

- **Site Mobilization/Establishment**

Site establishment or site mobilization is the process of preparing the site for the actual main activity (drilling) by clearing the site, putting up camp, security, accommodation, mobile toilets as well as site offices and bringing in drilling rigs. It should be noted that the little environment that has been disturbed if it will be will be rehabilitated. This will include the following:



Figure 9: Site clearance before mobile offices and accommodation

- **Ablution**

Ablution facilities at the drill site will involve the installation of drum or tank types of portable chemical toilets. These toilets will be serviced in accordance with the City's by-laws and MHSA.



Figure 10: Type of chemical toilets to be use onsite

- **Road Construction**

In areas where there will be a need to construct a gravel road for the sole purpose of drilling, a road will be graded and prepared with minimal impact on the environment and without removing any trees but mainly grass. This will be done with the concern of the land owner within the land access agreement. All roads will be rehabilitated after use

- **Temporal Accommodation**

Accommodation of drilling is anticipated to be done outside the drilling area or prospecting area, however, should such seem a tiring task on the project side, and

accommodation will be negotiated with the land owner of the affected land to be prospected.



Figure 11: Accommodation which will be used on site

- **Drilling**

Drilling program along the strike/lengths of the reef will be conducted with the aim of establishing the lateral continuity of the mineralization, this will be in collaboration with previous results from geophysical studies. This will assist us in locating areas which have high grade and which ones have low grade ore. This phase is dependent on the results from mapping as well as geophysics.

Samples collected from the boreholes will be submitted to a SANAS accredited laboratory for assaying and determination of the averages mineral contents.

A total of at least 10 holes are estimated to be drilled during this phase. It would be feasible to extend drilling during this phase to include as much of the strike lengths of the identified mineralization as possible because of the necessity and importance to conduct at least critical amount of drilling before deciding on where the best mineralised sections along the strike could be located. The drill bit size is that of NQ size which is 76.7mm in diameter and will drill to an average depth of 100m which will cover an area of 7.5m x 15m (112.5m²) at any given drilling time. The drilling sump is expected to be an average of 2m x 2m (4m²), this will be incorporated into the general surface rehabilitation.

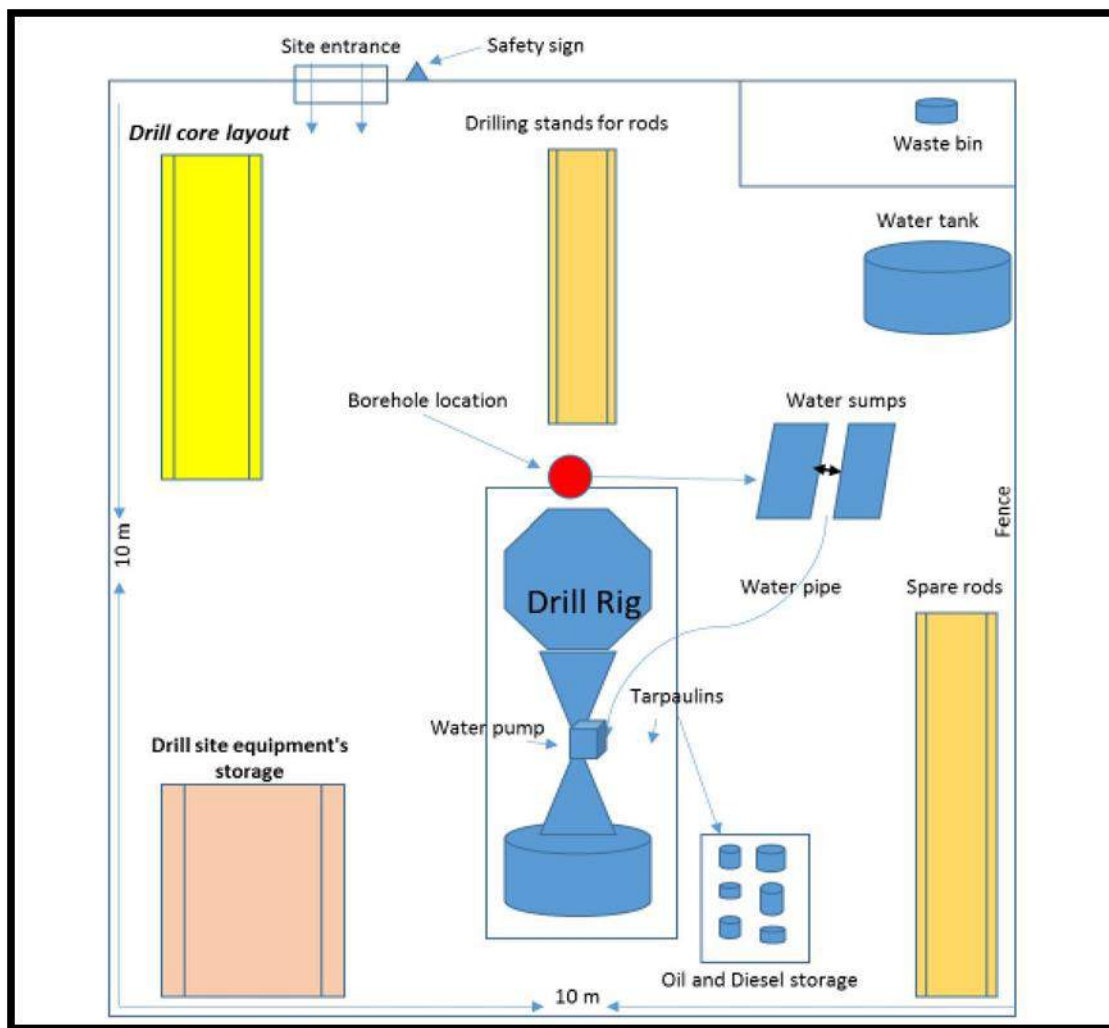


Figure 12: Schematic representation of a drilling site



Figure 13: Drill site

- **Infill Drilling**

Once the critical amount of drilling has been conducted, a decision will be made on selecting an area/block with the highest potential to delineate an open pit economic block containing ore at an economically recoverable grade.

Infill core holes will be drilled at closer spacing to allow the calculation of proven ore reserves. The spacing interval will depend on the geological character of the ore mineralization, the size and frequency of occurrence of structural disturbances affecting the continuity of the mineralization. The internationally accepted methodology and resource estimations and classification in accordance with the SAMREC Code. All borehole data (numbering, surveyed co-ordinates, geological formations and mineralized intersections and assay results) will be used for preliminary geological modelling, resource estimation and classification.

- **Drilling Outcome**

- ❖ **Core**

Core drills are used frequently in mineral exploration where the coring may be several hundred to several thousand meters in length. The core samples are recovered and examined by geologists for mineral percentages and stratigraphic contact points. This gives exploration companies the information necessary to begin or abandon mining operations in a particular area.



Figure 14: cores in core trays

- ❖ **Competent Person Report**

After all work is done such as mapping, geophysics, drilling, core logging and analysis, a report is written in a compliant standard which is mostly use in south Africa such as the SAMREC standard. This follows specific ways of writing the report. A CPR will either categorised as inferred, proven or indicated resources solely based on the level of confidence of the data in the report.

- **Mine Plan**

A mine plan is a map showing how the ore body is seated underground as a result of drilling and all processes.

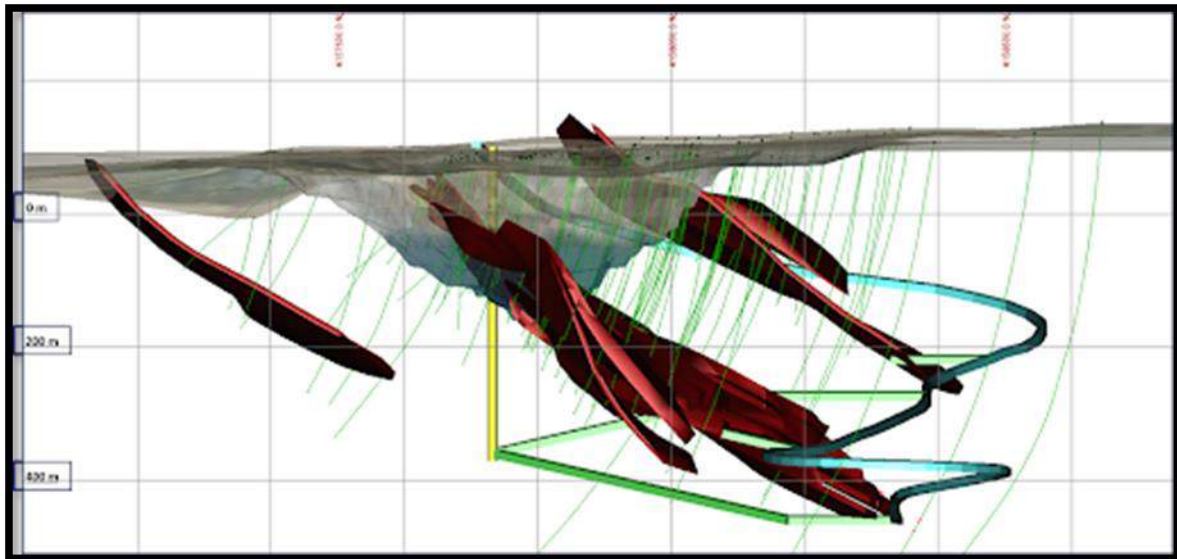


Figure 15: Mine plan and design

3) Phase 3.

- **Closure and Rehabilitation**

This is the rehabilitation and closure of borehole openings, re-vegetation, returning of soil stock piles and any related waste due to prospecting activities or related removal of drilling sumps if there were any. This will also involve the rehabilitation of the camp site, removal of temporary structures, removal of all domestic waste and any other waste created including hydrocarbons.

This is done in order to return the area to a suitable or even better condition than it was found before prospecting commence.

e. Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
National Environmental Management Act, 1998	The entire document	An application of Environmental Authorisation was submitted with the application for Prospecting Right. The DMRE requested submission of a BAR & EMP inline with the NEMA regulations and time frames
Mineral & Petroleum Resource Development Act, 2002	Application for prospecting in terms of Section 16	A PR application has been submitted to the DMRE and accepted
National Heritage Resource Act, Act 25 of 1999	Entire document	Areas which have buildings older than 60 years or graves must be protected under this Act
National Water Act, Act 36 of 1998	This whole document	This act regulates the use of the country's water. Since we will be using a water cart in our operations, we will not be needing any water use licence

<p>Regulation 704 (GN704) (Government Gazette 20118, 4 June 1999) was drawn up to address these issues in relation to mining activities.</p> <p>Compliance to the requirements of GN327 is a legal requirement for all Prospecting Right.</p>	<p>Management measures</p>	<p>No drilling activities will take place within 100m of a recognized water course or wetland</p> <p>No new access tracks will be created which cross a water course. (only existing roads / tracks will be used).</p>
<p>National Environmental Management: Air Quality Act, Act 39 of 2004</p> <p>(NEMAQA)NEM:AQA</p>	<p>Reduce air pollution in the prospecting activity</p>	<p>Appropriate dust extractions / suppression equipment will be a condition imposed on the drill contractor for their drill rigs</p>
<p>Promotion of Access to Information Act, Act 2 of 2000 (PAIA)</p>	<p>BAR and consultation</p>	<p>Everyone has a right to know and more specifically when they ask for such information. Hence when I&APs are given more information such as BAR and BID for scrutiny</p>
<p>National Environmental Management: Protected Areas Act, Act 57 of 2003</p>	<p>Reduce pollution on the entire prospecting Area</p>	<p>These deals with giving a 100m buffer zone from the main activity which is drilling. Mbeu Ntsu will comply with this</p>
<p>Section 24 of the Constitution of the Republic of South Africa (Act No.108 of 1996) states that everyone has the right to a clean environment</p>	<p>The entire BAR</p>	<p>By drafting a BAR we will be addressing issues which may arise and how we will reduce the pollution so that everyone can have clean environment</p>
<p>Mine Health and Safety Act, Act 29 of 1996</p>	<p>This BAR</p>	<p>All people entering the working areas must be well dressed in PPE</p>

f. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITY

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

Should prospecting prove successful and a resource is quantified, it would indicate a potential viable economic activity in the form of mining. Mining will contribute greatly to local economic growth through direct employment, future business opportunities, royalties and tax revenues.

Mbeu Ntsu (Pty) Ltd is an emerging 100% HDA owned Mining Company, whose vision and mission is to unlock and create wealth for the country and employment for the previously disadvantaged individuals. The granting of this PR may help the mining industry as well as transformation this is also including shaping and developing black mining entrepreneurs.

Based on background and desktop studies, it is evident that the proposed study area hosts plenty of Iron Ore, Limestone and Manganese Ore (see geological map below). However, the proposed prospecting activities will help to:

- Confirm and obtain additional information concerning potential targets through minimally invasive activities (e.g. desktop studies) and invasive (e.g. drilling) activities.
- Assess if the resource can be extracted through future mining in an environmentally, socially and economically viable manner. Should prospecting activities prove that there are feasible minerals to allow for mining, a new mine may be developed which would generate extensive employment opportunities in an area where employment is needed.

g. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE

No alternatives were considered. Due to the location of the ore body it is not possible to alter the geographic location of the prospecting right activities. It is however understood that the ore body is anticipated to be towards the central parts of the farms where there are mountains. The exact location of the boreholes will be

decided on once the ground penetrating radar and handheld ground magnetic mapping have been completed. Guidance on the siting of drill sites and related mitigation measures is included in the EMPr.

The applicant intends to use the most state of the art drill rigs as well one that makes little noise. The drill rig must be well serviced in order to minimize pollution from exhaust as well as oil leaks.

h. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE

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

No alternatives were considered. Due to the location of the ore body it is not possible to alter the geographic location of the prospecting right activities. It is however understood that the ore body is anticipated to be towards the central parts of the farms. The exact location of the boreholes will be decided on once the ground penetrating radar and handheld ground magnetic mapping have been completed. Guidance on the siting of drill sites and related mitigation measures is included in the EMPr.

i. Details of the development footprint alternatives considered.

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

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

The location of the project is located in the Hotazel area, portion 1 & 2 of Goold 329 are located 15km south east of Hotazel while Simondium 308 and Constantia 309 are located 20km south west & East of Hotazel town in the Northern Cape province.

(b) the type of activity to be undertaken;

- Mapping
- Drilling
- Geophysics

- Geochemistry and Sampling

Site preparation Site Rehabilitation and Closure.

(c) the design or layout of the activity;

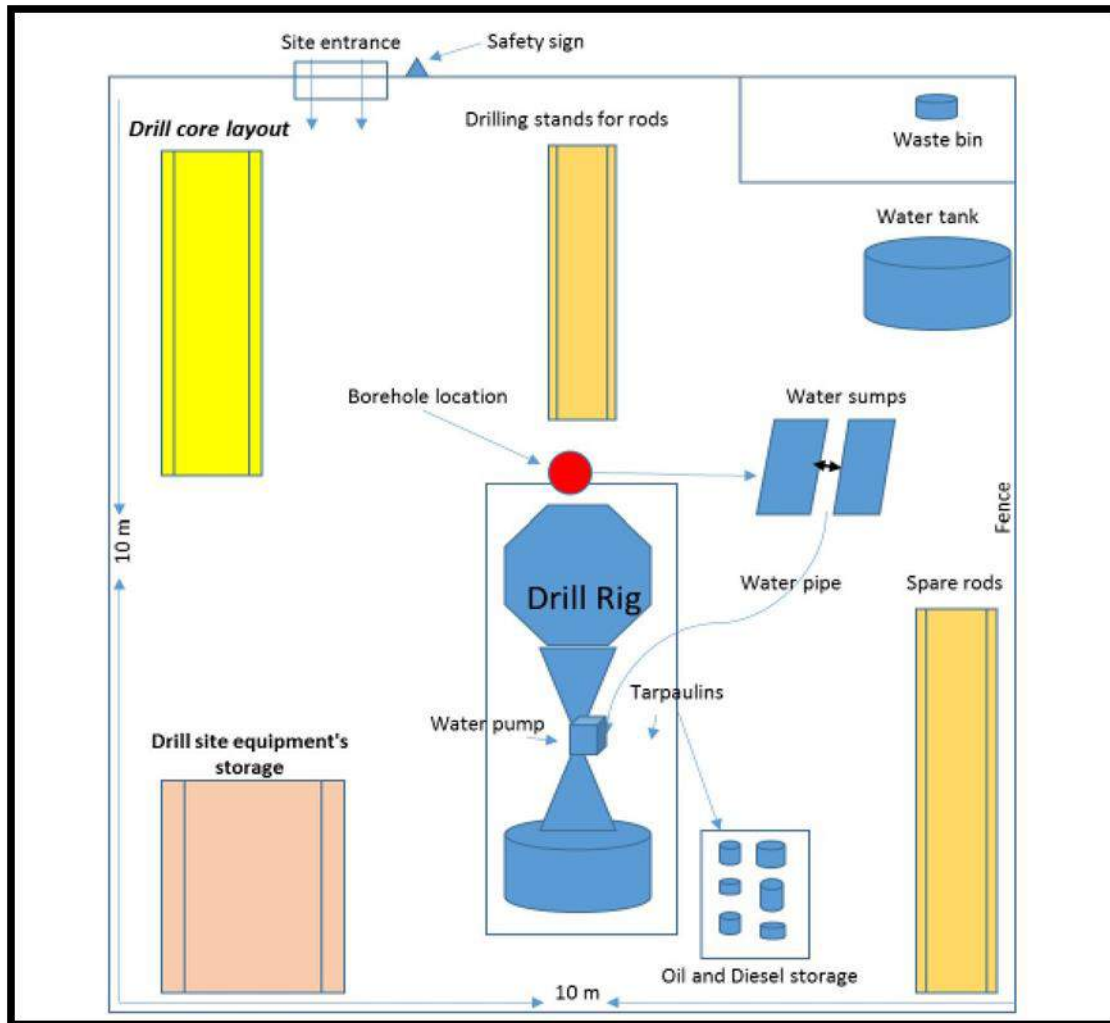


Figure 16: Layout design

ii. Details of the Public Participation Process Followed

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

As part of consultation process, the site notice were placed in various farms and location on the 7th of March 2020, a newspaper advert will be placed on the 'Beeld-Newspaper' on the 30th of April 2021, while the official meeting will take place on the 7th of May 2021. While formal letters were sent to the various I&APs on the 30th of

April 2021. The land owners as well as any I&APs have more 30 days of knowledge to either attend the meeting or comment on the Draft BAR.

iii. Summary of issues raised by I&Aps

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

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
<div data-bbox="353 970 1939 1137"> <p>THIS WILL BE ADDRESSED AFTER THE PUBLIC MEETING</p> </div>				

- iv. The Environmental attributes associated with the alternatives. (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)**

(1) Baseline Environment

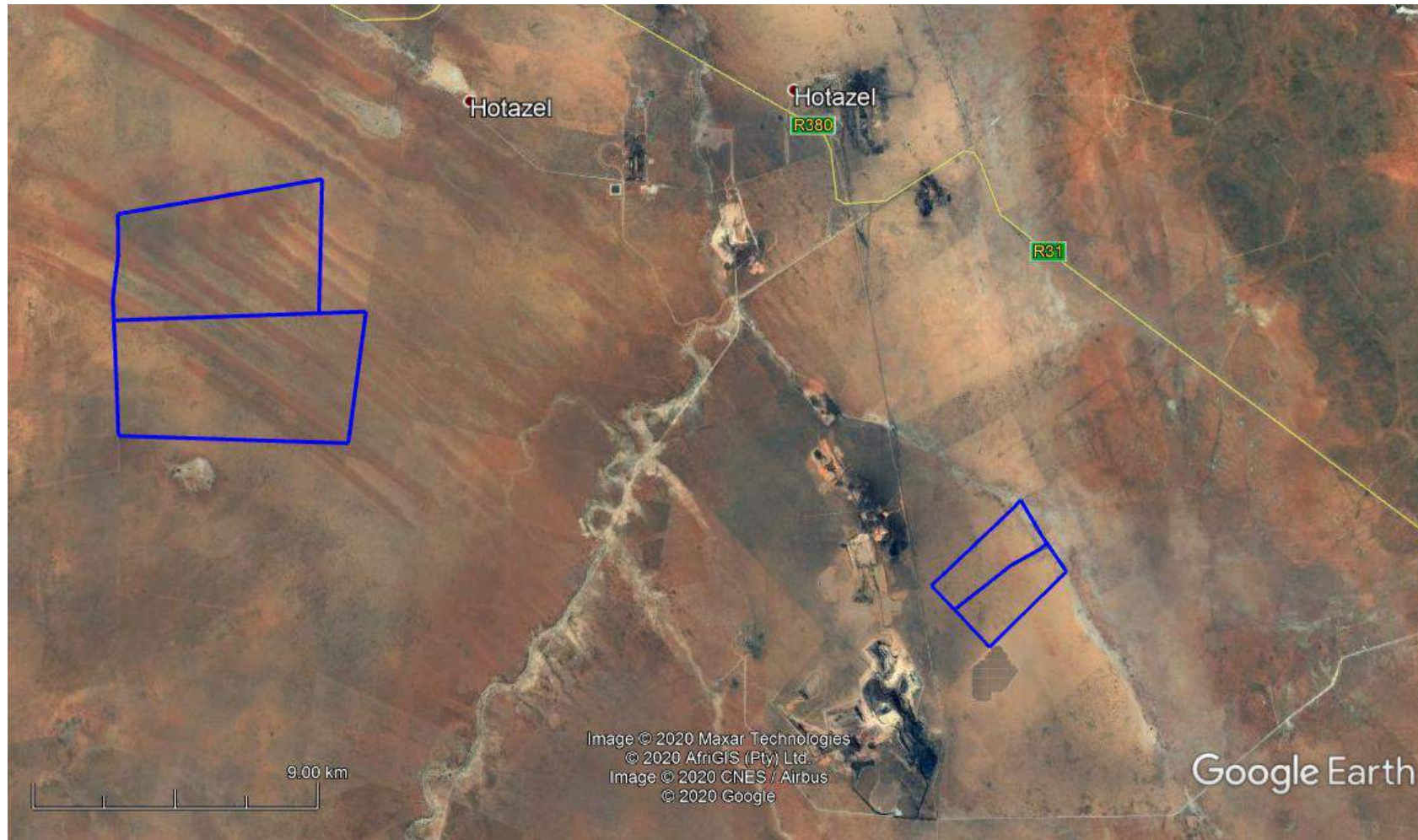
The baseline information provided here is aimed at giving the reader perspective on the existing status of the biophysical, socio-economic, and cultural environment.

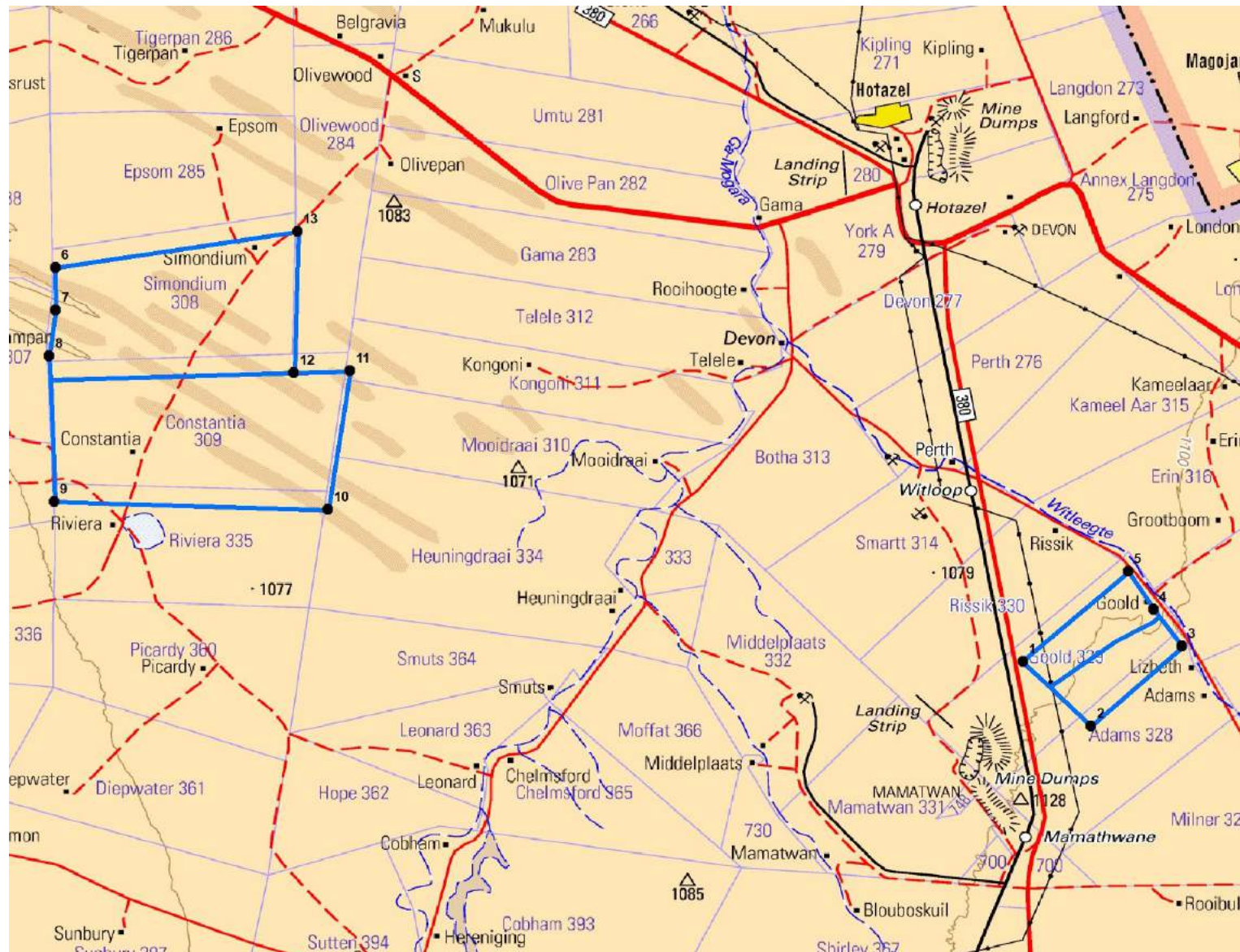
(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Topography

The topography of an area determines a number of factors including the flow of surface water, and in many cases, also groundwater; the type of biodiversity and land use; the aesthetic appearance of the area and climatic factors such as wind speeds and direction. Changes to topography through the establishment of prospecting related infrastructure and activities will not have any impact on surface water drainage and visual aspects. The general topography of the area is gently flat with the sloping towards the south, on Goold, the topography is 1105masl while on Simondium 308 and Constantia 309 is approximately 1090.





Climate

Average rainfall data, was sourced from both the Milner (0393083) and Kuruman (0393806) Weather Service Stations located approximately 18km and 55km from the project. Wind and temperature data were sourced from the Loclim programme (FAO, 2005). 24-hour rainfall depths for various return periods were calculated from single day rainfall results obtained from Water Research Commission (WRC) software developed in 2001, which has a database of rainfall stations records up to the year 2000.

The project falls within the northern steppe climatic zone as defined by the South African Weather Bureau. This is a semi-arid region characterised by seasonal rainfall, hot temperatures in summer, and cold temperatures in winter.

Rainfall

The rainfall data extracted using the Daily Rainfall Extraction Utility programme include the two SAWS stations, Winton (0392148 W) and Milner (0393083 W). The rainfall data extracted from the DWA online database is the Kuruman DWA station (D4E004). The rainfall data extracted from the WR2005 database is for quaternary D41K. Details of monthly rainfall from these sources are shown below in Table 9 below. The long-term average annual precipitation is approximately 382 mm with rainfall generally in the form of thunderstorms. The majority of the rainfall occurs during the summer months of October to April

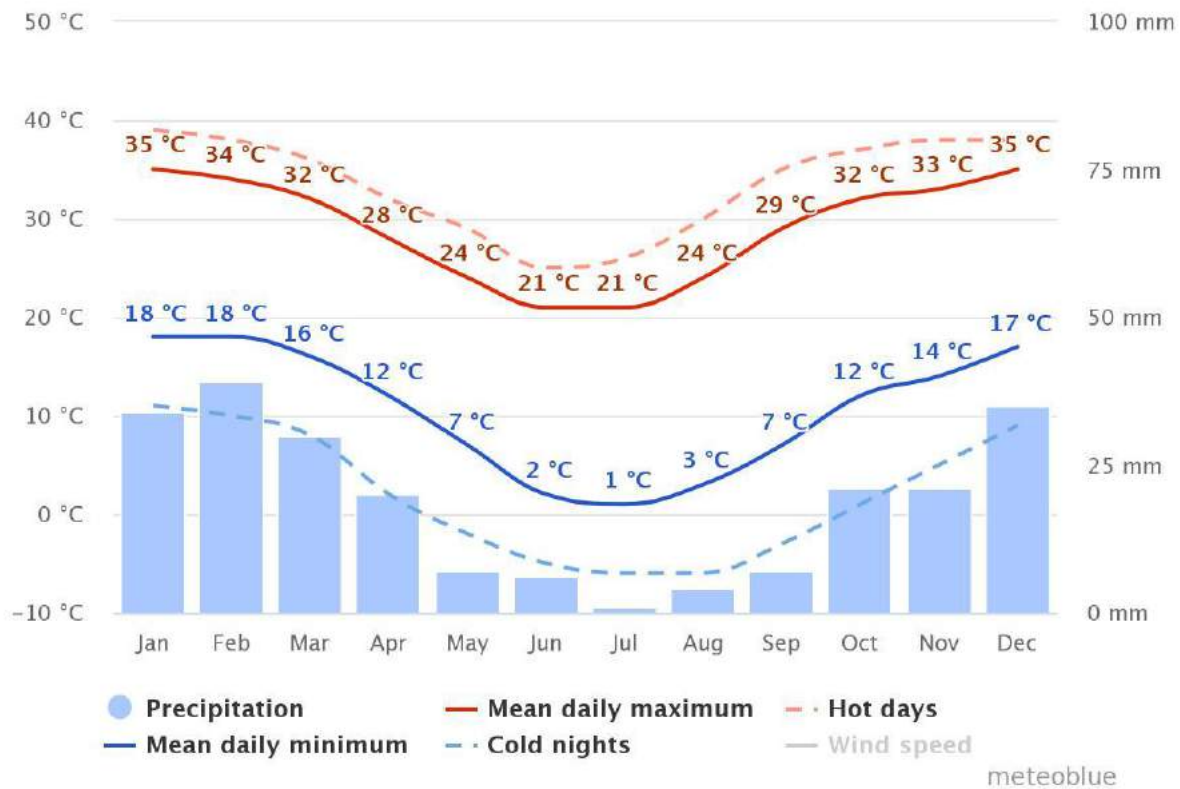


Figure 17: Rainfall statistic (1917 to 1991)

Wind

Wind roses comprise spokes which represent the directions from which winds blew during the period. The colours reflected the different categories of wind speeds, the blue area, for example, representing winds of 0 m/s to 3 m/s. The circles provide information regarding the frequency of occurrence of wind speed and direction categories. The frequency, at which calms occurred, i.e. periods during which the wind speed was below 1 m/s, is also indicated.

The seasonal variability wind roses recorded at Kuruman station indicates that average annual wind speeds are approximately 5.3 m/s. During all seasons, winds from the north-east sectors are prevalent. During spring there is a dominant south-west

wind

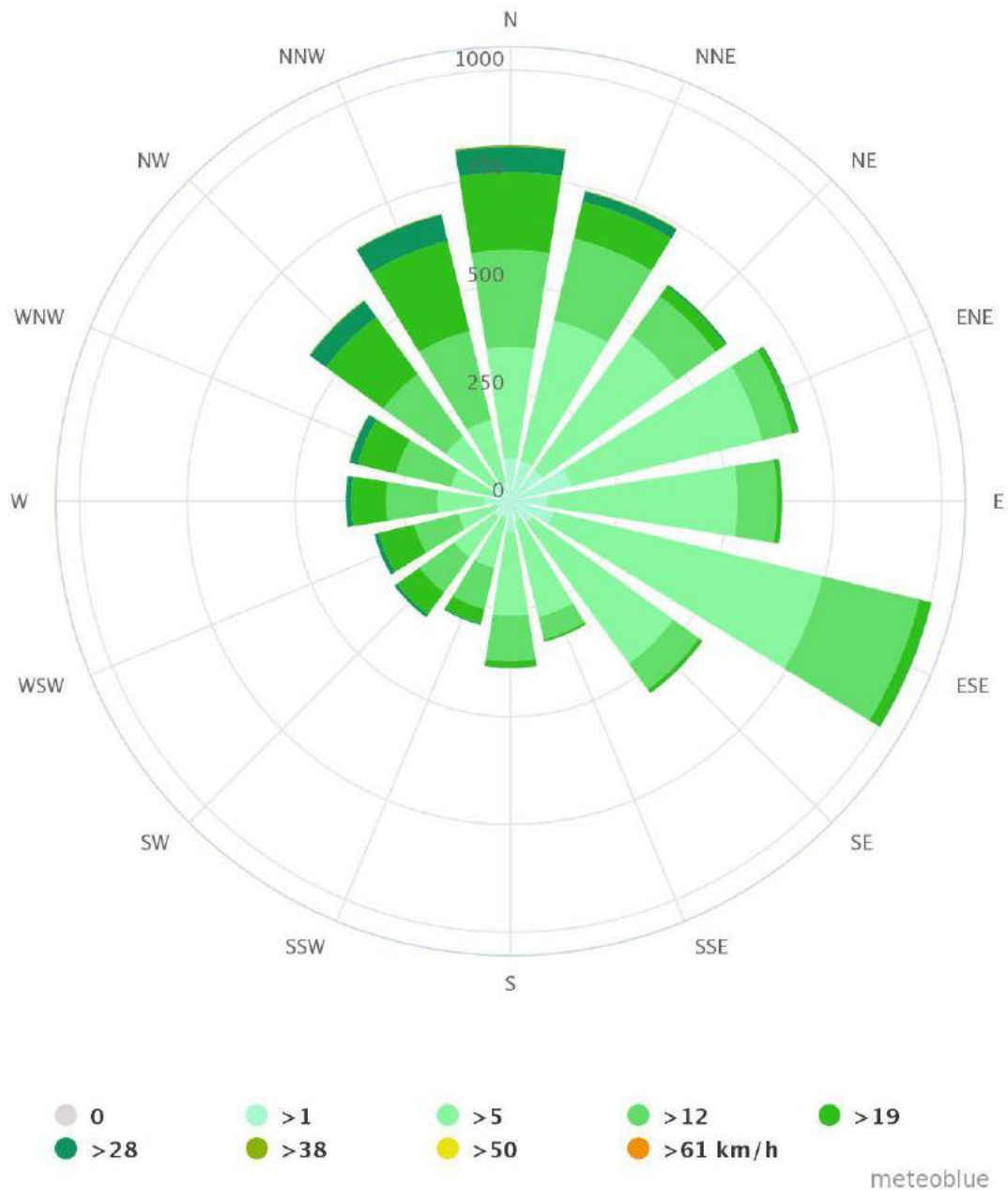


Figure 18: Wind Rose

Soils

The only comprehensive account of the soils of South Africa is that by Van der Merwe (1940). The classification of South African soils has nevertheless evolved, with the publication of numerous regional studies, through various approximations

and is currently well established, with 73 soil forms constituting the highest level grouping (Soil Classification Working Group 1991). A new account is now available (Fey 2010) which covers geographic distribution, properties (including selected profile descriptions and analytical data), classification (including correlation with major international systems), genesis, and environmental significance. The objectives of this paper are to present a synopsis of the soil groups that were created as the basis for this general account, to show their distribution and frequency of occurrence, and to broadly indicate how they relate to the groups of the World Reference Base (IUSS Working Group WRB 2006). The soil groups Fourteen soil groups have been created (Fey 2010) with the guiding principle being the identification of a diagnostic horizon, as defined by the Soil Classification Working Group (1991), so as to construct an eliminative key (Table 1) which is similar in operation to those employed by a number of international classifications. A representative illustration of each group is provided in Figure 1. If one of four special kinds of topsoil horizons is not present (i.e. the topsoil is orthic) then the direction and degree of development of the subsoil are considered. If none of the seven categories of subsoil development is sufficiently expressed then the soil is placed in one of the remaining, immature soil groups which are differentiated on the basis of three broad categories of parent material. The prospecting site is predominantly located in the Rubic Arenosol and Rhodic Cambisol soil type.

Soils with special topsoil characteristics	1	Organic	Wetland or montane peat	Organic O
	2	Humic	Humus enrichment; free drainage; low base status; humid climate	Humic A
	3	Vertic	Swelling, cracking clay; basic parent material; semi-arid to sub-humid climate	Vertic A
	4	Melanic	Dark, structured clay; high base status; semi-arid to sub-humid climate	Melanic A
Soils with special subsoil characteristics relating to pedogenic accumulation and having an orthic topsoil	5	Silicic	Cementation by amorphous silica or sepiolite; arid climate	Dorbank (duripan) or sepiocrete
	6	Calcic	Carbonate or gypsum enrichment; arid climate	Soft or hardpan carbonate or gypsic B
	7	Duplex	Marked textural contrast through clay enrichment	Pedocutanic or prismaeutanic B
	8	Podzolic	Metal humate enrichment; siliceous parent material	Podzol B
	9	Plinthic	Absolute iron enrichment; localised, hydromorphic segregation with mottling or cementation	Soft or hard plinthic B
	10	Oxidic	Residual iron enrichment through weathering; uniform colour	Red apedal, yellow-brown apedal or red structured B
Young soils with an orthic topsoil but weakly developed subsoil	11	Gleyic	Protracted reduction in an aquatic subsoil or wetland	G horizon
	12	Cumulic	Incipient soil formation in colluvial, alluvial or aeolian sediment	Neocutanic or neocarbonate B, regic sand, thick E horizon or stratified alluvium
	13	Lithic	Incipient soil formation on weathering rock or saprolite	Lithocutanic B or hard rock
	14	Anthropic	Human disturbance	Disturbed material

Figure 19: Soil Types Group

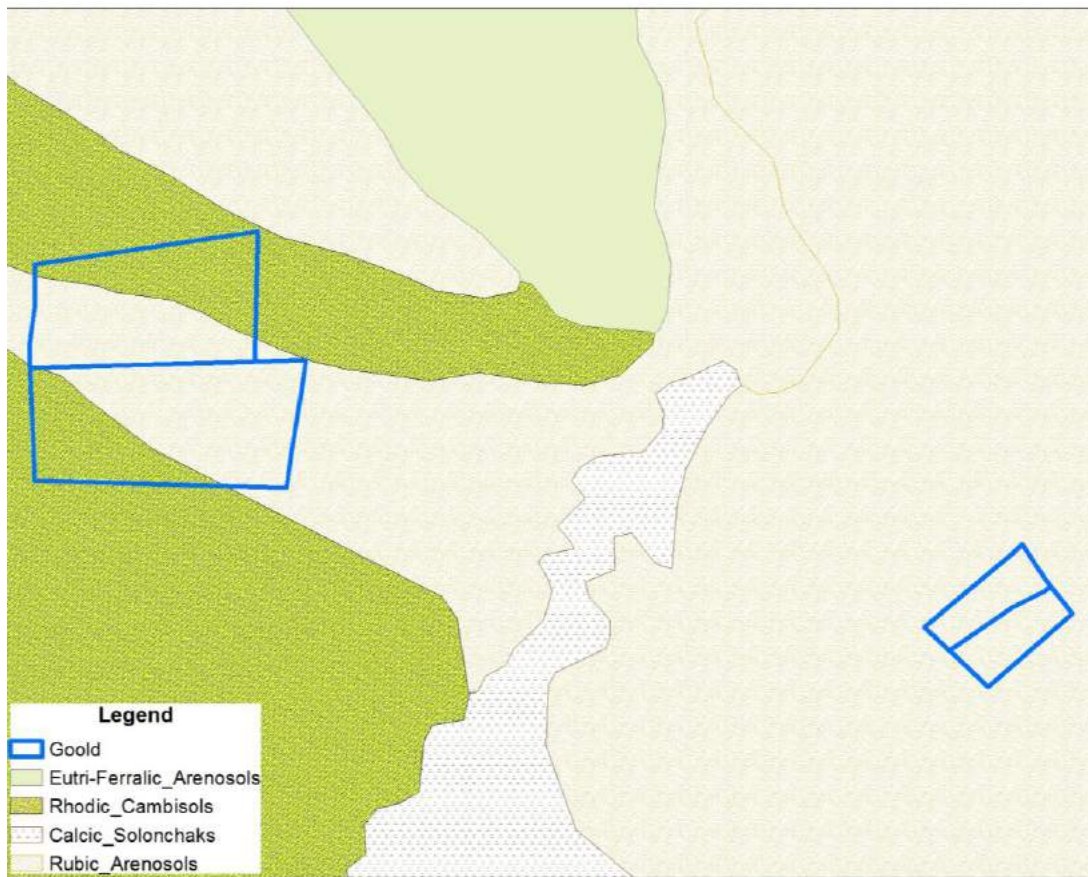


Figure 20: Soil Types on site

Vegetation Type

The project area falls within the Kathu Bushveld and Gordonia Duneveld.

The Kathu Bushveld is open savannah with *Acacia erioloba* (Camel thorn), *Diospyros lycioides* (Karoo bluebush), and *Lycium hirsutum* (River honey-thorn) dominating the shrub layer and a highly variable grass layer.

The Gordonia duneveld typically occurs on the undulating dunes, and consists of open shrubland with grasslands on the ridges and *acacia haematoxylon* (Grey camel thorn) on the dune slopes. *Acacia mellifera* (Black thorn) is prominent on the lower slopes and *Rhigozum trichotomum* (Three thorn) is found between the dunes

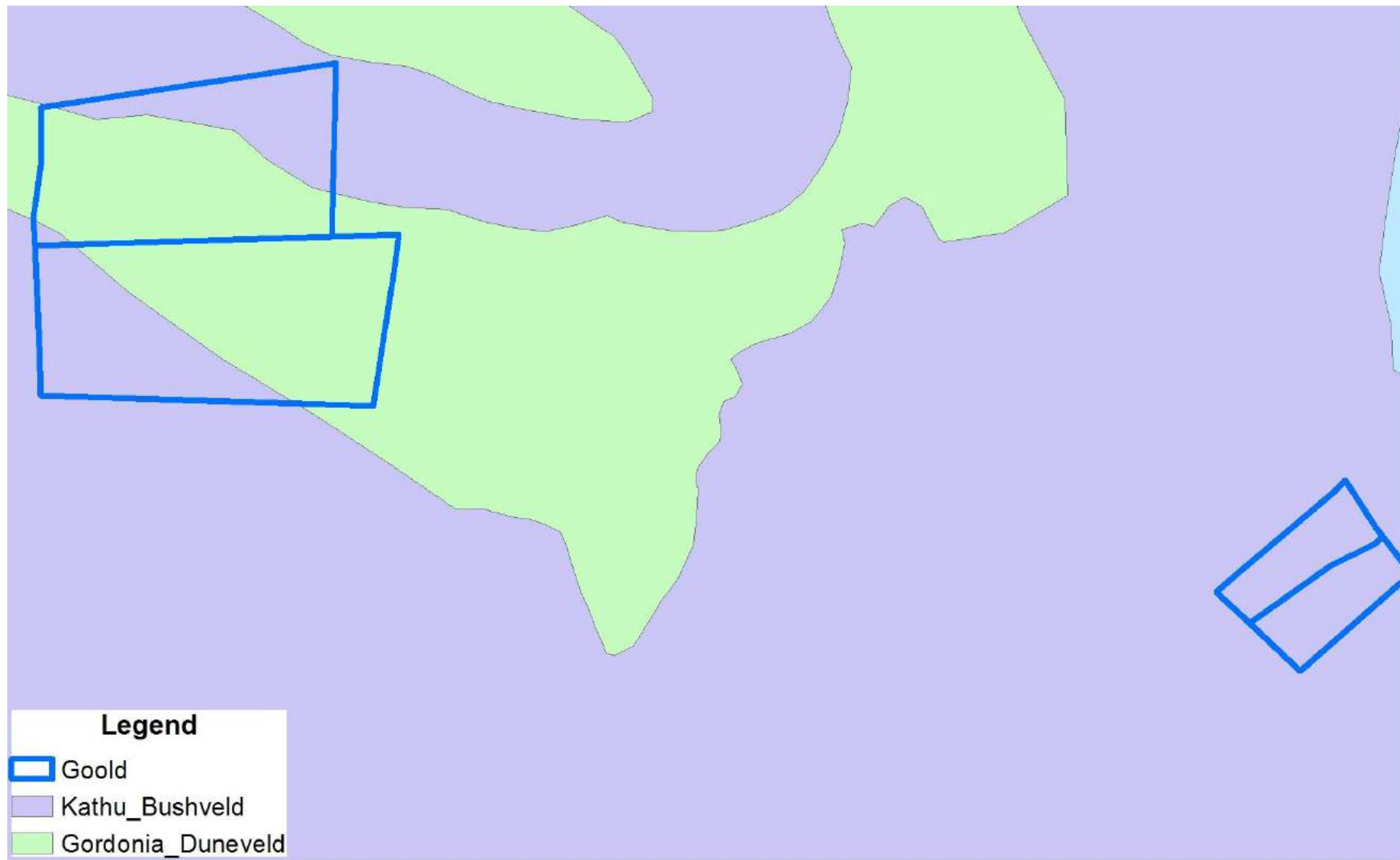


Figure 21: vegetation Map

Regional Geology

The world's largest land based sedimentary manganese deposit is contained in the Kalahari Manganese Field (KMF), situated 47km northwest of Kuruman in the Northern Cape. The KMF comprises five erosional, or structurally preserved, relics of the manganese bearing Hotazel Formation of the Paleoproterozoic Transvaal Supergroup. These include the Mamatwan-Wessels deposit (also known as the main Kalahari Basin), the Avontuur and Leinster deposits, and the Hotazel and Langdon Annex/Devon deposits. The project is located on the south-western and south east outer rim of the KMF.

Local Geology

The project is exploiting the manganese from the Hotazel Formation (Transvaal Supergroup). The Hotazel Formation consists primarily of the Banded Iron Formation (BIF). Three laterally continuous stratiform manganese layers are interbedded within the BIF; upper, middle and lower manganese bodies. The lower body represents the main ore bed and varies in thickness from 5 to 45m. The middle body contains uneconomic grades of manganese and is only 1 to 2 m thick at neighbouring mines. The upper body is mined on a local scale and averages between 5m and 20m thick. The ore layer dips gradually to the west at approximately eight degrees (Evans et al, 2001 as cited in Saad, 2010).

The Hotazel Formation is underlain by basaltic lava of the Ongeluk Formation (Transvaal Supergroup) and directly overlain by dolomite of the Mooidraai Formation (Transvaal Supergroup); however, the extent of the dolomite within the study area is not fully understood. The Transvaal Supergroup is overlain unconformably by the Olifantshoek Supergroup which consists of arenaceous sediments, typically interbedded shale, quartzite and lavas overlain by coarser quartzite and shale. The Olifantshoek Supergroup is overlain by Dwyka Formation which forms the basal part of the Karoo Supergroup.

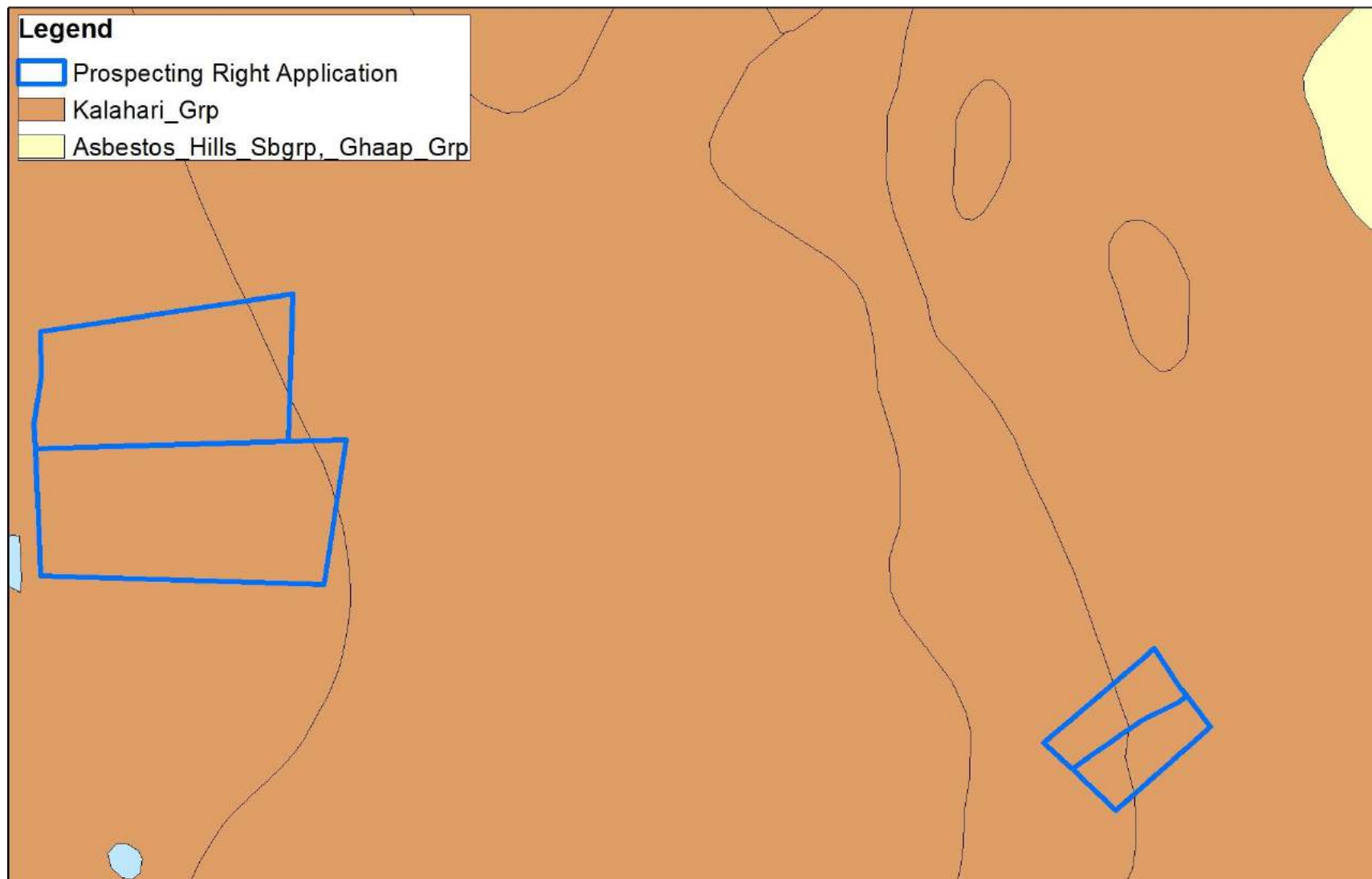


Figure 22: Geological map

Surface Water

The prospecting area is enveloped by 3 rivers, namely the Ga-Mogara, Witleegte and Vlermuisleegte. The Witleegte borders the Goold farms directly on the east, while Ga-Mogara and the Vlermuisleegte borders the Simondium 308 and Constantia 309 on the east but 12km away. The Witleegte river flows in a north to south direction while the Ga-Mogara and the Vlermuisleegte flows in a smilimar direction.

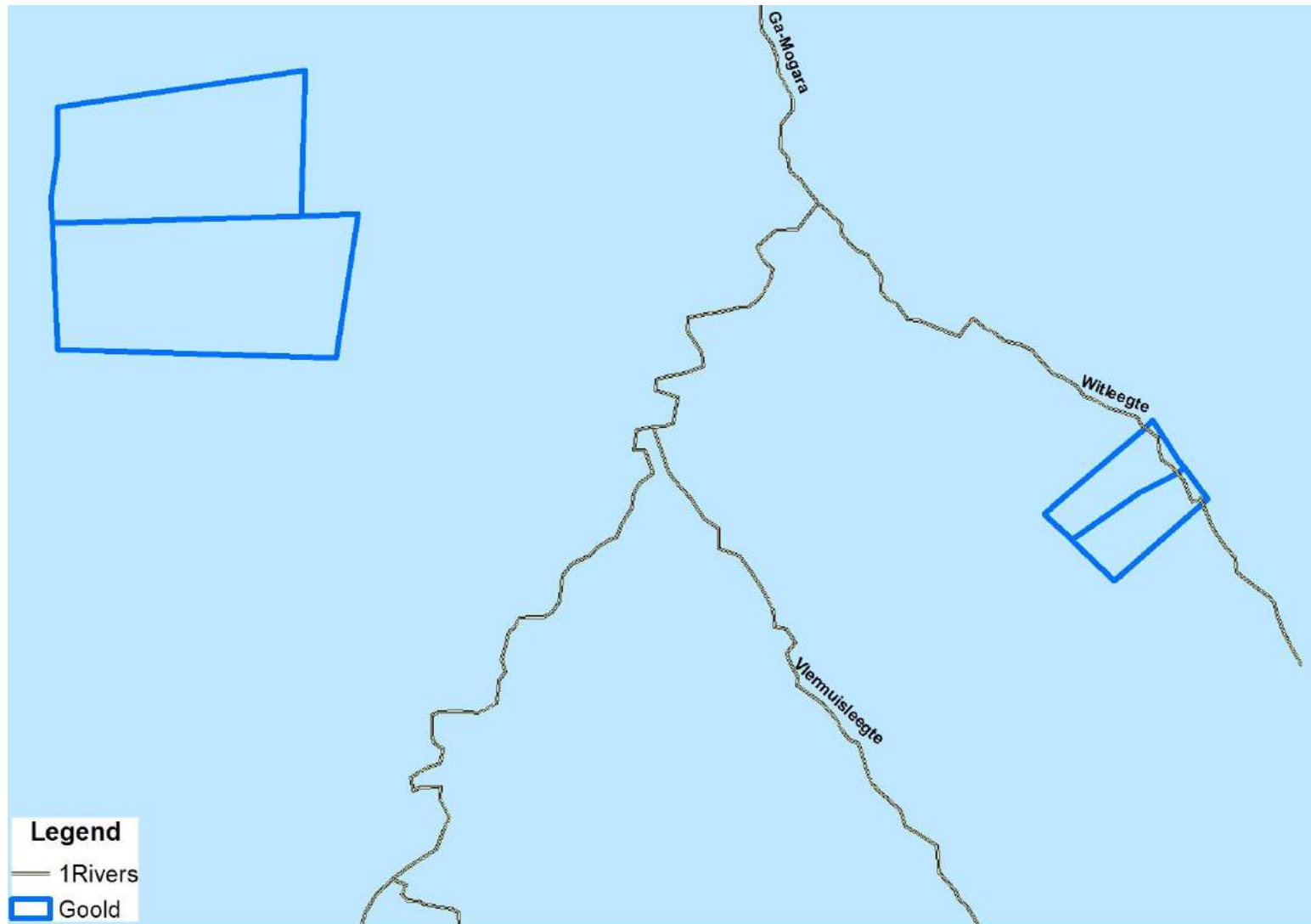


Figure 23: Surface Water in the area

Ground Water

The amount or quality of ground water on the area of application is not known as there was no investigation into such. Most farmers in and around the area have confirmed using ground water for their activities.

Air Quality

The air quality in the area is slightly polluted. This is on the basis of being the fact that the area is populated with mines in the area as well as gravel roads as some drivers drive faster than recommended and this causes or aggravates air pollution. Another factor which increases the air pollution is the wind speed on a day of dust from the. The higher the speed of wind the longer the distance that the pollution will travel. Mbeu Ntsu will make sure that during the prospecting, it does all it can in its powers to minimize the pollution

Visual

Based on field work done during the gathering of data, it is evident that the prospecting infrastructure will be visible from nearby farms and people, especially those who are less than 500m away, especially during the drilling phase only. Given the fact that this will be for a short period, the impact will be little to none as it is not permanent. Since there is no operating at night, this will not have an impact on the neighbours in terms of the lights coming from the operations.

Heritage

The preliminary data collection indicates that there are some graves and building older than 60 years which are on site and need protection (Envass, 2012 for Amari Manganese).



Figure 24: 60 years + house in Simondium



Figure 25: Some graves in the prospecting area

(b) Description of the current land uses.

The properties applied for are owned by various owners and the table below indicate the type of land use

Farm Details	Land Use
Goold Portion 0	Farm house with cattle/livestock farming
Goold Portion	Farm house with cattle/livestock farming
Simondium 308	Farm house with cattle/livestock farming
Constantia 309	Farm house with cattle/livestock farming

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

The environmental features and infrastructure in the proposed project area are described in this section. In summary:

- Soils are well-drained sandy soils, which allow for high infiltration rates, low organic content and are highly erodible;
- The project area has some notable old houses as well as graves which will require preservation and a 100m buffer zone;
- No wetlands are located within the proposed project area however; there are 3 rivers, namely the Ga-Mogara, Witleegte and Vlermuisleegte
- Third party boreholes located on the project site and surrounding farms are utilised for livestock, chicken farming and domestic purposes.



Figure 26: Site vegetation

(d) Environmental and current land use map.

(Show all environmental, and current land use features)



Figure 27: Environmental map

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

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

baseline, and can be avoided, managed or mitigated).

ACTIVITY	DESCRIPTION	Se	D	SP	C	P	Si
1. CONSTRUCTION PHASE IMPACTS							
Road construction	Loss of vegetation + habitat	L	L	L	L	L	L
Escom line	Loss of vegetation + habitat	NOT APPLICABLE					
Plant construction	Loss of vegetation + habitat	NOT APPLICABLE					
Pipeline installation	Loss of vegetation + habitat	NOT APPLICABLE					
Offices	Loss of vegetation + habitat	NOT APPLICABLE					
2. OPERATIONAL PHASE IMPACTS							
Prospecting	Geological degradation	M	L	L	M	M	L
Disposal	Topographic change - dump	L	L	L	L	L	L
Prospecting	Topographic change - pit	NOT APPLICABLE					
Prospecting	Soil pollution - accidental spills and leakages	M	L	L	H	M	M
Operation	Soil pollution (workshop, store, parking)	M	L	L	H	M	M
Operation	Loss of grazing	L	L	L	L	L	L
Operation	Loss of/ disturbance to plants	L	L	L	L	L	L
Extraction of groundwater	Depressed water table	NOT APPLICABLE					
Operation	Problem plant invasion	L	L	L	L	M	L
Operation	Effect on animals	L	L	L	L	L	L
*Waste water disposal	Water regime (regional)	L	L	L	L	L	L
Prospecting	Noise (earth moving equipment and crushers)	L	L	L	L	M	L
Operation	Air quality: Dust - Transport	L	L	L	L	L	L
Operation	Air quality: Dust - Crusher	NOT APPLICABLE					
Prospecting	Noise - blasting nuisance - regional	NOT APPLICABLE					
Prospecting	Noise - blasting nuisance -personnel	NOT APPLICABLE					
Prospecting, operation	Loss of archaeological items	L	H	L	L	L	H
Prospecting	Sensitive landscapes	L	L	L	L	L	L
Mining	Visual impact	L	L	L	L	L	L
3. DECOMMISSIONING PHASE IMPACTS							
Demolition	Waste disposal	POSITIVE					
Rehabilitation	Re-vegetation	POSITIVE					
4. RESIDUAL IMPACTS AFTER CLOSURE							
Vacated site	Rehabilitation of exposed areas	POSITIVE					
Vacated site	Safety risks	POSITIVE					

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

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

Note: Part A provides the definition for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D.

PART A: DEFINITIONS AND CRITERIA		
Definition of Significance	Significant = consequences X probability	
Definition of consequence	Consequence is a function of intensity, special extent and duration	
Criteria for ranking of the INTENSITY of environmental impacts	M+	Severe change, disturbance or degradation. Associated with severe consequences. May result in severe illness, injury or death. Targets, limits and thresholds of concern continually exceeded. Substantial intervention will be required. Vigorous/widespread community mobilization against project can be expected. May result in legal action if impact occurs.
	M	Prominent change, disturbance or degradation. Associated with real and substantial consequences. May result in illness or injury. Targets, limits and thresholds of concern regularly exceeded. Will definitely require intervention. Threats of community action. Regular complaints can be expected when the impact takes place.
	M	Moderate change, disturbance or discomfort. Associated with real but not substantial consequences. Targets, limits and thresholds of concern may occasionally be exceeded. Likely to require some intervention. Occasional complaints can be expected.
	L	Minor (Slight) change, disturbance or nuisance. Associated with minor consequences or deterioration. Targets, limits and thresholds of concern rarely exceeded. Require only minor interventions or clean-up actions. Sporadic complaints could be expected.
	VL	Negligible change, disturbance or nuisance. Associated with very minor consequences or deterioration. Targets, limits and thresholds of concern never exceeded. No interventions or clean-up actions required. No complaints anticipated.
	VL+	Negligible change or improvement. Almost no benefits. Change not measurable/will remain in the current range.
	L+	Minor change or improvement. Minor benefits. Change not measurable/will remain in the current range. Few people will experience benefits.
	M+	Moderate change or improvement. Real but not substantial benefits. Will be within or marginally better than the current conditions. Small number of people will experience benefits.
	H+	Prominent change or improvement. Real and substantial benefits. Will be better than current conditions. Many people will experience benefits. General community support.
	M+	Substantial, large-scale change or improvement. Considerable and widespread benefit. Will be much better

			than the current conditions. Favourable publicity and/or widespread support expected.					
Criteria for ranking the DURATION of impacts			VL	Very short, always less than a year. Quickly reversible				
			L	Short-term, occurs for more than 1 but less than 5 years. Reversible over time.				
			M	Medium-term, 5 to 10 years.				
			H	Long term, between 10 and 20 years. (Likely to cease at the end of the operational life of the activity)				
			L	Very long, permanent, +20 years (Irreversible. Beyond closure)				
Criteria for ranking the EXTENT of impacts			VL	A part of the site/property.				
			L	Whole site.				
			M	Beyond the site boundary, affecting immediate neighbours				
			L	Local area, extending far beyond site boundary.				
			VH	Regional/National				
			A part of the site/pro perty	Whole site	Beyond the site affecting neighbours	Local area, extent far beyond site	Regional/National	
			VL	L	M	L	L	
INTENSITY=VL								
Duration	Very Long	VH	Low	Low	Low	Low	Low	
	Long Term	H	Low	Low	Low	Low	Low	
	Medium Term	M	Low	Low	Low	Low	Low	
	Short Term	L	Low	Low	Low	Low	Low	
	Very Short	VL	Low	Low	Low	Low	Low	
INTENSITY = L								
Duration	Very Long	VH	Low	Low	Low	Low	Low	
	Long Term	H	Low	Low	Low	Low	Low	
	Medium Term	M	Low	Low	Low	Low	Low	
	Short Term	L	Low	Low	Low	Low	Low	
	Very Short	VL	Low	Low	Low	Low	Low	
INTENSITY = M								
Duration	Very Long	VH	Low	Low	Low	Low	Low	
	Long Term	H	Low	Low	Low	Low	Low	
	Medium Term	M	Low	Low	Low	Low	Low	
	Short Term	L	Low	Low	Low	Low	Low	
	Very Short	VL	Low	Low	Low	Low	Low	
INTENSITY = H								
Duration	Very Long	VH	Low	Low	Low	Low	Low	

	Long Term	H	Low	Low	Low	Low	Low
	Medium Term	M	Low	Low	Low	Low	Low
	Short Term	L	Low	Low	Low	Low	Low
	Very Short	VL	Low	Low	Low	Low	Low
INTENSITY = H							
Duration	Very Long	VH	Low	Low	Low	Low	Low
	Long Term	H	Low	Low	Low	Low	Low
	Medium Term	M	Low	Low	Low	Low	Low
	Short Term	L	Low	Low	Low	Low	Low
	Very Short	VL	Low	Low	Low	Low	Low
PART C: DETERMINING SIGNIFICANCE							
PROBABILITY (of exposure to impacts)	Definite/ Continuous	VH	Very Low	Low	Medium	High	Very High
	Probable	H	Very Low	Low	Medium	High	Very High
	Possible/ frequent	M	Very Low	Very Low	Low	Medium	High
	Conceivable	L	Insignificant	Very Low	Low	Medium	High
	Unlikely/ improbable	VL	Insignificant	Insignificant	Very Low	Low	Medium
			VL	L	M	H	VH
CONSEQUENCE							

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	Decision Guideline
Very High	Potential fatal flaw unless mitigated to lower significance.
High	It must have an influence on the decision. Substantial mitigation will be required.
Medium	It should have an influence on the decision. Mitigation will be required.
Low	Unlikely that it will have a real influence on the decision. Limited mitigation is likely to be required.
Very Low	It will not have an influence on the decision. Does not require any mitigation
Insignificant	Inconsequential, not requiring any consideration.

* VH = Very High, H = High, M= Medium, L= Low and VL= Very Low and + denotes a positive impact.

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

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

At the moment there is no alternative layout as we only have this only site to work with. Mbeu Ntsu does not have any plans to change the site as this seems to be the best and only suitable site under the circumstances of not having other areas free of an application by other applicants.

Potential impacts that were identified during the Basic Assessment process are discussed under environmental component headings in this section. As indicated, the project would not result in adverse surface disturbances as the planned prospecting activities would be managed and also rehabilitation will occur, as such, a 100m buffer zone must be adhered to all rivers and water features as well as any heritage sensitive areas.

Advantages of this site

Since the area concerned was selected based on desktop studies, geology and literature review, we have found that the area's geology is that which Iron Ore, Limestone and Manganese occurs. There are no known disadvantages of the selected site in terms of the mineral to be prospected for as well as the location and environmental issues/concerns, however, the selection of any site besides the selected site is the fact that the mineral to be prospected might not be available in the alternative site or the availability of the land to be prospected by this organisation.

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

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

It is critical to note that there were no issues raised so far as the public participation has not taken place. MNB Holdings together with Mbeu Ntsu proposes the following:

- All work will be done after an agreement with the land owner of the Land Access agreement
- All drilling will be done with consideration of the land owners;
- All boreholes to be capped or left to be used by land owners on their request if there is water
- Compensation will be paid should any damages be caused due to prospecting
- Water will be brought in by a water cart and no extraction of water will be done on site.
- All prospecting will be done, Monday to Sat during office hours and no after hours work.
- All water ways, graves, houses older than 60 years including any wetland will be given a 100m buffer zone

ix) Motivation where no alternative sites were considered.

Before a prospecting application can be lodged, the applicant had to conduct a brief desktop studies and looking at the Geology was done. There are other areas of interesting geology and mineralogy but unfortunately most of them if not all of them

have either existing prospecting rights, mining right or an existing application pending to be finalised.

The existing farms by Mbeu Ntsu were the best suitable farms which were available with the best Geology.

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

There is no alternative location for this project or location. The site was selected based on the Geology of the site.

i. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site

(In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

Biophysical and socio-economic impacts associated with the proposed project were identified through data collection undertaken by MNB Holdings personnel and the specialists on behalf of the applicant. As part of the public participation process/consultation, I&APs and commenting authorities are being provided with opportunities to provide input into the BA process and comment on the proposed project, including the identification of environmental and socio-economic impacts.

Description of the Process undertaking to assess and rank the Impacts and Risk

A description of the assessment methodology used to assess the severity of identified impacts (including the nature of impacts and the degree to which impacts may cause irreplaceable loss of resources), the extent of the impacts, the duration and reversibility of impacts, the probability of the impact occurring, and the degree to which the impacts can be mitigated.

The table follow provides a description of the impacts on environmental and socio-economic aspects in respect of each of the main project actions / activities and processes that will be assessed. No alternatives were considered due to the location

of the ore body, it is not possible to alter the geographic location of the prospecting right activities. The exact location of the boreholes will be decided on once the ground penetrating radar and handheld ground magnetic mapping have been completed including Geophysics.

Potential impact	Activity	Project phases
Loss of soil capability through physical disturbance and contamination resources and land	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
General and physical disturbance of biodiversity	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Alteration of natural drainage patterns reducing contributions to the catchment	Not applicable	Not applicable
Contamination of surface water	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables	Operational Decommissioning Closure

	Removal of equipment and structures Rehabilitation Maintenance and aftercare	
Reduction of water availability to third parties through groundwater abstraction	Water use and management	Construction Operational Decommissioning
Contamination of groundwater resources	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Air pollution	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Increase in disturbing noise levels	Site preparation Earthworks Waste management Transport	Construction Operational Decommissioning Closure

	Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	
Negative visual views	Site preparation Earthworks Waste management Transport Prospecting Generator use Storage of consumables Removal of equipment and structures Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Loss of heritage/ cultural resources and palaeontological resources	Site preparation Earthworks Transport Prospecting Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Inward migration	Site preparation Earthworks Transport Prospecting Rehabilitation Maintenance and aftercare	Construction Operational Decommissioning Closure
Change in land use	Site preparation Earthworks	Construction Operational

	Transport Prospecting Rehabilitation Maintenance and aftercare	Decommissioning Closure
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j. Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

k. Summary of specialist reports.

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

There was a previous study which was done for heritage in 2012 which is readily available on the internet, it notes the graves and buildings which must be preserved in terms of heritage council. It has been attached as an appendix.

According to Envass 2012, during the pedestrian survey, a number of graves and homesteads were observed, some of which possibly date to the Historical Period. In addition to more recent finds, several Stone Age artefacts were found as well. It should be noted that, due to accessibility and visibility constraints (e.g. vegetation), other further undetected material of cultural and heritage significance might be present in the study area. Apart from the heritage objects present on the property, the significance of the larger historical and pre-historical landscape must be stressed as the archaeological site of Wonderwerk Cave, which is classified as a provincial heritage site, is located in the Kuruman district.

It is recommended that the homesteads on portion 1 of the farm Goold 329 and Simondium 308 be retained as they appear to be older than 60 years and is consequently protected under the National Heritage and Resources Act (25 of 1999). These structures should be recorded by a qualified archaeologist and a destruction permit obtained should the need to demolish these structures arise. In addition to the homesteads it is recommended that a conservation buffer of 100m be placed around the two graveyards located on portion one of the farm Goold 329 as graves are protected under the Human Tissue Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) while graves older than 60 years are protected under the National Heritage and Resources Act (25 of 1999).

It is also recommended that the homestead on Simondium 308 be retained as it appears to be older than 60 years and is consequently protected under the National

Heritage and Resources Act (25 of 1999). Another structure of which the age could not be determined, but may date to historical times since both the homestead and structure consists of similar building material, is located on the southern boundary. These structures should be recorded by a qualified archaeologist and a destruction permit obtained should the need to demolish these structures arise. According to the farm owner of Simondium 308 only one grave is located in relatively close proximity to the homestead, but the exact location is unknown. It is therefore recommended that a sufficient study be carried out to determine the location of this grave in order to avoid possible damage during construction phases should development occur in this area. Should the grave be located, the same recommendation would apply as in the case above.

Should anymore heritage sensitive area during drilling be noted, all work will be stopped and a specialist called on site together with the SAPS if its grave related or human remains.

I. Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment;

Item	Potential Impact	Impact significance of the impact (ratings are negative unless otherwise specified)	
		unmitigated	mitigated
Soil and land capability	Loss of soil capability through physical disturbance and contamination resources and land	Low	Insignificant
Biodiversity	General and physical disturbance of biodiversity	Medium	Very low
Surface Water	Alteration of natural drainage patterns reducing contributions to the catchment	Not applicable	Not applicable
	Contamination of surface water	Insignificant	Insignificant
Ground water	Reduction of water availability to third parties through groundwater abstraction	insignificant	No impact
	Contamination of groundwater resources	Low	Insignificant
Air	Air pollution	Low	Insignificant
Noise	Increase in disturbing noise levels	Low	Very low
Visual	Negative visual views	Very low	Insignificant
Heritage	Loss of heritage/ cultural resources and palaeontological resources	Medium	low
Socio-economic	Inward migration and economic impact	Low	Very low
Land use	Change in land use	medium	Insignificant

(ii) Final Site Map

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

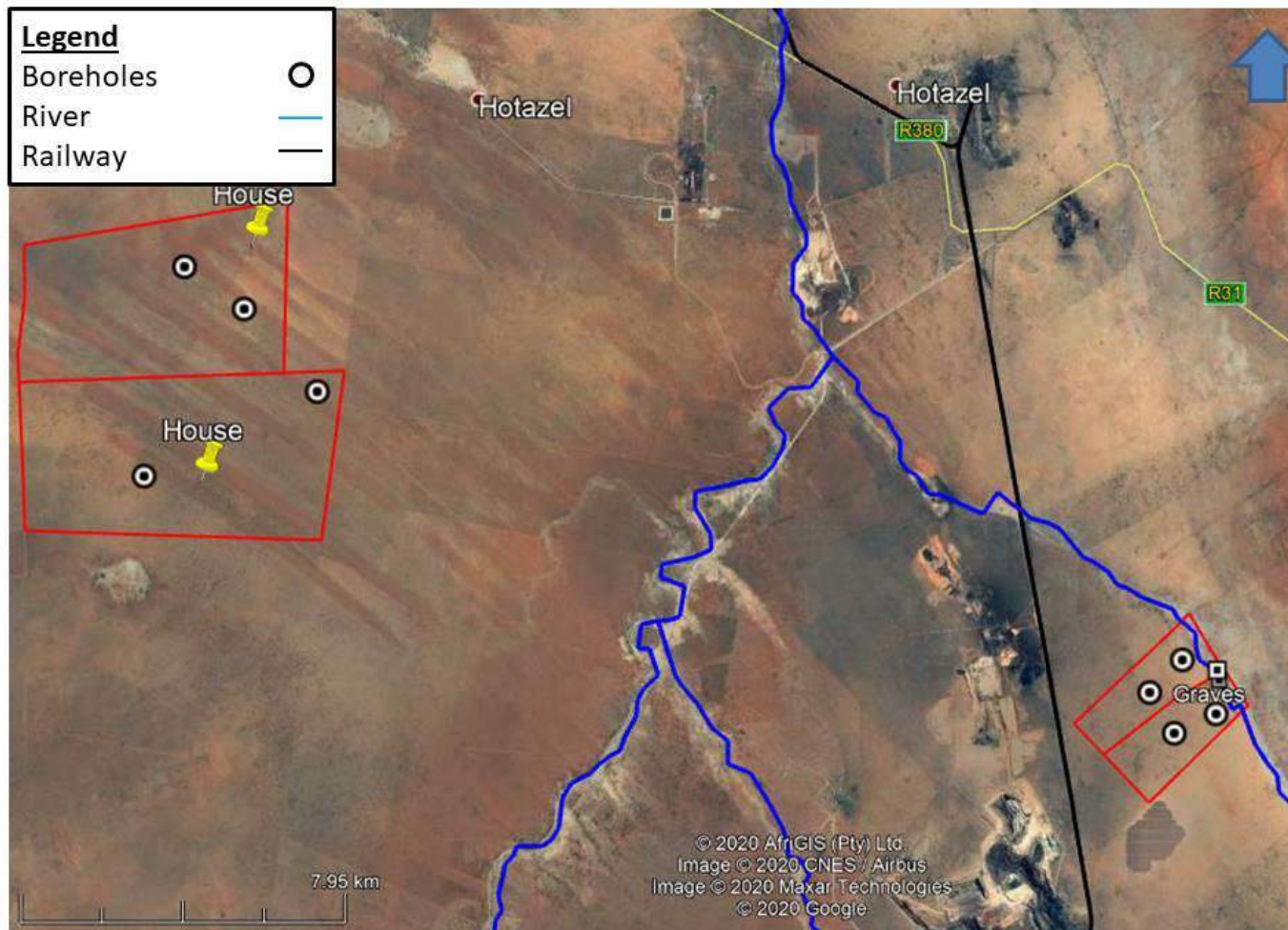


Figure 28: Final Site Map

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

The identified Potential Negative Impacts

Due to the proposed project of prospecting, these are the potential negative impacts:

- Air pollution
- Socio-Economic impacts
- Potential Heritage impacts
- Loss of funds/investments should the drilling not give positive results
- Loss of biodiversity
- Expectations of jobs
- Expectations of farm price hike due to mining
- Potential Security risk due to prospecting

The identified Potential Positive Impacts

- Value adding to the farm
- Mining
- Adding to the fiscus revenue
- Increased revenue to SARS during mining
- Job creation
- Bursaries and Cooperate Social Investments
- SLP and municipality/community upliftment
- Improved Iron Ore, Limestone and Manganese country production/mining

m. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

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

The EMPr will seek to achieve a required end state and describe how activities could have an adverse impact on the environment will be mitigated, controlled and monitored. The EMPr will address the environmental impacts during the Pre-

construction, Construction, Operational, Decommissioning and Post-Closure Phases of the proposed project. Due regard will be given to environmental protection during the entire project. A number of environmental recommendations will therefore be made to achieve environmental protection. The environmental and social objectives will be set to allow prospecting in an environmental and socially responsible manner while ensuring that sustainable closure can be achieved. To achieve closure, the correct decisions need to be taken during the planning phase of the Project.

Environmental Objectives and Goals

- Protect the biophysical environment from any impacts that cannot be mitigated and that will negatively impact on biodiversity on a regional scale;
- Reserve the water resources in line with the objectives of the integrated catchment management and thereby ensure that the limited available resources are utilised to the maximum benefit of the country and its inhabitants;
- Ensure that activities are carried out so as to aid rehabilitation;
- Ensure a safe environment for people to live in as is stipulated in the constitution.

Socio-economic Objectives and Goals

- Adhere to an open and transparent communication procedure with stakeholders.
- Ensure that accurate and regular information is communicated to I&APs in a manner which is understandable and accessible.
- Mitigate negative impacts.
- Enhance project benefits and minimise negative impacts through intensive consultation with stakeholders.
- Assemble adequate, accurate, appropriate, and relevant socio-economic information relating to the context of the operation.
- Ensure that recruitment strategies for the operation, prioritise the sourcing of local labour, and share in gender equality.
- Ensure an atmosphere of equality and non-discrimination among the workforce.

- Contribute to the development of functional literacy and numeracy among employees.
- Empower the workforce to develop skills that will equip them to obtain employment in other sectors of the economy.
- Contribute to the development of a self-reliant community.
- Ensure that decommissioning takes place legally and humanely.

n. Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The most important aspect for any EMP and BAR is to be able to identify issues of concern and sensitivity in the environment and ways in which they can either be mitigated or minimized before, during and after the project itself. It is critical to minimize pollution at all costs.

- The critical aspects to include in the EA should be mitigation, minimization and avoidance of pollution.
- A 100m buffer zone of rivers, water features, wetland as well as any graves and power lines
- Monitoring and evaluation
- Environmental awareness and environmental toolbox talk

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

(Which relate to the assessment and mitigation measures proposed)

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 could be 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 and site 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.

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

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

The EA and activity should be authorised. This is based on the following reasons:

Mbeu Ntsu is a female and 100% black owned organisation and would like to enter the mining sphere and environment in order to develop and be a role player in the mining sphere but more specifically in the Iron Ore, Limestone and Manganese industry. This will also deal with the stereotype that mining is for a certain gender or race while also building the ficsus of the country, creating employment and revenue.

The EAP has conducted the consultation within the prescription of the law in terms of MPRDA and NEMA

All possible pollutants and disturbances have been outlines and possible mitigation addressed.

The BAR has been drafted with due consideration of all activities and land owners

ii) Conditions that must be included in the authorisation

The most important aspect for any EMP and BAR is to be able to identify issues of concern and sensitivity in the environment and ways in which they can either be mitigated or minimized before, during and after the project itself. It is critical to minimize pollution at all costs.

- The critical aspects to include in the EA should be mitigation, minimization and avoidance of pollution.
- A 100m buffer zone of rivers, water features, wetland as well as any graves and power lines
- Monitoring and evaluation
- Environmental awareness and environmental toolbox talk

q. Period for which the Environmental Authorisation is required.

The duration of the Environmental Authorization should be in-line or aligned with the Prospecting Right duration due, to avoid being on the wrong side of the law. The Environmental Authorization should be for a period of 5 years

r. Undertaking

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

I **Mantsepua Adelinah Bolofo**, of MNB Holdings (Pty) Ltd (an EAP on behalf of Mbeu Ntsu (Pty) Ltd) declare the above statement.

Signed.....at.....
..... On the..... of 2021.

s) Financial Provision

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

i) Explain how the aforesaid amount was derived.

Operational rehabilitation has been catered for in the Budget lodged with the application in the Prospecting Work Programme. In terms of decommissioning rehabilitation (Rehabilitation Quantum which is derived from the DMRE quantum calculation template) the amount to be provided by Bank Guarantee or cash deposit is **R32 275**.

The amount is mainly derived from 3 things which is mainly general rehabilitation (including borehole capping and sump and drill chips removal), maintenance and after care for 2-3 years and road rehabilitation and also fencing.

NB: It should be noted that the amount required to rehabilitate is not mainly based on the size of the prospecting but rather the activity and the rehabilitation to be conducted.

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

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

Yes, the amount is available, see the attached Annexure

t) Specific Information required by the competent Authority

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

(1) Impact on the socio-economic conditions of any directly affected person.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix** .

Current land uses inside the prospecting area, such as grazing, may be temporarily impacted through the presence of the fenced areas that drill rigs will operate within. These are however, small areas. These areas will be rehabilitated post drilling activities and the areas will once again become available for grazing. No other issues were noted besides the ones mentioned above

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

There were areas which were identified of concern or sensitivity in terms of heritage, however given the fact that this will be a prospecting right and 120sqm at any given time of drilling will be impacted, there will be a 100m buffer zone given to all houses, houses older than 100m as well as graves which were noted o site. Should any sign or have accidental find over and above what has been noted and seen, then we will engage the relevant authority and stop all work.

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

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

The was none identified as per Section 24(4)(A) and (B) of the Act.

PART B

4. ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

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

These details have been provided in Part A and a CV attached on this BAR as an appendix.

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

These aspects have been well documented and outlined in Section 1 a/h of this report.

c. Composite Map

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

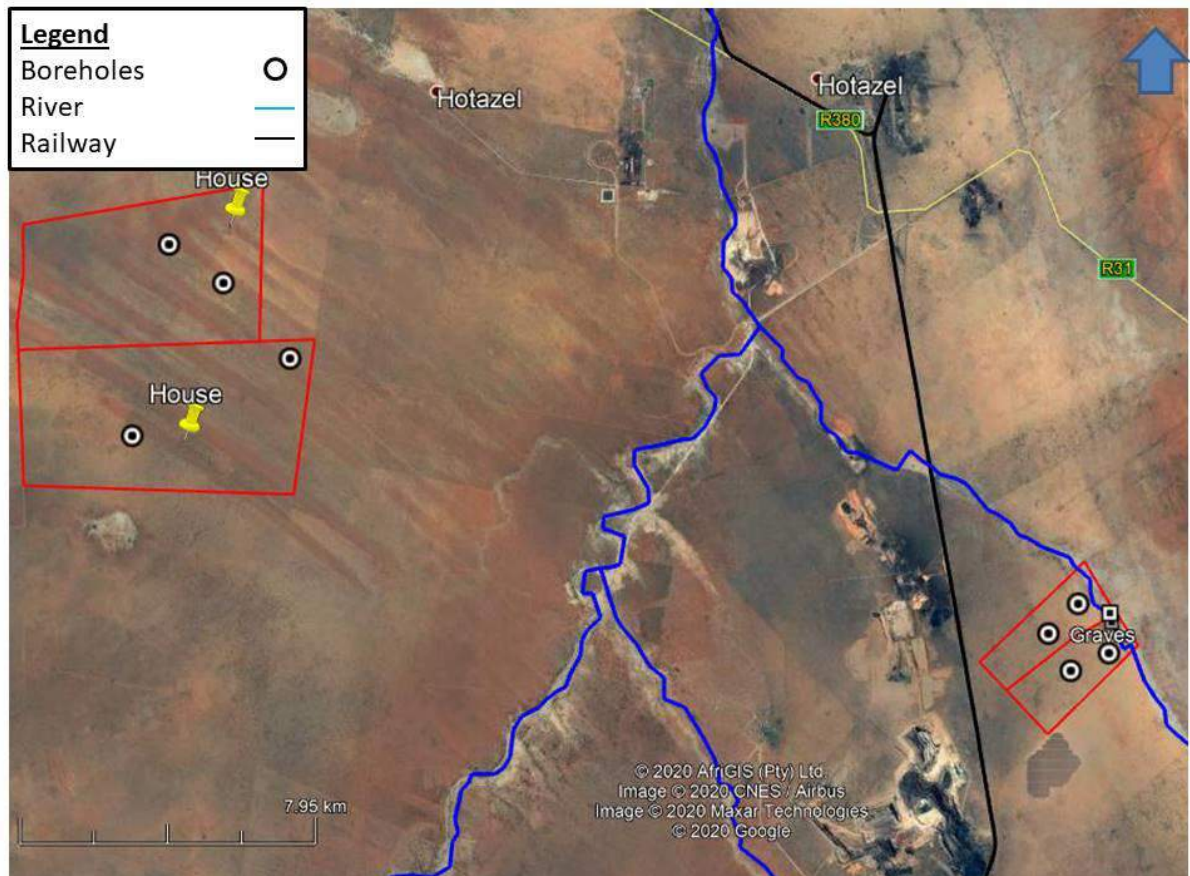


Figure 29: Composite Site Map

d. Description of Impact management objectives including management statements

i) Determination of closure objectives. (ensure that the closure objectives are informed by the type of environment described)

No.	Activity	Closure Objectives	Mitigation Method
1	Desktop Studies	None as there is no impact on environment	None
2	Geophysics	None as there is no impact on environment	None
3	Mapping	None as there is no impact on environment	None
4	Site Establishment	The closure objectives will be to leave the site the way it was found before prospecting took place or even better	Spray water to reduce dust. Avoid clearance where it is not necessary Designate an area for domestic rubble
5	Drilling	The closure objectives will be to leave the site the way it was found before prospecting took place or even better by capping all boreholes. Capping of boreholes with concrete as per the standard norm or leave it open so that the land owner can use the water for their farming	Remove all drillholes spoils Rehabilitate the area of sumps Put a plastic under the drill rig to avoid diesel and oil spillage
6	Closure and Rehabilitation	The closure objectives will be to leave the site the way it was found before prospecting took place or even better	Remove all waste and close all openings

ii) **Volumes and rate of water use required for the operation.**

We anticipate that the amount of water to be used will be determined by the number of boreholes to be drilled, the wind speed as well as season.

We anticipate that between 6 and 12 boreholes will be drilled using Diamond/core drilling with a sump dug next to each borehole. The sump will be about a meter deep lined by a plastic to reduce loss of water due to seepage. The water will be recycled on each hole and the process is a closed cycle meaning that the water from the borehole will be taking back to the sump.



Figure 30: Lined sump with water being used and recycled

The second factor will be wind speed, when wind is moving in a fast rate, it causes more dust than normal is generated this will mean more spraying of water Speed of cars on site must be minimized and water sprayed on the road In winter vs in summer the amount of dust emitted is lower than that in summer, hence drilling in winter has some form of advantage over drilling in summer.

With all that being said we anticipate an amount of 15000L of water during the whole entire prospecting phase, of which the same amount of water will not be finished in this prospecting.



Figure 31: Type of tank to bring in water during prospecting

iii) Has a water use licence has been applied for?

No water use licence has been applied for as no water extraction, storage or processing will be done.

A water tanker will be brought on site for the sole purpose of supplying water to the project. It will be sourced from a reputable and licenced water supplier

iv) Impacts to be mitigated in their respective phases

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

ACTIVITIES (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	PHASE (of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).	SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m ²)	MITIGATION MEASURES (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Desktop Studies	Phase 1	6 370	N/A	N/A	Before Drilling
Geophysics		6 370	N/A	N/A	Before Drilling
Mapping		6 370	N/A	N/A	Before Drilling
Accommodation & Ablution	Phase 2	200m ²	Spray water to reduce dust, Use chemical toilets, stock pile top soil during excavations, and have a designated area for domestic waste, have a buffer zone for rivers, road, dams and railway line	N/A	Before Drilling

Equipment Storage		500m ²	Spray water to reduce dust, Use chemical toilets, stock pile top soil during excavations, service equipment off site, put plastic containers for leaking hydrocarbons., have a buffer zone for rivers, road, dams and railway line	N/A	Before Drilling
Office & Ablution		300m ²	Spray water to reduce dust, Use chemical toilets, stock pile top soil during excavations, and have a designated area for domestic waste, have a buffer zone for rivers, road, dams and railway line	N/A	Before Drilling
Drilling (The whole area will be drilled but subjected to phase 1 results)		6 370 (112m ² a drilling site)	Spray water to reduce dust, Use chemical toilets, stock pile top soil during excavations, and have a designated area for domestic waste, contain spilling waste, have a buffer zone for rivers, road, dams and railway line	SAMREC/JORC	
Rehabilitation & Closure	Phase 3	6 370	N/A	N/A	After Drilling

e. Impact Management Outcomes

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

ACTIVITY (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation.. 	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Desktop Studies	None	None	Planning/Phase 1	None	None
Geophysics	None	None	Pre operational	None	None
Mapping	None	None	Pre operational	None	None

Accommodation & Ablution establishment	Minimal impact on:-Dust, Noise, Surface Disturbances, Air pollution, environmental degradation,	Environment	Phase 2/Operational	Reduce: Noise, dust, air pollution, land degradation	Reduce and minimise pollution
Equipment Storage establishment	Minimal impact on:-Dust, Noise, Surface Reduce and minimise pollution Disturbances, Air pollution, environmental degradation,	Environment	Phase 2/Operational	Reduce: Noise, dust, air pollution, land degradation, hydrocarbon spillage	Reduce and minimise pollution
Office & Ablution establishment	Minimal impact on:-Dust, Noise, Surface Disturbances, Air pollution,	Environment	Phase 2/Operational	Reduce: Noise, dust, air pollution, land degradation	Reduce and minimise pollution

	environmental degradation,				
Drilling (The whole area will be drilled but subjected to phase 1 results and subjected to 120sqm per drilling site)	Impact on:- Dust, Noise, Surface Disturbances, Air pollution, environmental degradation, ground water pollution (dependant on the water table vs drill hole depth), hydrocarbons spillage	Environment as well as both surface and ground water	Operational	Minimize: Noise, dust, air pollution, land degradation, hydrocarbon spillage, ground water pollution, surface water pollution	Reduce and minimise pollution
Rehabilitation & Closure	None	Environment	Closure		None

f. Impact Management Actions

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

ACTIVITY whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation..	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Desktop Studies	None	None	Planning/Phase 1	N/A
Geophysics	None	None	Pre operational	Aviation Authority
Mapping	None	None	Pre operational	N/A
Accommodation &	Minimal impact on:- Dust, Noise,	Environment	Phase 2/Operational	DWA, DMRE, DEA

Ablution establishment	Surface Disturbances, Air pollution, environmental degradation,			
Equipment Storage establishment	Minimal impact on:- Dust, Noise, Surface Reduce and minimise pollution Disturbances, Air pollution, environmental degradation,	Environment	Phase 2/Operational	DWA, DMRE, DEA
Office & Ablution establishment	Minimal impact on:- Dust, Noise, Surface Disturbances, Air pollution, environmental degradation,	Environment	Phase 2/Operational	DWA, DMRE, DEA
Drilling (The whole area)	Impact on:-Dust,	Environment as well as both surface and ground	Operational	SAMREC/JORC, DWA,

will be drilled but subjected to phase 1 results and subjected to 120sqm per drilling site)	Noise, Surface Disturbances, Air pollution, environmental degradation, ground water pollution (dependant on the water table vs drill hole depth), hydrocarbons spillage	water		DMRE, DEA
Rehabilitation & Closure	None	Environment	Closure	DWA, DMRE, DEA

i) Financial Provision

(1) Determination of the amount of Financial Provision.

- a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The closure objective of this project by the EAP would be to prospect the area with little to no degradation of both the environment and socio-economic of the land owner as well as the I&AP. Where degradation or pollution is encountered, mitigation as per this BAR must be implemented and stringent measures put in place. Areas which have been affected must be rehabilitated and all things brought to site for prospecting be removed and the land left the way it was before prospecting.

CALCULATION OF THE QUANTUM (REAL RATES)							
Applicant: Evaluators:		MBEU NTSU (PTY) LTD		Ref No.: Date:		NC12479PR Nov-20	
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	16.59	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	231.09	1	1	0
2 (B)	Demolition of reinforced concrete buildings and structures	m2	0	340.55	1	1	0
3	Rehabilitation of access roads	m2	50	41.35	1	1	2067.5
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	401.36	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	218.92	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	462.17	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	235221.83	1	1	0
7	Sealing of shaft adits and inclines	m3	0	124.06	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	161517.37	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	201118.98	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	584284.21	1	1	0
9	Rehabilitation of subsided areas	ha	0	135246.47	1	1	0
10	General surface rehabilitation	ha	0.025	127949	1	1	3198.725
11	River diversions	ha	0	127949	1	1	0
12	Fencing	m	120	145.95	1	1	17514
13	Water management	ha	0	48649.81	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0.025	17027.43	1	1	425.68575
15 (A)	Specialist study	Sum	0	0	1	1	0
15 (B)	Specialist study	Sum	0	0	1	1	0
Sub Total 1							23205.91075
1	Preliminary and General		2784.70929		weighting factor 2 1		2784.70929
2	Contingencies			2320.591075			2320.591075
Subtotal 2							28311.21
VAT (15%)							3963.57
Grand Total							32275

Figure 32: Quantum Calculation

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

The closure objectives were conveyed to the I&APs during the notification of the project through the draft BAR and invitation to the meeting. Unfortunately no comments in this

regard has been received to date because no public participation meeting has taken place.

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

CALCULATION OF THE QUANTUM (REAL RATES)

Applicant:
Evaluators:

MBEU NTSU (PTY) LTD

Ref No.:
Date:

NC12479PR
Nov-20

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	16.59	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	231.09	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	340.55	1	1	0
3	Rehabilitation of access roads	m2	50	41.35	1	1	2067.5
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	401.36	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	218.92	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	462.17	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	235221.83	1	1	0
7	Sealing of shafts adits and inclines	m3	0	124.06	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	161517.37	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	201116.96	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	584284.21	1	1	0
9	Rehabilitation of subsided areas	ha	0	135246.47	1	1	0
10	General surface rehabilitation	ha	0.025	127949	1	1	3198.725
11	River diversions	ha	0	127949	1	1	0
12	Fencing	m	120	145.95	1	1	17514
13	Water management	ha	0	48649.81	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0.025	17027.43	1	1	425.68575
15 (A)	Specialist study	Sum	0	0	1	1	0
15 (B)	Specialist study	Sum	0	0	1	1	0
Sub Total 1							23205.91075

1	Preliminary and General	2784.70929	weighting factor 2 1	2784.70929
2	Contingencies	2320.591075		2320.591075
Subtotal 2				28311.21
VAT (15%)				3963.57
Grand Total				32275

Figure 33: Quantum Calculation

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

Closure will include some form of rehabilitation. Rehabilitation can be divided into two different streams, namely concurrent rehabilitation and final rehabilitation.

Concurrent rehabilitation must be carried out along with the operations, and will decrease the final liability that the operation will carry at the time of closure. This concurrent rehabilitation will be carried out within the context of the EMPr. Final rehabilitation will be carried out once the operation goes into its closure phase. This final rehabilitation will be carried out within the context of the closure plan. The closure and rehabilitation plan should be modified and adapted as the project continues and more knowledge is generated about the environment and the impacts project

The whole idea is to leave the area which will be disturbed by rehabilitation well rehabilitated or as if no prospecting has ever taken place.

- e) **Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.**

CALCULATION OF THE QUANTUM (REAL RATES)

Applicant:
Evaluators:

MBEU NTSU (PTY) LTD

Ref No.:
Date:

NC12479PR
Nov-20

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
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4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	401.36	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	218.92	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	462.17	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	235221.83	1	1	0
7	Sealing of shafts adits and inclines	m3	0	124.06	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	161517.37	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	201116.96	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	584284.21	1	1	0
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11	River diversions	ha	0	127949	1	1	0
12	Fencing	m	120	145.95	1	1	17514
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14	2 to 3 years of maintenance and aftercare	ha	0.025	17027.43	1	1	425.68575
15 (A)	Specialist study	Sum	0	0	1	1	0
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Sub Total 1							23205.91075

1	Preliminary and General	2784.70929	weighting factor 2 1	2784.70929
2	Contingencies	2320.591075		2320.591075
Subtotal 2				28311.21
VAT (15%)				3963.57
Grand Total				32275

f) **Confirm that the financial provision will be provided as determined.**

Yes, this will be provided as per NEMA and MPRDA. Please see the letter attached.

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

- a) Monitoring of Impact Management Actions
- b) Monitoring and reporting frequency
- c) Responsible persons
- d) Time period for implementing impact management actions
- e) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Desktop Studies	N/A	N/A	N/A	N/A
Geophysics	N/A	N/A	N/A	N/A
Mapping	N/A	N/A	N/A	N/A
Site Establishment & Drilling	Visual impact	All areas exposed must be monitored for erosion	Project Manager	Weekly and after heavy winds and rain
	Dust Generated	All areas exposed must be monitored for erosion	Project Manager	Weekly and after heavy winds and rain
	Noise	All areas where machinery	Operators and Project	Daily

		will be operating	Manager	
	Water & Environmental Pollution	All areas of operations	Operators and Project Manager	Daily
Post Closure and Rehabilitation	Rehabilitated areas	All rehabilitated areas	Environmentalist	Weekly, monthly as well as after heavy rain fall

g) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

The reports will be submitted annually by an ECO together with the prospecting progress report as per regulation.

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, Mbeu Ntsu (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.

h) Environmental Awareness Plan

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

All employees will undergo an induction course when they are employed at the prospecting area which will inform them of the environmental issues / risks and requirements prior to work commencing. An annual refresher will be done thereafter.

The following aspects of environmental training should be included within the induction course:

- Sustainability
- Environmental goals and manner of achieving these
- Rehabilitation
- Waste management / minimisation (including recycling)
- Saving water
- Dealing with soil contamination and spillages
- Solutions to environmental risks

The Site manager shall ensure that adequate environmental training takes place. All employees shall be given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in a language understandable by all employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities
- The environmental benefits of improved personal performance;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities;
- The importance of not littering;
- The need to use water sparingly;
- Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible;
- Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered;
- Details regarding flora of special concern, including protected/endangered plant and species, and the procedures to be followed should these be encountered during the construction phase.

- In the case of permanent staff, the Site manager shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Site manager shall inform how he intends concluding his environmental training obligations.

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes should contain the following information:

- The names, positions and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarised content of each training course. The ECO shall monitor the records as listed above.

Frequency	Time Allocation	Objective
Induction (all staff and workers)	1-hour training on environmental awareness training as part of site induction	<ul style="list-style-type: none">• Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety and community aspects.• Establish a basic knowledge of the environmental legal framework and consequences of non-compliance.• Clarify the content and required actions for the implementation of the Environmental Management Plan.• Confirm the spatial extent of areas regarded as sensitive and clarify restrictions.• Provide a detailed understanding of the definition, the method for identification and

		required response to emergency incidents.
Monthly Awareness Talks (all staff and workers)	30-minute awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	Daily task-based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily tool box talks.

i) Emergency Preparedness and Response

The procedure will be developed to specifically include risk identification, preparedness, response measures and reporting. The procedure will specifically include spill and fire risk, preparedness and response measures. The appropriate emergency control centers (fire department, hospitals) will be identified and the contact numbers obtained and made available on site. The procedure must be developed in consultation with all potentially affected landowners.

In the event that risks are identified which may affected adjacent landowners (or other persons), the procedure will include the appropriate communication strategy to inform such persons and provide response measures to minimize the impact.

j) Incident Reporting Procedure

(1) Incident reporting will be undertaken in accordance with an established incident reporting procedure to (including but not limited to):

- Provide details of the responsible person including any person who:
 - (i) is responsible for the incident;
 - (ii) owns any hazardous substance involved in the incident; or
 - (iii) was in control when the incident occurred;
- Provide details of the incident (time, date, location);
- The details of the cause of the incident;
- Identify the aspects of the environment impacted;
- The details corrective action taken, and
- The identification of any potential residual or secondary risks that must be monitored and corrected or managed.

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

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. This should be in conjunction with the implementation of the EMPr

k) Specific information required by the Competent Authority

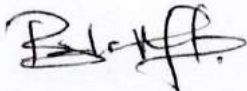
(Among others, confirm that the financial provision will be reviewed annually).

In terms of Section 41, Regulations 53 and 54 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), Mbeu Ntsu (Pty) Ltd is required to make financial provision for the interim and final rehabilitation activities on the site. This provision will be reviewed annually for adequacy and amended to compensate for new activities and/or inflation. During the annual review, confirmation will be provided that this amount can be provided for from operating expenditure.

2) UNDERTAKING

The EAP herewith confirms

- a. the correctness of the information provided in the reports ☒
- b. the inclusion of comments and inputs from stakeholders and I&APs; ☒
- c. the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
- d. that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein. ☒



Signature of the environmental assessment practitioner:

MNB Holdings (Pty) Ltd on behalf of Mbeu Ntsu (Pty) Ltd

Name of company:

28/04/2021

Date:

-END-