



REVISED BASIC ASSESSMENT REPORT

**PROSPECTING RIGHT APPLICATION FOR COAL, PSEUDOCOAL & TORBANITE, OIL SHALE
ORE ON PORTION 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 OF 15832 FU,
PORTION 9, 10, 11, and 12 OF RESERVE NO 12 15832 HU SITUATED WITHIN THE
MAGISTERIAL DISTRICT OF ZULULAND, KWAZULU-NATAL PROVINCE (DMR REFERENCE
NUMBER KZN 30/5/1/1/2/11242 PR)**



MAY 2023



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

REVISED

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

NAME OF APPLICANT: GATLIMIP TRADING AND PROJECTS (PTY) LTD
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POSTAL ADDRESS: 146 Kloof Road, Bantry Bay, Cape Town

FILE REFERENCE NUMBER SAMRAD: KZN/30/5/1/1/2/11242 PR

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 environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (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.

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 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;
 - (ba) may cause irreplaceable loss of resources; and
 - (ca) 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.

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ACRONYMS AND DESCRIPTIONS

ACRONYMS	DESCRIPTION
AIPs	Alien Invasive Plants
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
FBAR	Final Basic Assessment Report
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act
PHRAG	The Provincial Heritage Resources Authority Gauteng
SAHRA	South African Heritage Resources Association
WULA	Water Use License Application
BAR	Basic Assessment Report

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. INTRODUCTION

The Applicant, Gatlimip Trading and Projects (Pty) Ltd, has appointed Thevha Sustainable Services (Pty) Ltd to apply for prospecting right on farm Portion 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 of 15832 FU, Portion 9, 10, 11, 12 of RESERVE NO 12 15832 HU situated within the Magisterial District of Zululand, KwaZulu-Natal Province. The proposed prospecting site is in Ward 13 of the Nongoma Local Municipality under the jurisdiction of the Zululand District Municipality (**Figure 1**).

The geographic coordinates of the prospecting area can be noted on Table 1 below.

Table 1: Geographic Coordinates of the prospecting area

PROSPECTING BOUNDARY CO-ORDINATES		
ID	LATITUDE	LONGITUDE
A	-27.994143	31.595528
B	-27.945375	31.666889
C	-27.979183	31.672878
D	-27.978074	31.825069
E	-28.109326	31.787192
F	-28.109980	31.734142
G	-28.037905	31.659587
H	-28.043242	31.602829

However due to the location of the coal seam, proximity of the residential areas, traditional agricultural activities, graves, the site has been further reduced and thus reducing the development footprint. Therefore, the reduced prospecting area only covers Portion 12 of Reserve No 12 15832 HU.

The original 20 000 ha site is multiple local rural areas. The proposed activity includes prospecting without bulk sampling for coal.

The proposed prospecting activities have been separated into four (4) phases as detailed below;

- **Phase 1:** Desktop Studies- to establish the status of the area using historical data
- **Phase 2:** Ground geophysical surveys will be conducted over selected target areas on a 200m x 200m grid using a gravimeter. Ground surveys are used to outline the hosting lithology. Detailed reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.
- **Phase 3:** Geochemical surveys- Geochemical surveys will be used in this region to determine the position of ore bodies. This entails the soil sampling on a line spacing of 200m.
- **Phase 4:** Drilling is done in phases, as outlined elsewhere, over anomalous target areas, using reconnaissance lines or a grid of 100m or 400m x 400m holes will be approximately >50m deep depending on the local depth. The drill holes will be sent to the laboratory for assay. The drilling contractors in supervision of the field geologist will initially drill 5 boreholes for preliminary drilling.

1.1 Location of the overall activity

FARM NAME:	Portion 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 of 15832 FU, Portion 9, 10, 11, and 12 of RESERVE NO 12 15832 HU
APPLICATION AREA (HA)	Approximately 20938 hectares
MAGISTERIAL DISTRICT:	Zululand, Nongoma
DISTANCE A N D DIRECTION FROM NEAREST TOWN	The project is located approximately 20 km West of Nongoma and 30 km north of the town of Ulundi.

21 DIGIT GENERAL CODE FOR EACH FARM PORTION	SURVEYOR NOFU00000001583200139, NOFU00000001583200140 NOFU00000001583200149, NOFU00000001583200150 NOFU00000001583200151, NOFU00000001583200152 NOFU00000001583200155, NOFU00000001583200156 NOFU00000001583200157, NOFU00000001583200158 NOFU00000001583200159, NOFU00000001583200160 NOHU00000001583200009, NOHU00000001583200010 NOHU00000001583200011, NOHU00000001583200012
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1.2 Locality map

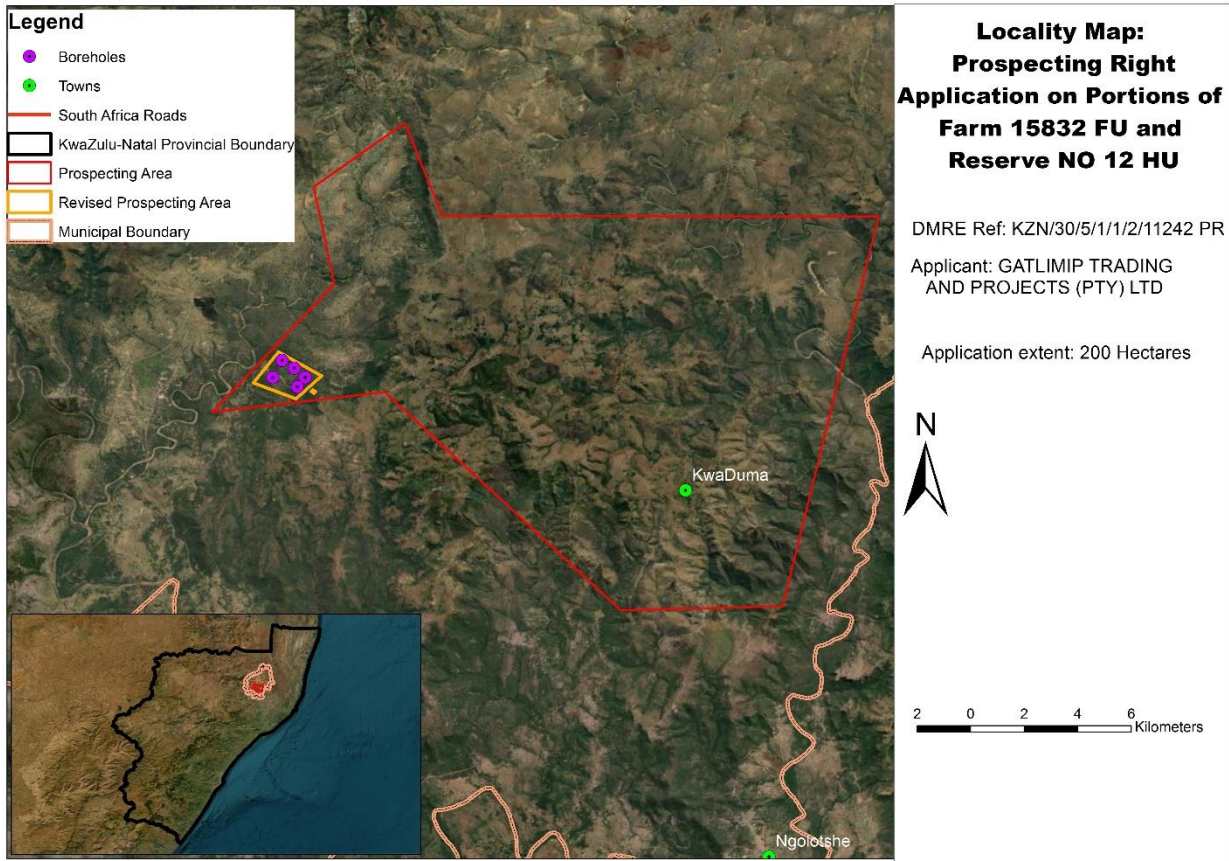



Figure 1: Locality Map

1.3 Details of the EAP

Name of The Practitioner:	 Thevha Sustainable Services (Pty) Ltd Vanessa Nkosi
Cell No:	076 376 2045
E-mail address:	info@thevhastainableservices.co.za

1.4 Expertise of the EAP

The qualifications of the EAP (with evidence).

BSc (Geology)	University of Pretoria
The CV of the EAP has been included on Appendix A for further evaluation.	

2. 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.

The Applicant, Gatlimip Trading and Projects (Pty) Ltd, has appointed Thevha Sustainable Services (Pty) Ltd to apply for prospecting right on farm Portion 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 of 15832 FU, Portion 9, 10, 11, and 12 of RESERVE NO 12 15832 HU situated within the Magisterial District of Zululand, KwaZulu-Natal Province. The proposed prospecting site is in Ward 13 of the Nongoma Local Municipality under the jurisdiction of the Zululand District Municipality.

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- **Phase 4:** Drilling is done in phases, as outlined elsewhere, over anomalous target areas, using reconnaissance lines or a grid of 100m or 400m x 400m holes will be approximately >50m deep depending on the local depth. The drill holes will be sent to the laboratory for assay. The drilling contractors in supervision of the field geologist will initially drill 5 boreholes for preliminary drilling.

The Prospecting Work Programme (PWP) has been attached as **Appendix E** of this report.

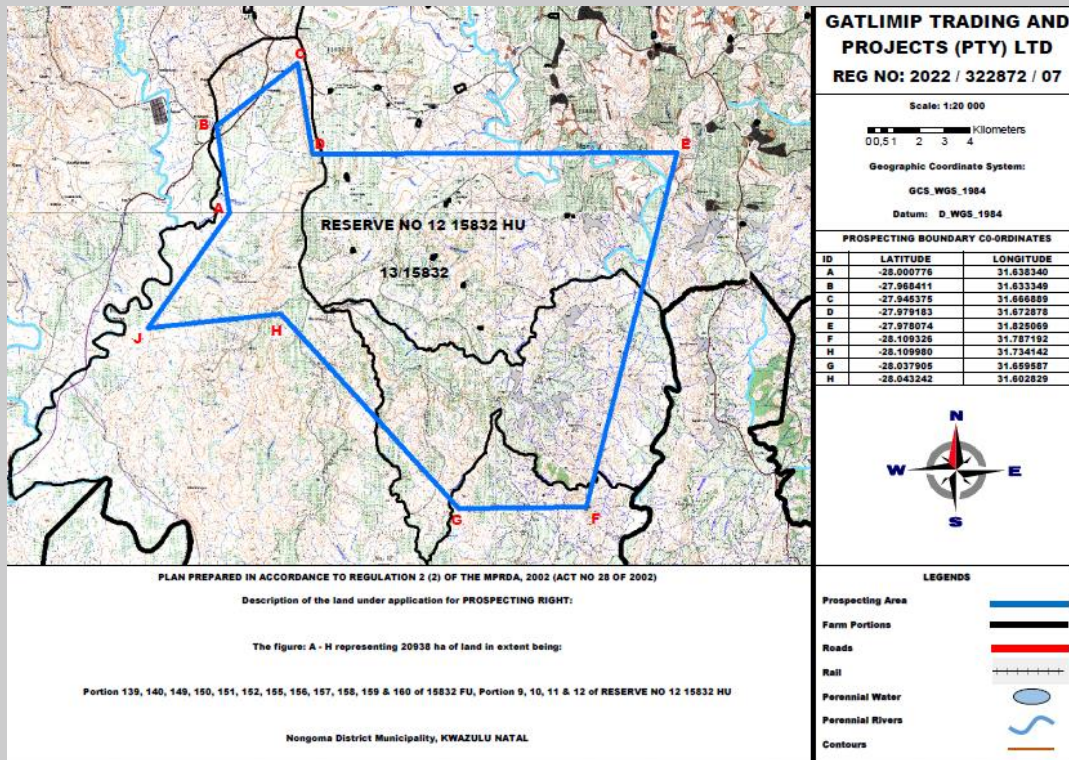


Figure 2: Application Area

Table 2 below indicates the location of the proposed five (5) drill holes (DH) and the site camp inclusive of site camp infrastructure i.e., storage area, ablution facilities, and a site office.

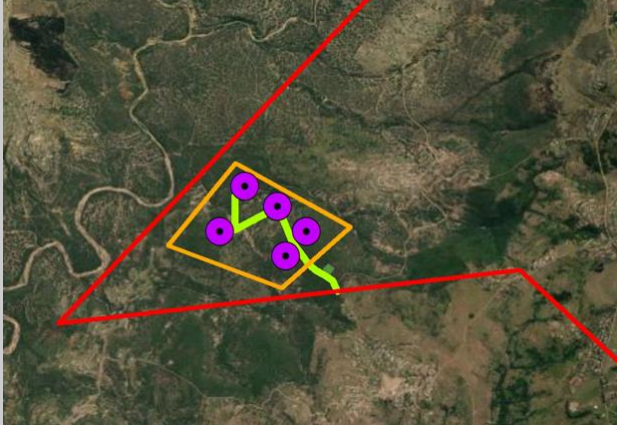


Figure 3). Two (2) temporary access roads been indicated within the reduced prospecting area. It is important to note that the reduced development footprint only covers Portion 12 of Reserve No 12 15832 HU.

Table 2: Geographic coordinates of the reduced prospecting area

Area	Latitude	Longitude
Access Road 1 Start point	28° 2'16.45"S	31°38'4.63"E
Access Road 2 End point	28° 2'4.63"S	31°37'51.54"E
DH1	28° 1'55.81"S	31°37'46.90"E
DH2	28° 2'6.40"S	31°37'39.00"E
DH3	28° 1'42.37"S	31°37'31.30"E
DH4	28° 1'43.05"S	31°37'19.53"E
DH5	28° 1'58.44"S	31°37'19.60"E

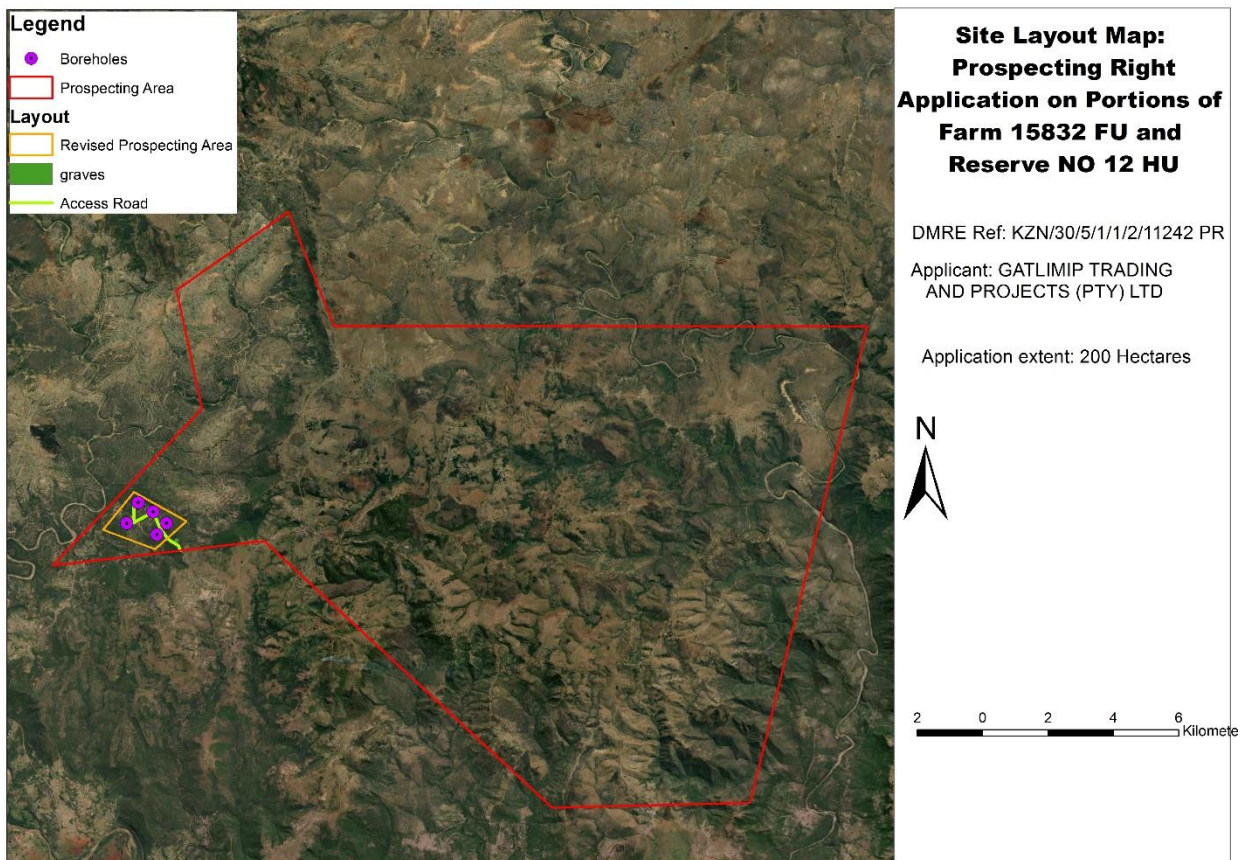




Figure 3: Reduced prospecting right area

2.1 Listed and specified activities

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	APPLICABLE LISTING NOTICE	WASTE MANAGEMENT AUTHORISATION
Average Prospecting Right Reduced Area	202 ha	Government Notice, No. R. 327, April 2017 (LN1)	X
Drilling	5 Holes 2200 meters	Government Notice, No. R. 327, April 2017 (LN1)	X
Site camp	80 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Ablution facilities	10 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Sample storage	40 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Equipment storage	50 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Temporal Site offices	40 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Access roads	100 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
TOTAL APPROXIMATE AREA	202 HA		

2.2 Description of the activities 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 proposed prospecting activities have been separated into invasive activities and non-invasive activities. The invasive activities are noted as the activities that poses an impact on the environment. In addition, a pre-feasibility study has been included.

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

1. Desktop study

A geologist will conduct research about the area of interest. Information will be gathered from other earth-sciences and geological institutions and the council for geosciences. No physical visit to the study area will be done during this phase. The surveyor moves through the identified survey area on foot, using these instruments to gather data from the ground surface. The individual survey areas vary between 500 x 500 m to 2 x 2 km in extent depending on the inferred size of the target area. Magnetic survey lines are spaced at a maximum of 50 m apart, and readings will be taken at a minimum of 5 m intervals along the lines. Electromagnetic and gravity survey lines are spaced at a maximum of 100 m apart with readings taken at a maximum of 50 m along the lines. This method of data collection is non-invasive and does not require clearance or disturbance of the vegetation. Therefore, the only potential impact of this data collection process is inconvenience to the landowner, who would

need to grant access to the survey site. After data collection has been completed, data processing and visualization is carried out to allow the interpretation of the survey.

2. Geological field mapping

This will be achieved by a geologist walking the farm mapping the outcrops. This will result into the production of geological maps showing the types of lithologies found in the area. The size of core drilled will be determined by such factors as cost, proposed core sampling, the degree of logging required and proposed geotechnical investigations. Sizes commonly used are 63.5 mm or 47.6 mm diameter core or variations on these. The orientation and depth of core holes will vary depending on the drilling objective. In the case of delineation drilling, angled core holes will be drilled to establish accurate kimberlite / country rock boundaries at depth (in other words, where the edge of the kimberlite is at depth). Vertical holes will be drilled for geological modelling and / or sampling of the core.

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

3. Drilling

The drilling contractors in supervision of the field geologist will initially drill 5 boreholes for preliminary drilling; this phase will last for three months.

DESCRIPTION OF PRE-/FEASIBILITY STUDIES

4. Geological Modeling

A geologist will create a geological model that will delineate the orientation and the extent of the ore body.

SERVICES DESCRIPTION

1. Water Supply

Process water supply for the operation will be sourced from water service providers and will be carted onto the site in a tanker. A 2000-liter water cart will be adequate for the size of this operation. The water will be used for dust suppression of access roads. Dust suppression will be conducted as and when necessary. No water will be abstracted in terms of section 21(a) of the National Water Act, 1998 (Act no. 36 of 1998).

2. Potable Water Supply

Potable water required for the proposed prospecting operation is approximately 40 litres per day (ℓ/day). The water will be used for drinking purposes and will be sourced from local water vendors within the town of Nongoma and supplied in cooled water dispensers.

3. Ablution Facility

Ablution facility at the drill site will involve chemical mobile toilets. Approximately 2 chemical mobile toilets will be required on site. All raw sewage from these toilets will be disposed of into the nearest wastewater treatment works within the Nongoma Local Municipality. The service provider will be required to provide proof of disposal of sewer.

SITE INFRASTRUCTURE

Temporary Office Area/ Camp Site

A temporary office area will be established on site and will include the following:

- Vehicles and equipment area (drill and pipe truck)
- Ablution facility (chemical mobile toilet)
- Mobile office (mobile container)

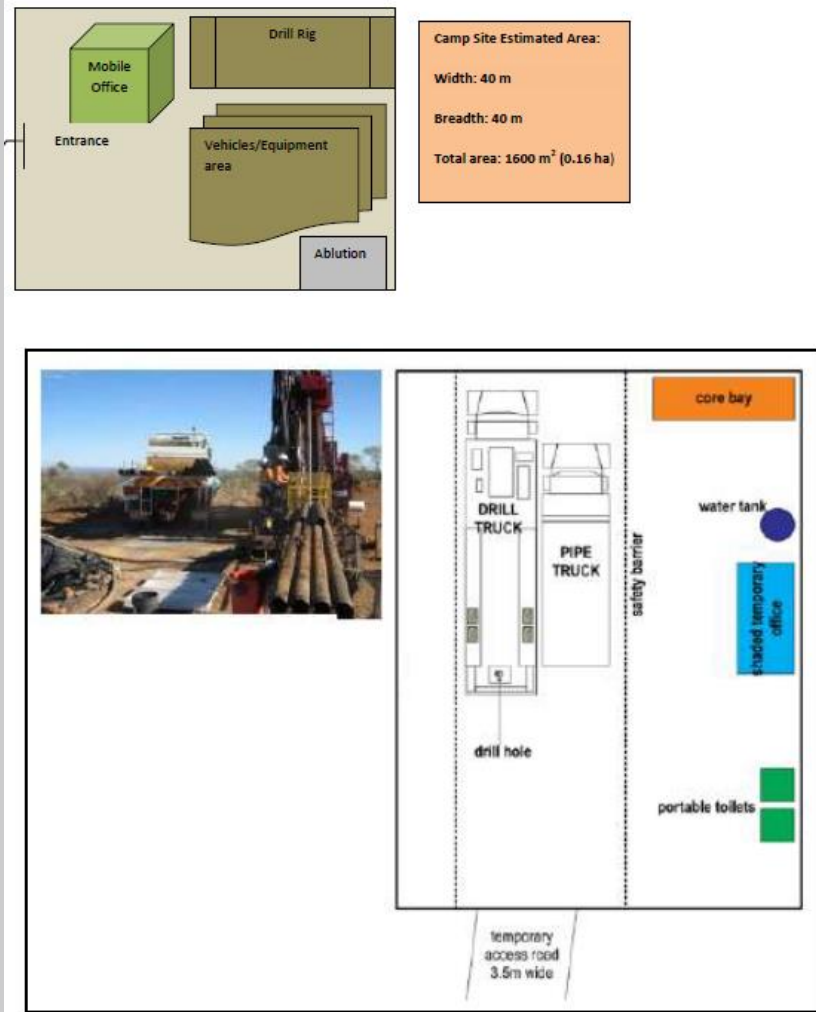


Figure 4: Typical example of a temporary site office for prospecting activities

Accommodation

No accommodation for workers will be provided on site. Accommodation will be sourced within the Matheni Traditional Council, KwaKhangela Qongqo area and Nongoma town as agreed on the public meeting. All workers will be transported on site daily. It is anticipated and agreed during the public participation process that most of the workers will be sourced from the local area.

Blasting

No blasting will take place on site. Planned invasive activities are limited to core drilling and site camping.

List of equipment to be utilised

The table below indicates the list of equipment to be utilised;

Equipment	Availability Indication
Water storage tank	Not available, to be procured by the drilling contractor
Drill truck and rig	
Temporary toilets	
Temporary office structure/storage area	
Drinking water container	

3. POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
Constitution of the Republic of South Africa (Bill of Rights), 1996	Chapter 2 section 24	The prospecting activities shall be conducted in such a manner that significant environmental impacts are avoided, where significant impacts cannot all together be avoided, be minimised and mitigated in order to protect the environmental right of South Africans.
Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)	Section 16, 17, and 39 of MPRDA This entire report is prepared as part of the Prospecting Right Application under the MPRDA	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for.
National Environmental Management Act, 1998 (Act 107 of 1998)	Listed Activity 20 of Regulation R327 (December 2014) as amended in April 2017. This entire report is prepared as part of the Application for Environmental Authorizations under the NEMA.	In terms of the National Environmental Management Act an Application for Environmental Authorization subject to a Basic Assessment Process has been applied for.
National Water Act, 1998 (Act 36 of 1998) (NWA)	Not applicable Due to the nature of the proposed prospecting activities no Section 21 water uses will be triggered, therefore there is no requirement to apply for Water Use authorisation in terms of the NWA.	In terms of the National Water Act, no Water Use License has been applied for. It is anticipated that prior to the commencement of the prospecting activities, the applicant will formally engage the Department of Water and Sanitation accordingly.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004): National Dust Control Regulations (GN 827)	Not applicable	Appropriate dust extractions/ suppression equipment will be a condition imposed on the drill contractor for their drill rigs.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA) as amended	Waste management on site	The generation of potential waste will be minimised through ensuring employees of the drilling contractor are subjected to the appropriate environmental awareness campaign before commencement of drilling. All waste generated during the drilling activities will be disposed of in a responsible legal manner. Proof of legal disposal will be maintained on site.
National Heritage Resources Act, 1999 (Act 25 of 1999)	At least one (1) graveyard is located at least 500m away from site..	At least one (1) graveyard is located at least 500m away from site.

4. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.

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

The mining industry is of great importance to the South African economy. South Africa has one of the world's largest coal reserves. Eskom currently relies on coal fired power stations to produce approximately 95% of the electricity generated in South Africa and until such time as alternative energy generation options can be implemented on a sufficiently large scale, Eskom is totally dependent on coal mining. The market for coal products is increasingly defined by generally accepted local and international standard quality products for which physical and financial markets exist for trading these standard coal products.

The definition of prospecting in terms of the MPRDA states: "intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water..." Prospecting is the physical search for minerals, fossils, precious metals or mineral specimens, which allows a company to survey or investigate an area of land for the purpose of identifying an actual or probable mineral deposit, before investments are made into the mining activities.

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

According to the Nongoma Local Municipality IDP, 2020/2021, one of the key challenges facing the municipality includes high employment rate characterised by youth unemployment and poor land use management. The proposed development aims to address this challenge through the induction of economic growth to the municipality through temporary employment during the drilling phase of the proposed activity with a possible long-term employment during the mining phase of the development.

The contribution of mining within the municipal economic industry has motivated the applicant to promote local development through the introduction of additional mines within the municipality.

Assessment of the geological information available has determined that the area in question may have coal reserves. In order to ascertain the above and determine the nature, location and extent of the coal reserves within the proposed prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the coal.

The information that will be obtained from the prospecting to be done will be necessary to determine, should coal be found, how and where the coal will be extracted and how much economically viable coal reserves are available within the proposed prospecting area.

Should prospecting prove successful and a resource quantified, it would indicate a potential viable economic activity in the form of mining that is likely to contribute greatly to the socio-economic status quo in the form of increased income, employment and other benefits that would cascade through the local, regional and national levels.

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

The identification of alternatives is a key aspect of the success of the Basic Assessment process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider in this application. There are, however, some constraints that have to be considered when identifying alternatives for a project depending on the scope. Such constraints include financial, social and environment related constraints. Alternatives can typically be identified according to:

- Activity Alternatives
- Location Alternatives
- Design or Layout Alternatives
- Technology Alternatives
- Operational Alternatives
- No-Action Alternative (No-Go)

For any alternative to be considered feasible, such an alternative must meet the need and purposes of the development proposal without presenting significantly high associated impacts. Alternatives are typically distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and/or Basic Assessment process. Incremental alternatives typically arise during the Basic Assessment process and are usually suggested as a means of addressing/mitigating identified impacts (drilling and trenching in low sensitivity areas). These alternatives are closely linked to the identification of mitigation measures are therefore not specifically identified as distinct alternatives.

For the purpose of this project the need and justification for alternatives was specifically guided by the relatively low sensitivity of the receiving socio-economic and biophysical environment.

Motivation for the overall preferred site, activities, and technology alternative

The motivation towards the selection of the preferred was based on the coal seams, residential areas, schools, clinic, Royal Palace, agricultural activities as well the environmental sensitivity of the original prospecting right area. The reduction approach was utilised which reduced the site by 98%.

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

6.1 Details of the development footprint alternatives considered

Due to the location of the coal seam, the site has been further reduced and thus reducing the development footprint. Therefore, the reduced prospecting area only covers Portion 12 of Reserve No 12 15832 HU. The table below indicates the location of the proposed drill holes (DH). At one (1) temporary small scale access road is planned for the proposed activity in between the drill holes. It is important to note that the reduced development footprint only covers Portion 12 of Reserve No 12 15832 HU.

Area	Latitude	Longitude
Access Road 1 Start point	28° 2'16.45"S	31°38'4.63"E
Access Road 2 End point	28° 2'4.63"S	31°37'51.54"E
DH1	28° 1'55.81"S	31°37'46.90"E
DH2	28° 2'6.40"S	31°37'39.00"E
DH3	28° 1'42.37"S	31°37'31.30"E
DH4	28° 1'43.05"S	31°37'19.53"E
DH5	28° 1'58.44"S	31°37'19.60"E

6.2 The property on which or location where it is proposed to undertake the activity

The majority of the drill holes are located within Portion 12 of Reserve No 12 15832 HU. The Figure below indicates the proposed site layout plan.

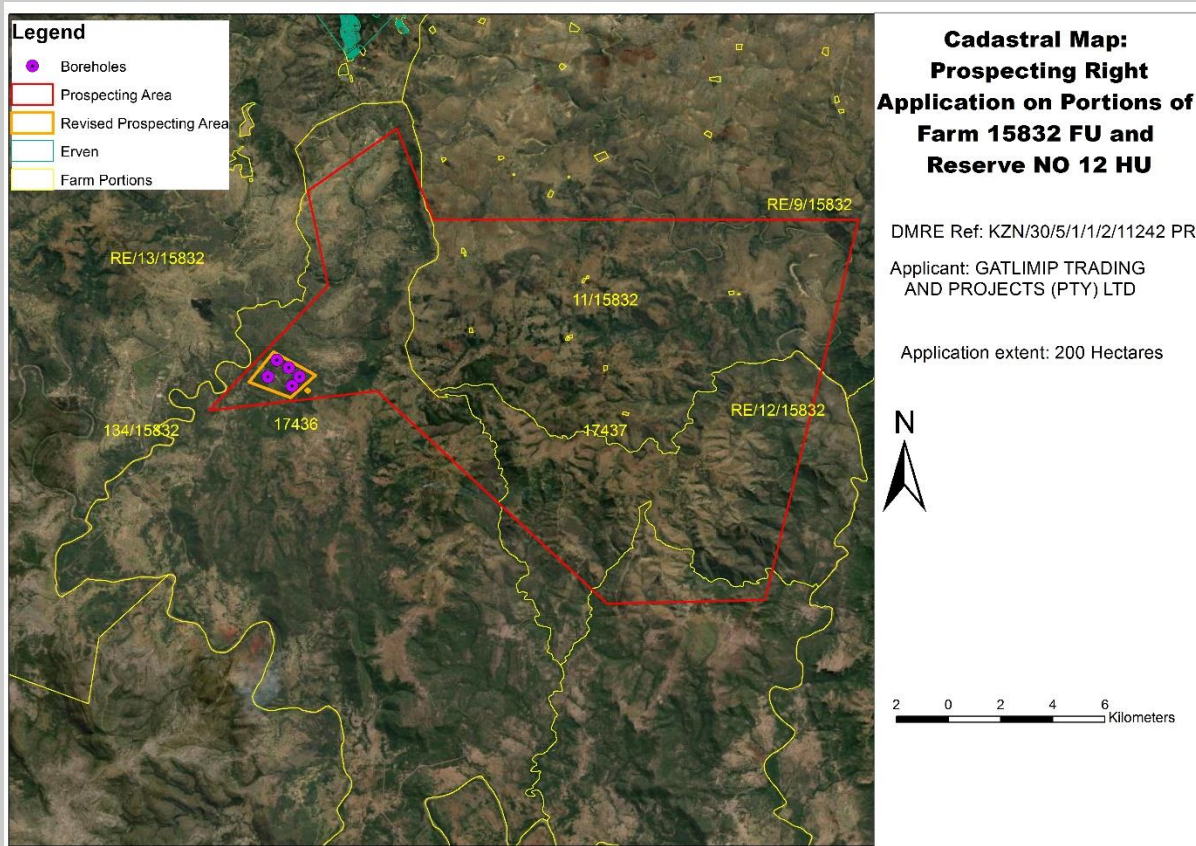


Figure 5: Cadastral Map

6.3 The type of activity to be undertaken

In terms of the technologies proposed, these have been chosen based on the long-term success of the company in terms of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore, no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

6.4 The option of not implementing the activity

Should economical reserves be present and Gatlimip (“the applicant”) does not have the opportunity to prospect, the opportunity to utilize these reserves will be lost. Furthermore, prospecting activities are essential to investigate and confirm the existence/presence of coal and also required to generate a SAMREC compliant mineral resources statement or competent persons report (CPR). Furthermore, investment in the mining industry will not transpire without prospecting activities and should the Prospecting Right application be denied, valuable economic and socio-economic opportunities may be lost.

7. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

7.1 Public Participation Methodology

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. The public participation process undertaken was done in accordance to Regulation 39 – 44 of the EIA Regulations, 2014 (amended) summarised below;

- (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of—
 - (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and
- (b) giving written notice, in any of the manners provided for in section 47D of the Act, to—
 - (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;
 - (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;
 - (iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (iv) the municipality which has jurisdiction in the area;
 - (v) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vi) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper;
- (d) conduction of focus or public meetings

Initially the EAP and the applicant presented themselves to the traditional council. The team was then sent to consult with the community prior to obtaining consent from the council. Therefore, a public meeting was conducted on the 8th November 2022. The minutes and attendance register of the public meeting are attached as **Appendix C3**.

Hard copy notification letters compiled in English due to the technical terms associated with the EIA process were distributed during the meeting. The contents of the letter were further explained to the public in IsiZulu to ensure understanding. In addition, the notification letters were distributed to the commenting and competent authorities identified during the public participation process.

In addition, site notices in IsiZulu and English were distributed within the area see attached proof in **Appendix C1**.

7.2 Identification of I&APs

A Final IAP list has been included in this Report as **Appendix C6**. The IAP database was compiled containing the following categories of stakeholders.

- Provincial Authorities
- Local Authorities
- State-owned companies
- Other organisations, clubs, communities, and unions.
- Neighbouring properties

7.3 List of Authorities Identified and Notified

The following authorities have been identified and notified of the proposed Prospecting Right:

- KZN Department of Mineral Resources and Energy
- KZN Department of Transport;
- KZN Department of Economic Development, Tourism and Environmental Affairs
- KZN Corporative Governance and Traditional Affairs
- KZN Department of Water and Sanitation
- KZN Department of Agriculture
- Nongoma Local Municipality
- Zululand District Municipality

7.4 List of Key Stakeholders Identified and Notified

The following key stakeholders have been identified and notified of the proposed Prospecting Right:

- Ezemvelo KZN Wildlife
- South African Heritage Resources Agency/Amafa

7.5 Notification of I&APs

Notification documents were prepared in two dominant languages spoken within the application area, namely: English and IsiZulu. All pre-identified I&APs, including those that requested to be registered as I&APs during the initial public consultation phase of the Basic Assessment process were notified of the proposed Prospecting Right Application via the following methods:

- Notification letters (Hand delivered) See **Appendix C4**
- Site notices at various locations on-site. See **Appendix C1**
- Placement of newspaper adverts in the *Zululand Observer*. See **Appendix C2**

7.6 Description of the Information Provided to the Community, Landowners and I&APs

Notification documents sent to all pre-identified I&APs included the following information:

- Locality map
- List of activities to be authorised.
- Scale and extent of activities to be authorised.
- The duration of the activity.
- The purpose of the proposed project.
- The prospecting methods to be used.
- Details of the affected property
- Details of the MPRDA and NEMA regulations that must be adhered to.
- The minerals being prospected for.
- Date by which comment, concerns and objections must be forwarded through to TSS.
- Contact details of the Environmental Assessment Practitioner (EAP).

7.7 Summary of Issues Raised by I&APs

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

Appendix C7 has been attached for the purpose of providing a detailed response of the comments received on the Draft BAR.

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	DATE COMMENTS RECEIVED	COMMENT RECEIVED	RESPONSE ISSUED
PROVINCIAL AUTHORITY				
KZN Department of Mineral Resources and Energy	X	30 th March 2023	See attached Appendix C7	
KZN Department of Economic Development, Tourism and Environmental Affairs	X	N/A	No comments received to date	N/A
KZN Department of Transport	X	N/A	No comments received to date	N/A
KZN Corporative Governance and Traditional Affairs	X	N/A	No comments received to date	N/A
KZN Department of Water and Sanitation	X	N/A	No comments received to date	N/A
KZN Department of Agriculture	X	N/A	No comments received to date	N/A
LOCAL AUTHORITIES				
Zululand District Municipality	X	N/A	No comments received to date	N/A
Nongoma Local Municipality	X	N/A		
Matheni Traditional Council	X	8 th November	See attached Appendix C3	Not applicable
STATE OWNED COMPANIES				
Ezemvelo KZN Wildlife	x	14 th April 2023	See attached Appendix C7	
OTHER PARTIES				
FARM OWNERS / LOCAL COMMUNITY MEMBERS				
Stakeholder focus meeting conducted, see attached minutes on Appendix C3 .				

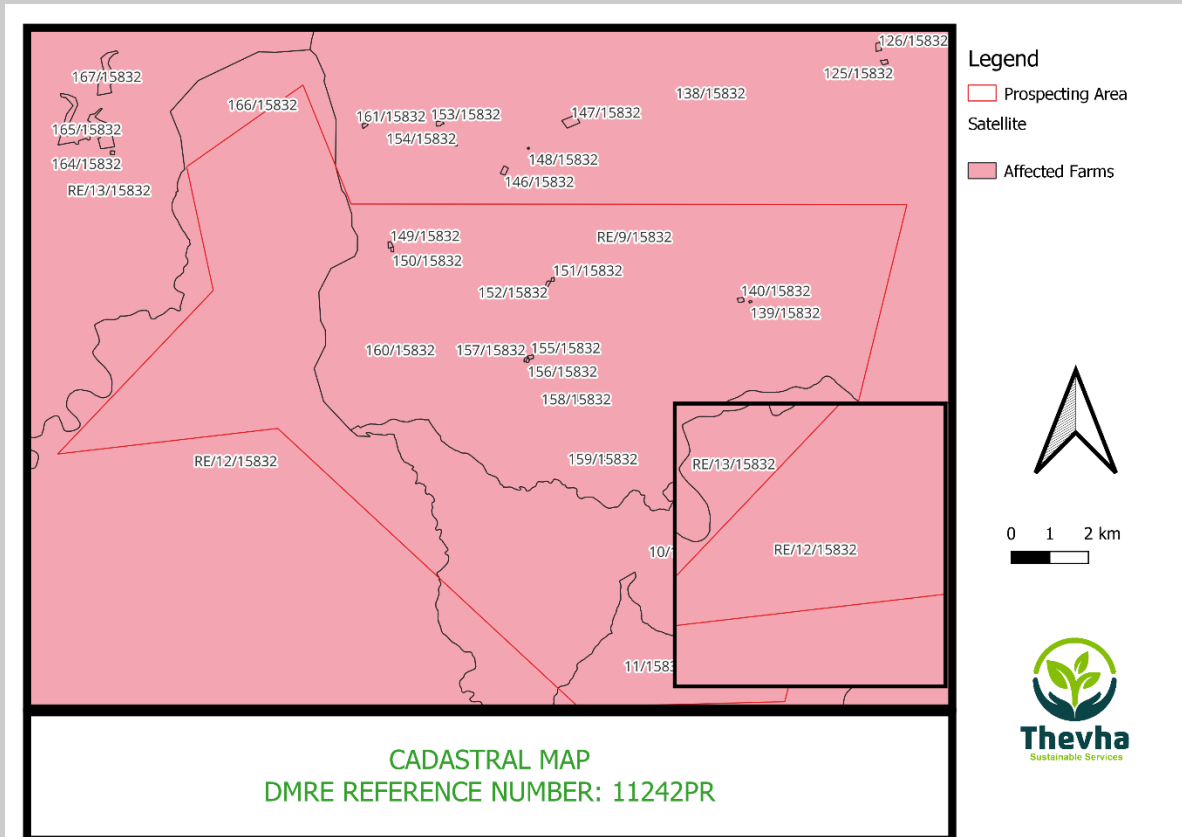
8. ENVIRONMENTAL ATTRIBUTES AND ASSOCIATED ALTERNATIVES

8.1 Baseline Environment

This section describes the baseline receiving environment of the prospecting area. Information in this section is based on desktop studies by the EAP, a site visits conducted during the period of October-November 2022, input from the public through the I&AP questionnaire. As such, the descriptions below of environmental features represent a consolidation of relevant information to the Application Area.

8.1.1 Cadastral

The application area is noted to be on Portion 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 of 15832 FU, Portion 9, 10, 11, and 12 of RESERVE NO 12 15832 HU. However, following extensive analysis, this area has been reduced to only Portion 12 of Farm Reserve No. 12 NO. 15832-HU which is owned by Ingonyama Trust Board under the management or authority of the Mathereni Traditional Council. A consent letter has been signed and attached as **Appendix F specifically for Portion 12 of the farm.**



8.1.2 Social and Economic

The proposed prospecting site is located in Ward 13 of the Nongoma Local Municipality under the jurisdiction of the Zululand District Municipality (Figure 6).

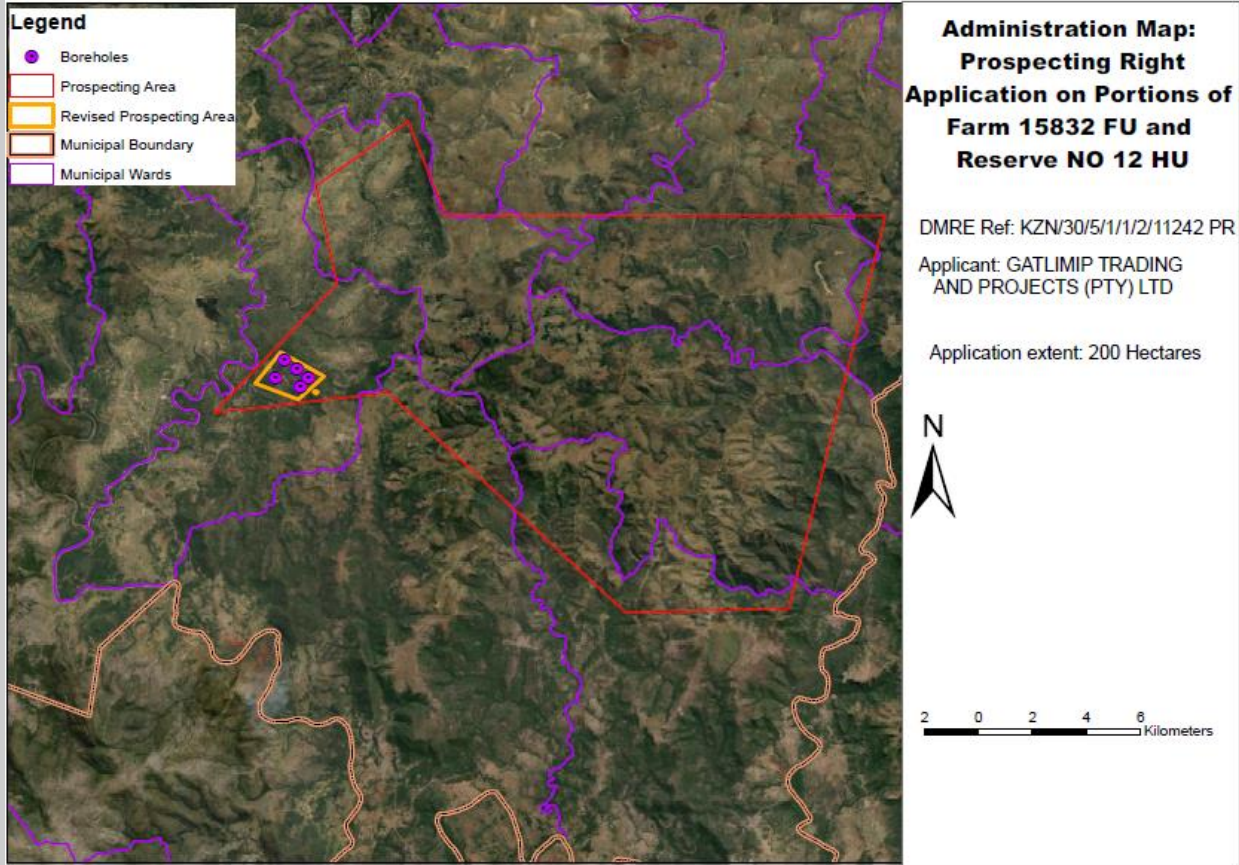


Figure 6: Wards Map

Nongoma, set in beautiful, picturesque Zululand, is located to the north of KwaZulu-Natal. Nongoma Local Municipality is Zululand's second largest municipality in terms of population, and the second largest in terms of area. Nongoma is the Royal City of Zululand. It is the home of King Goodwill Zwelithini, and the hereditary leader of the nation and his royal palaces are among the main tourist attractions in the town. The royal family is highly respected and has a dominating presence in this rural and very traditional part of Zululand.

Nongoma Town is mainly a service-oriented centre resulting from its being the seat of the Nongoma Local Municipality and centrally located with regard to surrounding rural/farming communities. The radial network of roads all converging in Nongoma Local Municipality bears testimony in this regard.

According to Census 2011, Ward 13 Nongoma Local Municipality has a total population of 6 547 of entirely 100% black Africans. Of those aged 20 years and older, 51.9% have completed primary school, 28.7% have some secondary education, 28% have completed matric.

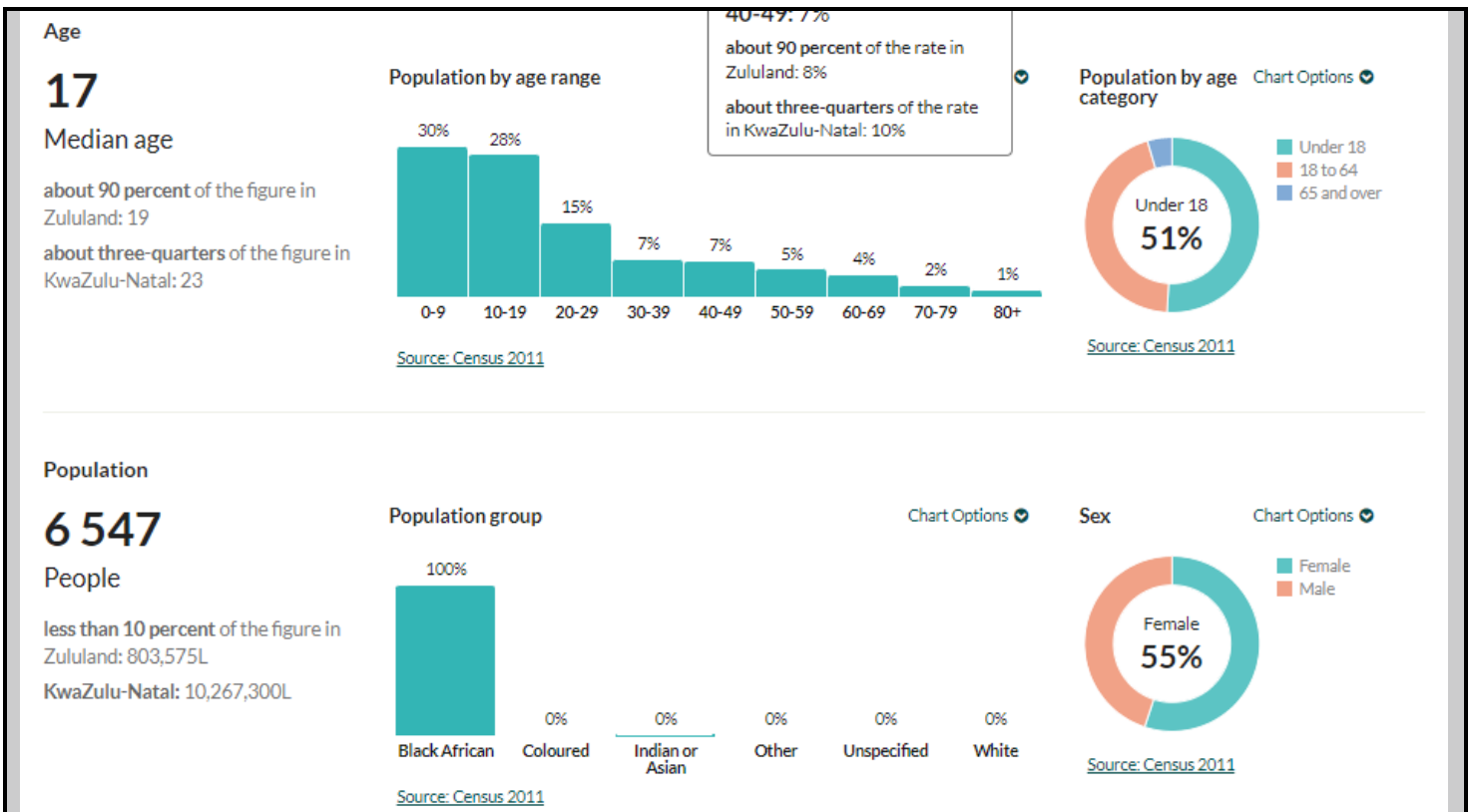


Figure 7: Gender, Population group statistics

Unemployment is rife in the ward with more than 9.5% of the population is employed whilst the municipality has 18.59% employment rate.



Figure 8: Employment statistics

8.1.3 Geology

The geological formation of NLM rests upon the Basement Complex which comprises the most highly mineralized ancient rocks of the geological series, including granites some of which are highly erodible when exposed to the elements. The granite landscape is characterized by immense relief. The geological structure found in the municipality is mainly characterised by clastic sedimentary rocks such as Arenite, Dolerite, Mudstone and Shale. Clastic sedimentary rocks are formed from mechanical weathering debris.

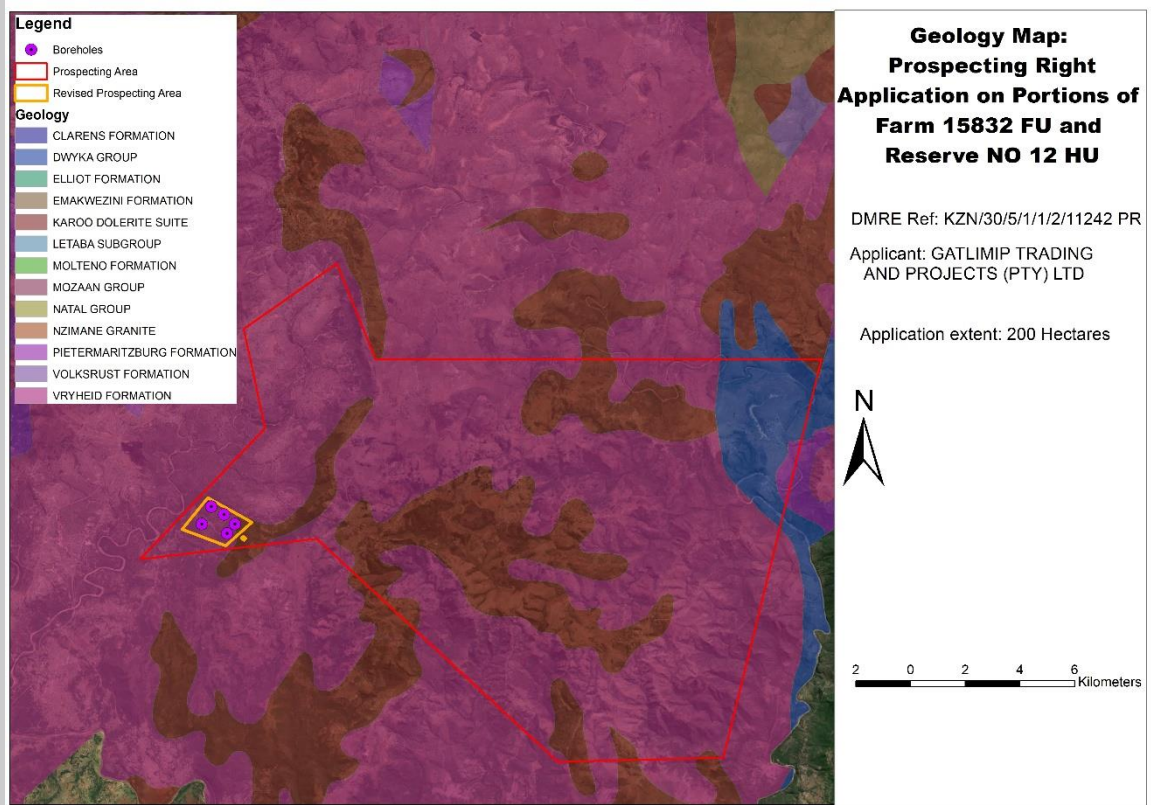


Figure 9: Geological map

The A coal zone in the Nongoma Coalfield has a thin A1 Seam and a thicker A2 Seam with raw ash values of between 33 and 42%. Anthracite occurs in the lower A zone. The B Zone consists of four seams with raw ash values of 25%; anthracite occurs in the upper part of the B Zone. Plant-scale wash tests on the Somkhele project indicate the anthracite is of high quality with a high reactive component, low to medium ash, low phosphorus calcium oxide in the ash and low sulphur. The Mozaan Group of the Pongola Supergroup is broadly made up of alternating layers of quartz, conglomerate, iron rich shale and iron-formations. The application area overlies the Mozaan Group in the local Magudu district. This group comprises three subgroups; the Nkoneni, Odwaleni and Dwaalhoek Subgroup (Beukes and Cairncross, 1991). Each of these is separated into numerous formations. The Nkoneni Subgroup consists of the Ntanyana and Bongaspoort Formations, a 540m thick succession comprised of iron rich mudstone grading into siltstone/shale.

The Odwaleni Subgroup consists of the Khiphunyawo, Nconga and Delfkom Formations, a 1,530m thick succession comprised of iron formations and one extrusive lava flow (Tobolsk lava) which can often be used as a marker. A thick quartzite succession known as the Hlashana Formation separates the Nkoneni and Odwaleni Subgroups from the Dwaalhoek Subgroup. The Dwaalhoek Subgroup is comprised of the Thalua and Ntobe Formations, a thick succession of magnetic mudstones and shales which host intermediate iron formations in the Scotts Hill Member and the Mhlatuze Member. An iron formation outcrops prominently on the application area. It is approximately 50m thick, dark grey blue in colour, showing prominent layering of magnetite and silica-rich material.

8.1.4 Agricultural capability

According to the Department of Forestry, Fisheries and the Environment Screening Tool, a high sensitivity towards agriculture is noted within the larger extent of prospecting area. Small scale traditional agricultural practises are noted within the study area. The community members of the farm have raised concerns of the proposed activity in relation to the current agricultural activities especially grazing for the cows. However, the temporary nature of the activity afforded a degree of comfort to the occupants.

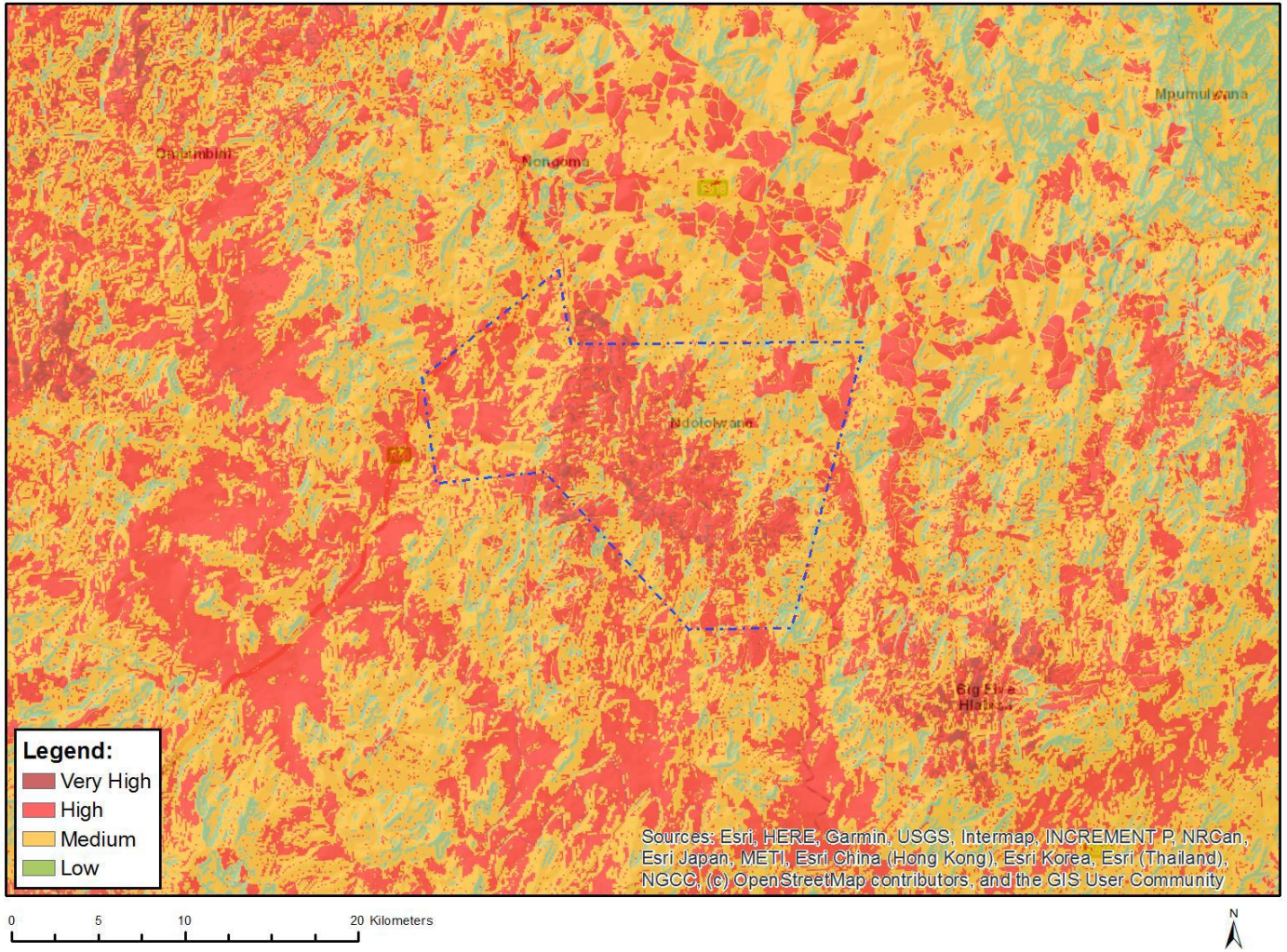


Figure 10: Agricultural sensitivity map

8.1.5 Soils

The application area consists of soils Strongly structured cracking soils, mainly bright coloured, characterised as Dystric leptosols.

8.1.6 Biodiversity

Critical Biodiversity Areas (CBA) are natural or near natural landscapes that are considered critical for meeting biodiversity targets and thresholds, and which safeguard areas required for the persistence of viable populations of species and the functionality of ecosystems. There are few areas within the municipality that have been identified by Ezemvelo KZN Wildlife as KZN CBA Irreplaceable and are located along the north-eastern municipal boundary, along the western boundary bordering the Zululand Rhino Reserve, and in the area of Maphophoma.

The identification of these areas with environmentally sensitive areas aims to ensure that they are well protected and necessary considerations are made as far as development proposals are concerned. The municipality along with traditional leadership have the responsibility to ensure that these areas are protected by the community and that suitable land uses, economic activities and tourism opportunities are realised in and around these areas.

According to the database, no CBAs and ESAs are noted within the reduced area.

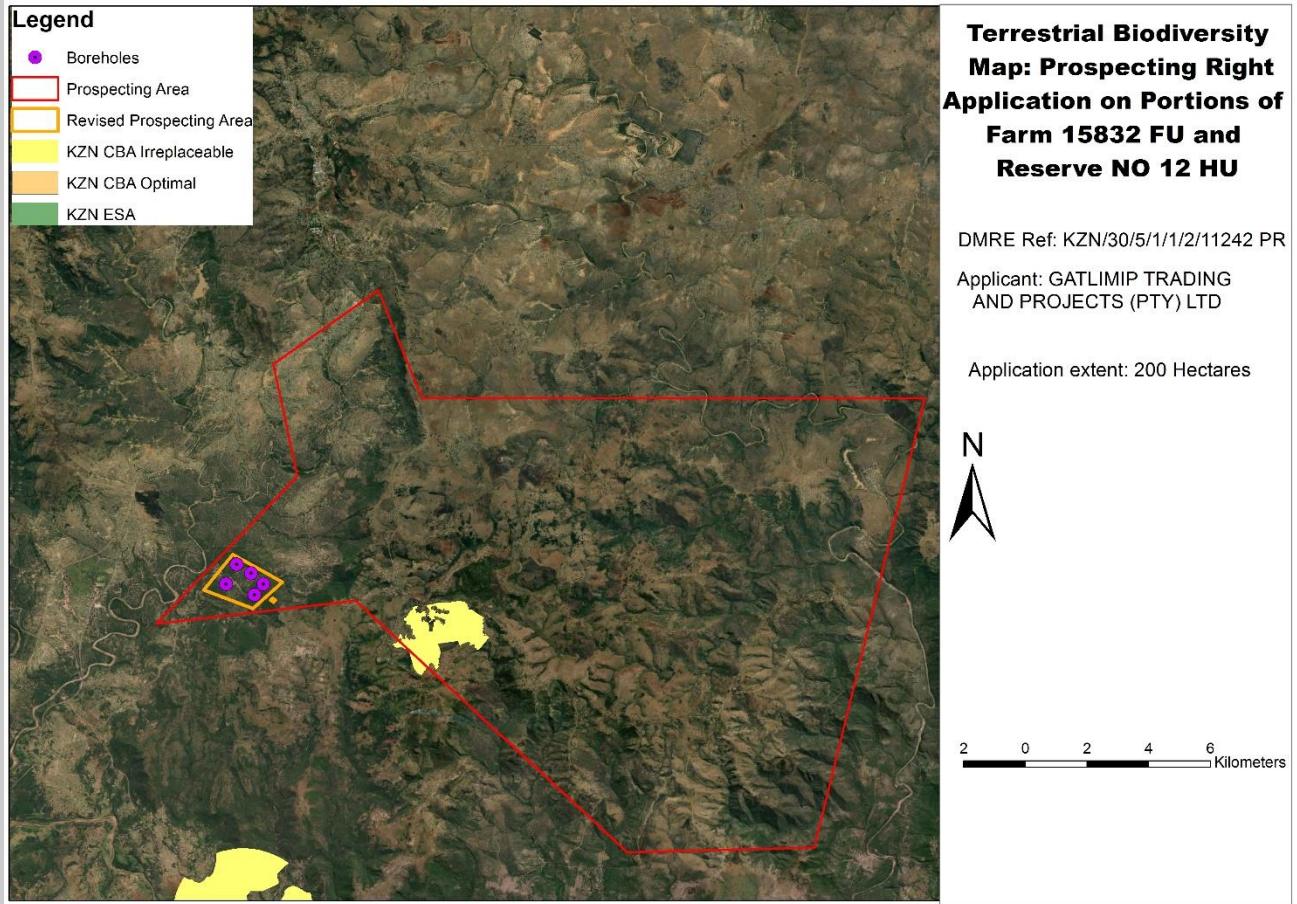


Figure 11: Biodiversity Map

Animal Species

A medium sensitivity is noted in terms of animal species. There is an anticipated presence of a *Reptilia-Kinixys natalensis*, *Aves-Terathopius ecaudatus*, *Mammalia-Acinonyx jubatus*, *Mammalia-Lycaon pictus* and *Mammalia-Ourebia ourebi ourebi* animal species as indicated below in Error! Reference source not found.. The EAP did not take note of any of the species tabulated below mainly due to the dominance of human activities. However, *Mammalia-Ourebia ourebi ourebi* is typically traditionally hunted in the area.

The Ecological report further outlined the presence of the following fauna species;

Avifauna

Common name	Species name	Conservation Status
Olive-pigeon, African	<i>Columba arquatrix</i>	LC
Robin-chat, Cape	<i>Cossypha caffra</i>	LC
Hornbill, Trumpeter	<i>Bycanistes bucinator</i>	LC
Warbler, Yellow-Throated Woodland	<i>Phylloscopus ruficapilla</i>	LC
Groundthrush, Orange	<i>Geokichla gurneyi</i>	LC
Chat, Mocking Cliff	<i>Thamnolaea cinnamomeiventris</i>	LC
Chat, Familiar	<i>Cercomela familiaris</i>	LC
Batis, Cape	<i>Batis capensis</i>	LC
Bushshrike, Olive	<i>Telophorus olivaceus</i>	LC

Mammals

Common name	Species name	Conservation Status	Verified on site
Common duiker	<i>Cephalophinae</i>	LC	X
Scrub hare	<i>Lepus saxatilis</i>	LC	
Warthog	<i>Phacochoerus africanus</i>	LC	
Caracal	<i>Caracal caracal</i>	LC	

Herpetofauna

There were no herpetofauna identified within the project area during the survey. Consultation with local residents and common sightings were documented and are presented in the table below;

Common name	Species name	Conservation Status	Verified on site
Black Mamba	<i>Dendroaspis polylepis</i>	LC	
Green Mamba	<i>Dendroaspis angusticeps</i>	LC	
Puff adder	<i>Bitis arietans</i>	LC	
Rock python	<i>Python sebae</i>	LC	
Mozambique Spitting Cobra	<i>Naja mossambica</i>	LC	

8.1.7 Land Use

The study area consists of a rural residential area south of the reduced prospecting area. The majority of the study area rural homesteads, grassland, clinic, gravel road, graveyard and minor agricultural practices.

8.1.8 Noise

Potential noise sources from the area may emanate from the following sources i.e., road and surrounding land uses.

8.1.9 Air Quality

The sources of air pollution from human activities comprise of three broad categories i.e., stationary sources (mining, quarrying, community sources (homes or buildings, municipal waste, fireplaces, cooking facilities, laundry services and cleaning plants) and mobile sources combustion-engine vehicles and fugitive emissions from vehicle traffic). Air pollutants are generally classified into suspended particulate matter (dust, fumes, mists and smokes), gaseous pollutants (gases and vapors) and odors.

Assessment of the proposed prospecting right area has determined that all three categories of air pollution sources are expected to be of a low significance within the reduced application area.

8.1.10 Topography

According to the Nongoma Local Municipality IDP (2020/21), Nongoma is split into two topographic areas by a ridge running in an east-west line. The stony terrain is undulating to hilly with the highest areas situated in the central and north western areas of the Municipality, which includes areas of Mahashini and Nongoma town. It is dissected by several streams and rivers and is characterized by numerous Bad Lands thus the arable area is confined to the flatter parts of the plateau or in the wider river valleys. The plains and valleys are commonly used for settlements and crop cultivation, as a result scattered settlement patterns are observed.

The mean elevation (m above sea level) ranges from 257m above sea level, to 1,135m above sea level and the town of Nongoma is situated on a ridge approximately 750 meters above sea level slightly West of the Centre of the Municipality. The varying topography reduces the developable envelope and accessible land, however, may increase the number of possible catchments and water bodies within the areas.

The study area is situated within an undulating valley in a relatively steep profile as indicated by **Figure 12** below.

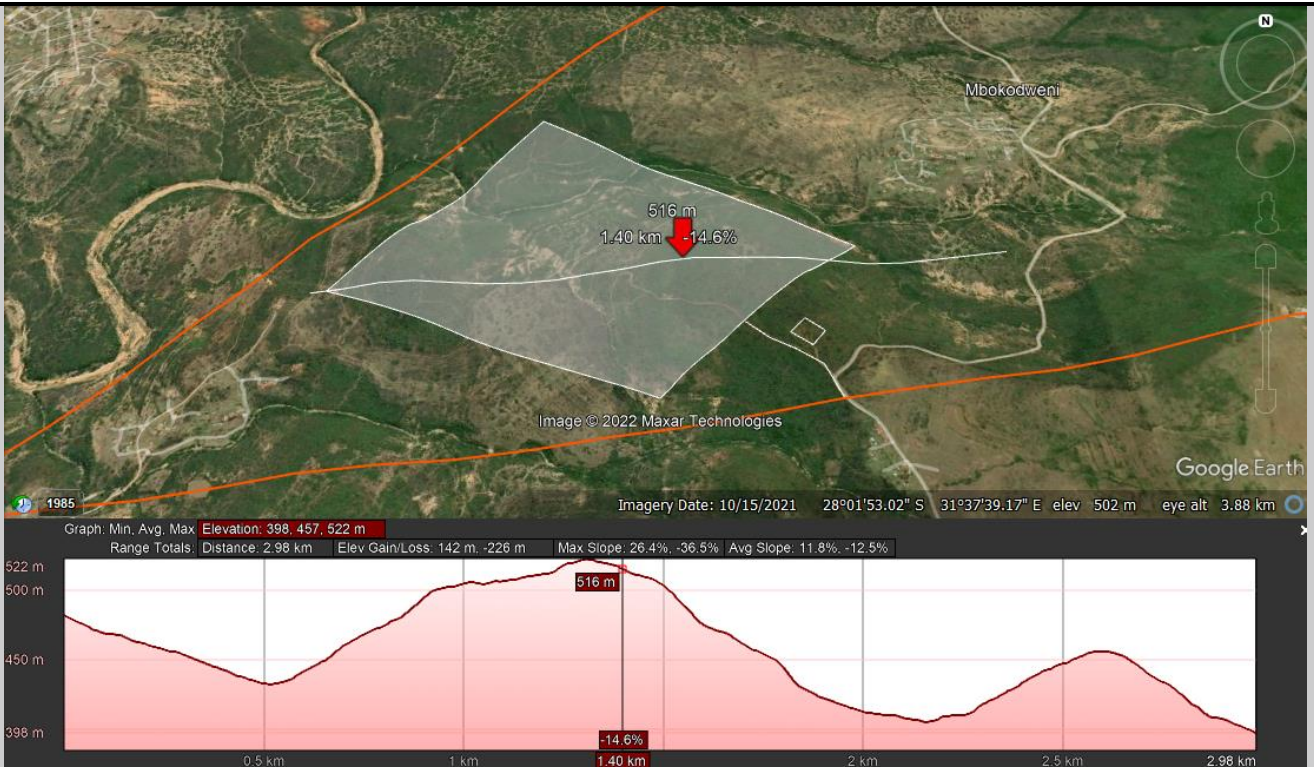


Figure 12: Topographic profile

8.1.11 Climate

Nongoma normally receives about 775mm of rain per year, with most rainfall occurring mainly during mid-summer. The average rainfall varies for Nongoma per month, and it receives the lowest rainfall (8mm) in July and the highest (124mm) in December. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Nongoma range from 21.9°C in June to 29°C in January. The region is the coldest during June when the mercury drops to 7.4°C on average during the night.

According to the Nongoma IDP (2021) changes in the variability or the average state of the atmosphere over time are generally accepted as part of the natural cycle of climate change, but there is a large portion of the scientific community who believe that global climate variability has accelerated beyond natural cycles due to human activities. Climate change in this context refers to changes in the modern climate, including the rise in average temperatures known as global warming.

Climate change projections indicate that extreme weather events such as floods and droughts are likely to become more frequent and intense, and that poor and marginalized groups will be most vulnerable to the risks presented by change.

Natural and human induced factors influence the biophysical environment and drives environmental change. These changes place pressures on the environment and create outcomes, which are not always desirable. Therefore, environmental pressures must be maintained within their limits to avoid sudden ecological change that can drastically reduce the flow of ecosystem services, and thereby increase pressures on the social and economic systems. This is the basis of sustainability.

Good environmental governance and leadership is key in identifying and dealing with environmental changes within the municipality and undertaking the necessary awareness campaigns around such issues. Environmental governance is defined as “the exercising of authority over the use and management of natural resources, and the environment. It is essentially about making decisions and about who makes decisions.

It includes rules, processes and behaviors that affect the manner in which decisions are made. These decisions ultimately determine whether the environment is harmed or improved”. The existing municipal and traditional leadership within the municipality has great potential to drive change and creating desirable outcomes for the community and the environment.

The table below shows the climate potential as experienced in the various parts of the municipality, such potential is a result of favorable conditions for optimal use of land as far as arable land is concerned.

CLIMATE POTENTIAL	AREA (HA)	% OF MUNICIPAL AREA
Good climate potential	13465,07	6,2
Moderately good	80036,89	36,7
Poor climate potential	56497,13	25,9
Very poor climate	68242,29	31,3

8.1.12 Hydrology

The prospecting area is located within the Mfolozi Water Management Area (WMA) under W31F quaternary catchment with multiple wetlands noted within 500m of the site. The prospecting area has been carefully selected to exclude any wetland buffers.

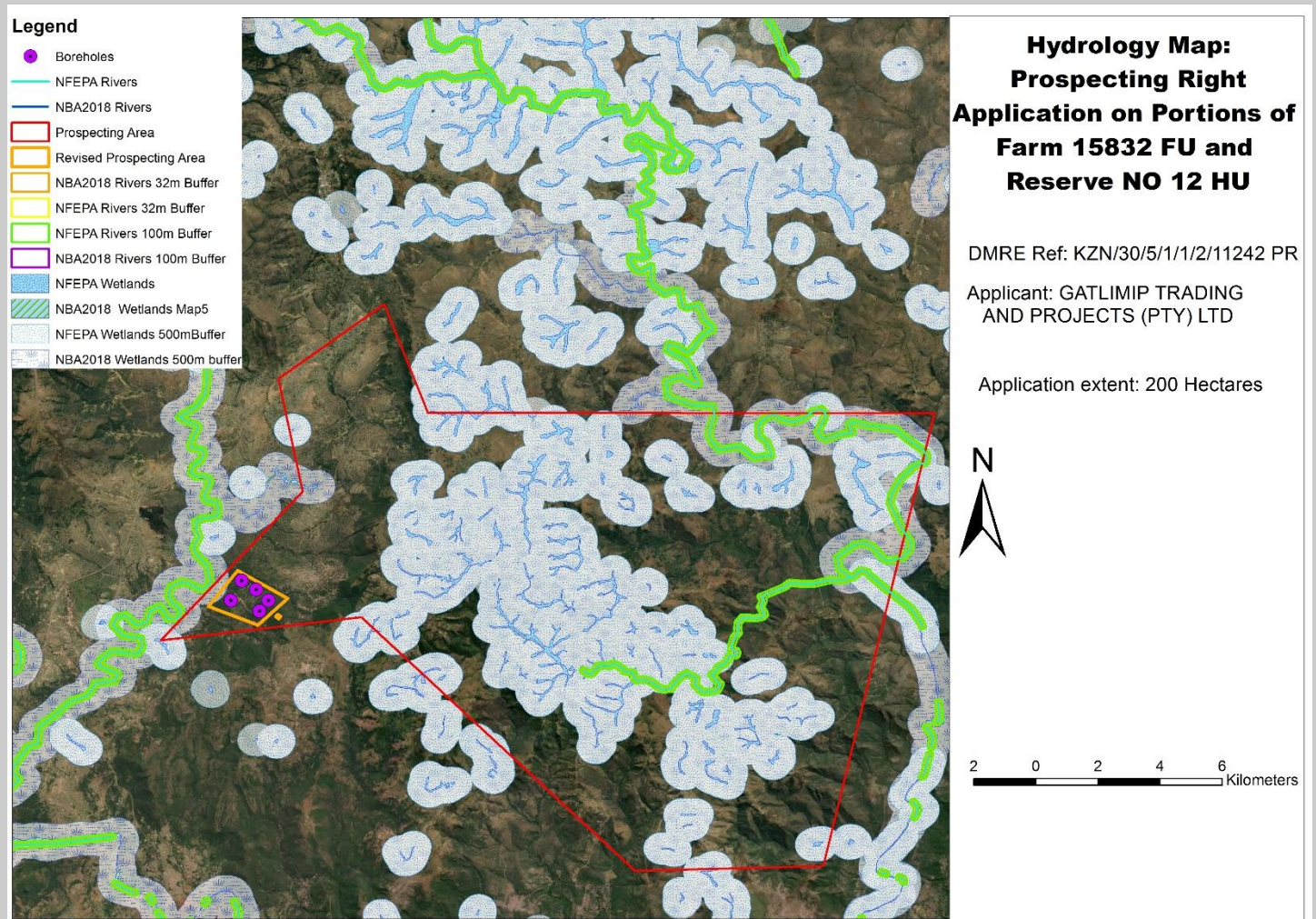


Figure 13: Hydrological map

8.1.13 Heritage Resources

The results below have been obtained from the Heritage report attached as Appendix G2.

Four sites were noted on historical aerial imagery and on topographical maps, three additional sites were observed during the survey, while the location of one site was provided by Meridien Resources (Pty) Ltd. These sites include one cemetery, two grave sites, a stone-walled enclosure dating to historical times, and four areas potentially associated with historical infrastructure.

Since the identified sites do not intersect the demarcated prospecting locations, the sites are not at risk of being impacted by the proposed prospecting project. However, due to the sensitive nature of graves, it is recommended that no activity takes place within 50 m of the grave / cemetery sites. Although the proposed access road intersects as small portion of the 50 m cemetery buffer at Site B05, impact to the graves is not foreseen. This is due to the location of the proposed access road being based on an existing road and due to the fact that the access road will be used to transport prospecting equipment only.

Proposed prospecting site DH1 could not be accessed due to dense vegetation, therefore it is recommended that the Environmental Control Officer, as well as a member of the local community, inspect DH1 after access has been obtained and prior to any prospecting activity. No potential heritage sites were observed at sites DH2 – DH5 and the areas are therefore not considered to be sensitive from a heritage perspective.

Also, no access routes to the proposed prospecting locations exist and since the study area is associated with graves and past settlements, potential heritage resources may be impacted. Due the local community's in-depth knowledge of the study area, it is recommended that a member of the local

community, as well as the Environmental Control Officer, accompany the prospecting team when clearing the way to each of the proposed prospecting sites in order to limit the potential impact to heritage resources.

8.1.14 Vegetation

The rainfall levels in the area and the diversity in landscape features have created different and a particular environment conducive for various types of vegetation in the municipal area. The northern and north-western parts of the study area are predominantly covered by Zululand Lowveld to the extent that it covers approximately 57% of the entire municipal area. The study area is totally dominated by Zululand Lowveld. In addition, the DFFE Screening tool also noted a medium sensitivity with regards to plant species due to the possibility of protected species whose names are withheld.

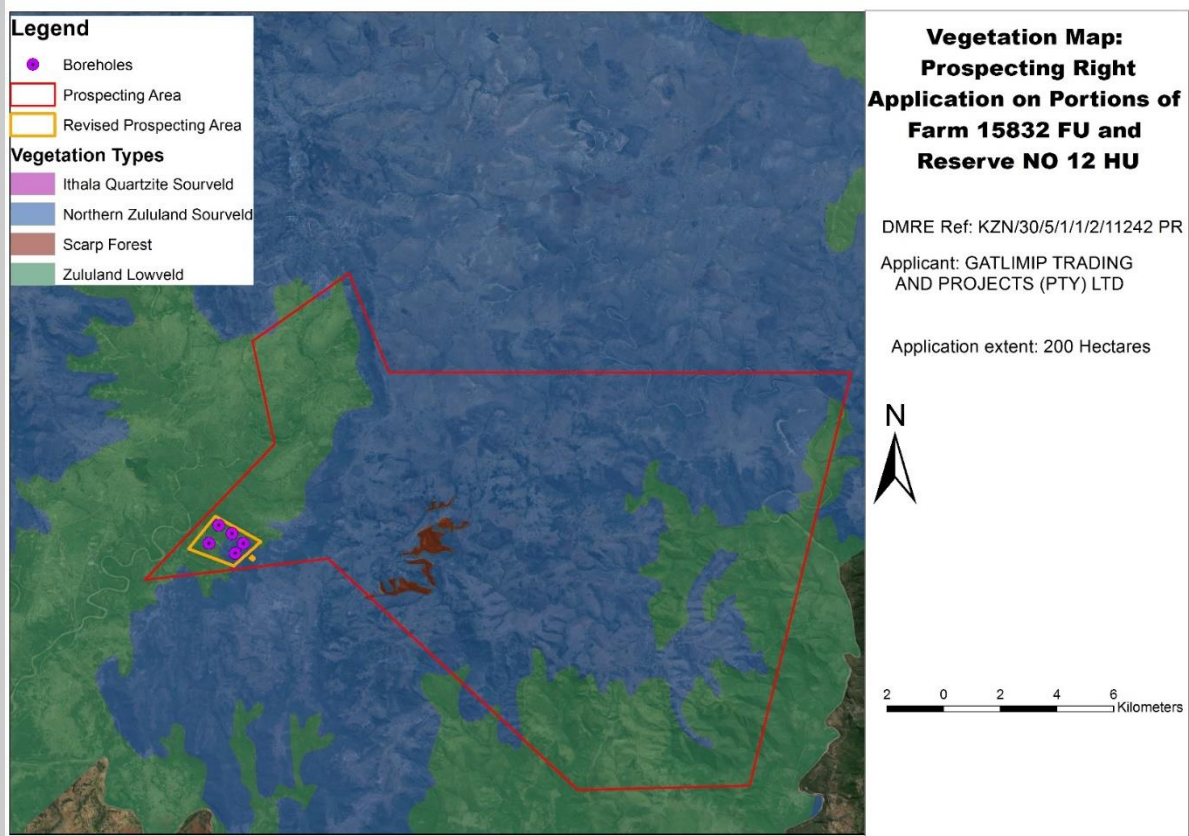


Figure 14: Vegetation Map

Based on the field observations the following results were obtained by the specialist

The field investigation consisted of random sampling throughout the proposed project area. The vegetation within the project area was largely uniform and did not present a distinct boundary between the vegetation types as identified in the desktop assessment. The vegetation represented a slightly modified Northern Zululand Sourveld vegetation unit as presented in the figure below. The vegetation was dominated by a wooded *Vechellia* woodland with a sparse understory comprised of *Cymbopogon* and *Digitaria natalensis* species. *Melenis repens* dominated areas adjacent to roads and developments. *Lantana camara* was identified in large areas of the project area. Much of the project area is utilized as natural areas with some for low intensity livestock grazing and previously housing. The overall plant diversity within the project area was considered moderate.



The plant species observed within the project area are listed in table below. There seven (7) alien invasive species identified within the survey transects of the project area.

Species name	Common name	Conservation status
<i>Agave americana</i>	Century plant	
<i>Aloe marlothii</i> subsp. <i>marlothii</i>	Mountain aloe	
<i>Aristida congesta</i>	Buffalo grass	
<i>Boscia albitrunca</i>	Shepherd's tree	
<i>Cussonia spicata</i>	Cabbage tree	
<i>Cymbopogon caesius</i>		
<i>Dichrostachys cinerea</i>		
<i>Digitaria natalensis</i>	Prostrate coast finger grass	
<i>Diospyros lycioides</i>		
<i>Eragrostis curvula</i>	Cape love grass	
<i>Euphorbia ingens</i>	Tree euphorbia	
<i>Helichrysum mixtum</i>		
<i>Heteropogon contortus</i>		
<i>Melania repens</i>	Natal red top	
<i>Olea europaea</i> subsp. <i>africana</i>	African Olive tree	
<i>Opuntia ficus-indica</i>	Prickly pear	Category 1b (NEMBA)
<i>Panicum maximum</i>		
<i>Protea</i>		
<i>Sclerocarya birrea</i> subsp. <i>caffra</i>		
<i>Setaria incrassata</i>		
<i>Sporobolus africanus</i>	Rat's tail grass	
<i>Tagetes minuta</i>	Khakibos	
<i>Themeda triandra</i>	Red grass	
<i>Vechelia natalitia</i>		
<i>Vechelia nilotica</i>		
<i>Vechelia sieberiana</i> var. <i>woodie</i>	Paperbark tree	
<i>Vechelia tortilis</i> subsp. <i>heteracantha</i>	Umbrella thorn tree	

Alien Species

Two alien species were identified i.e. (A) *Agave americana* and (B) *Opuntia ficus-indica*



Protected Plant Species

One (1) tree species that is protected under the National Forest Act (Act 24 of 1998) as prescribed in Schedule A was identified within the proposed project area. The figure below presents the protected *Boscia albitrunca* tree as identified in the project area.



Vegetation modification

The land uses within the local area have led to the modification of the natural vegetation and habitat structure. Several land uses were observed in the project area, and these include cattle grazing, informal roads and homesteads in the project area and surrounding areas. In many instances, human disturbance, including agricultural practices, lead to the degradation of vegetative structures and lowers the plant diversity. This was observed within the project area as a high level of mono-specificity of plant species was determined and areas of bare soil and sparse grassland were observed

9. METHODOLOGY OF IMPACT ASSESSMENT

The following methodology has used to conduct the impact assessment for the proposed prospecting application.

ASPECT	SCORE	DEFINITION
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
Intensity	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease) or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease)
Reversibility	1	Impact is reversible without any time and cost
	2	Impact is reversible without incurring significant time and cost
	3	Impact is reversible only by incurring significant time and cost
	4	Impact is reversible only by incurring prohibitively high time and cost
	5	Irreversible Impact
Probability	1	Improbable (the possibility of the impact materialising is very low as a result of
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

SIGNIFICANCE AND RISK CATEGORY	DEFINITION
< -10	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>-10 <-20	Medium negative (i.e. where the impact could influence the decision to develop in the area).
>-20	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).

10. IMPACTS AND RISKS IDENTIFIED

(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).

CONSTRUCTION / OPERATION PHASE		
Impact	Social: Safety and security risks to landowners and land occupiers	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	8 (low)
Mitigation Measures:		
<ul style="list-style-type: none"> Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowners. This formal agreement should additionally stipulate landowner's special conditions which would form legally binding agreement. All homestead gates must be closed immediately upon entry/exit. Vehicles used must be in a roadworthy condition. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport. 		
Impact	Disturbance of faunal species	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	8 (low)
Mitigation Measures:		
<ul style="list-style-type: none"> Avoid high biodiversity sensitivity areas (natural vegetation, watercourses & wetlands) and comply to prescribed buffer zones. Implement training and awareness programs on human-wildlife conflict Limit working to daytime hours, no work or bright lights at night Avoid areas of faunal habitat Implement training and awareness programs on human-wildlife conflict Limit working to daytime hours, no work or bright lights at night Minimise footprint area Work only in clearly demarcated areas Implement training and awareness programs on human-wildlife conflict Limit working to daytime hours, no work or bright lights at night Monitor perimeter fences and carry out required maintenance immediately 		
Impact	Disturbance of the natural characteristic of wetlands and rivers	

Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	8 (low)
Mitigation Measures:		
<ul style="list-style-type: none"> It is recommended that all drill sites be located outside (or beyond) the 500m buffer zone for wetlands as much as possible; Drill sites must be decommissioned and rehabilitated on completion of drilling each hole, and not left to be rehabilitated on completion of the drilling programme; and Existing access routes should be prioritised for the programme, with all newly required features adhering to the buffer zone 		
Impact	Clearance of vegetation	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	3
Probability	5	4
Environmental Risk Pre-Mitigation	13 (moderate)	11 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> Avoid sensitive areas and implement buffer zones Avoid areas in which plant species of conservation concern may occur; If some areas cannot be avoided implement rescue of plant species of conservation concern. Fence off the work area and demarcate clearly Limit the footprint area to the pit and infrastructure Avoid areas of remaining indigenous vegetation implement rescue of plant species of conservation concern. Avoid <i>Boscia albitrunca</i> trees Existing roads must be used as far as possible. In the event that the proposed activity requires new access routes, these routes should avoid all sensitive areas and their ecological buffers. Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance. Where possible, locate drill sites as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads. Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting. 		
Impact	Soil Compaction	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	4	2
Environmental Risk Pre-Mitigation	13 (moderate)	9 (low)
Mitigation Measures		

- All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil.
- Where topsoil is to be removed, the topsoil and subsoil must be stockpiled separately, with stockpiles of topsoil being no greater than 1.5 meters in height and the replacement of topsoil and subsoil in original order.
- All drill holes and survey pits must be filled in and rehabilitated.

Impact	Disturbance/damage/destruction to Grave Site	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	2	2
Reversibility of Impact	3	3
Probability	2	1
Environmental Risk Pre-Mitigation	10 (low)	9 (low)
Mitigation Measures		

- A 50 m buffer has been maintained around cemeteries and that no construction material be placed near the cemeteries. The construction camp should also be constructed away from the cemeteries.
- Should skeletal remains be exposed during the prospecting project, all activities must be suspended, and the relevant heritage resources authority must be contacted (See National Heritage and Resources Act, 1999 (Act No. 25 of 1999 section 36 (6))). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified archaeologist.

Impact	Noise	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	1	1
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	7 (low)
Mitigation Measures		

- All construction vehicles and machinery must be maintained in good working order.
- When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Impact	Dust	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	1
Magnitude of Impact	3	2
Reversibility of Impact	2	2
Probability	3	3
Environmental Risk Pre-Mitigation	12 (moderate)	10 (low)
Mitigation Measures		

- All vehicles utilising gravel roads must adhere to speed limits.
- By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions.
- Prospecting activities (including drill sites) must be located 100 m away from the residential area.

Impact	Increased runoff & sedimentation	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	2
Duration of Impact	3	2
Magnitude of Impact	4	2
Reversibility of Impact	4	2
Probability	4	4
Environmental Risk Pre-Mitigation	17 (moderate)	11 (moderate)

Mitigation Measures

- Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion.
- All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion.
- Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated.

Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3
Probability	4	3
Environmental Risk Pre-Mitigation	14 (moderate)	12 (moderate)

Mitigation Measures

- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Impact	Heritage Resources	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3

Probability	4	3
Environmental Risk Pre-Mitigation	14 (moderate)	12 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> The identified burial grounds should be fenced off and a 50-metre buffer is observed to insure the graves are not destroyed by the development. Relatives of the deceased should be given access if they wish to visit the burials. There is a very high possibility that more graves and archaeological material may be found during the excavation phase. This is due to the dense vegetation cover in the project area and the fact that some of the families that lived in that farm before are no longer living there. There could be more graves that the survey could not find. In the event that any human remains are discovered. It should also be pointed out that the NHR-Act requires that operations exposing archaeological and historical residues, including modern graves, should cease immediately pending an evaluation by the heritage authorities. It is very likely that sub-surface remains of archaeological artefacts and sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to heavy plant cover in other areas. In the event of discovery such archaeological artefacts or sites during site preparation and mining phase, the KZN Provincial Heritage Resources Authority or SAHRA will be informed immediately and a Phase 2(two) Heritage Impact assessment should be initiated. It is recommended that a limited Phase 2 Specialist Study (Mitigation and SAHRA human burial exhumation permit application) be conducted prior to the commencement of development in this area (if the developer wishes to use sections where heritage resources were graves identified). 		
Impact	Introduction of alien invasive species	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	4	2
Reversibility of Impact	4	2
Probability	3	2
Environmental Risk Pre-Mitigation	14 (moderate)	8 (low)
Mitigation Measures		
<ul style="list-style-type: none"> Undertake activities in previously disturbed areas. Locate activities on the boundaries of existing disturbance. Use existing access roads as much as possible. Rehabilitate disturbed areas as soon as possible. Manage alien plants within close proximity to prospecting activities. 		
DECOMMISSIONING PHASE		
Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	4	3
Probability	4	2
Environmental Risk Pre-Mitigation	15 (moderate)	11 (moderate)
Mitigation Measures		

- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Impact	Noise	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	1
Probability	3	2
Environmental Risk Pre-Mitigation	12 (moderate)	7 (low)
Mitigation Measures		

- All construction vehicles and machinery must be maintained in good working order.
- When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Impact	Dust	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	1	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	10 (low)	8 (low)
Mitigation Measures		

- All vehicles utilising gravel roads must adhere to speed limits.
- By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions.

(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

No changes of the original prospecting area were made during the commenting period especially with regards to the drill hole locations relative to the watercourses.

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

The following potential mitigation measures and residual risks have been provided for each environmental aspect assessed. It should be noted that this report will be made available to I&APs for review and comment, and their comments and concerns will be addressed in the final report to be submitted to the DMR for adjudication.

Furthermore, it should be noted that the results of the public consultation will be used to update the proposed potential mitigation measures prior to the submission of the finalised BAR and EMPr to the DMR for adjudication.

Safety and security risks to landowners and lawful occupiers:

- Ensure construction is consistent with occupational health and safety requirements.
- Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowner's special conditions which would form a legally binding agreement.
- All homestead gates must be closed immediately upon entry/exit.
- All construction and vehicles using public roads must be in a roadworthy condition and their loads secured. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport.

Clearance of vegetation:

- Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance.
- Where possible, locate drill sites and trenches as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads
- Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting.

Soil compaction:

- All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil.

Soil contamination/pollution:

- Drip trays must be placed under vehicles.
- Drilling fluids (mud) must be contained in the steel sumps and any spills or leaks must be cleaned up.
- Machinery to be used for the operation will be of good working conditions.
- Any hydrocarbon spill from the site establishment will be remediated as soon as possible.

Heritage Resources

- The identified burial grounds should be fenced off and
- a 50-metre buffer is observed to insure the graves are not destroyed by the development.
- Relatives of the deceased should be given access if they wish to visit the burials.
- There is a very high possibility that more graves and archaeological material may be found during the excavation phase. This is due to the dense vegetation cover in the project area and the fact that some of the families that lived in that farm before are no longer living there. There could be more graves that the survey could not find.
- In the event that any human remains are discovered. It should also be pointed out that the NHR-Act requires that operations exposing archaeological and historical residues, including modern graves, should cease immediately pending an evaluation by the heritage authorities.
- It is very likely that sub-surface remains of archaeological artefacts and sites could still be encountered during the construction activities associated with the project.
- Such sites would offer no surface indication of their presence due to heavy plant cover in other areas. In the event of discovery such archaeological artefacts or sites during site preparation and mining phase, the KZN Provincial Heritage Resources Authority or SAHRA will be informed immediately and a Phase 2(two)

- Heritage Impact assessment should be initiated.
- It is recommended that a limited Phase 2 Specialist Study (Mitigation and SAHRA human burial exhumation permit application) be conducted prior to the commencement of development in this area (if the developer wishes to use sections where heritage resources were graves identified).

Increased runoff and sedimentation:

- Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion.
- All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion.
- Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated.
- Clearing of vegetation or topsoil must be minimised as far as possible.
- A suitably qualified specialist must monitor that no drilling and trenching are undertaken on or within 100m of a watercourse and within the 1:100 years of a floodline.
- All disturbed areas must be suitably rehabilitated on completion of the works to ensure that erosion does not occur.

Spillage of oils, fuels and chemicals:

- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Dust

- All vehicles utilising public gravel roads must adhere to the speed limits.
- By minimising the removal of vegetation and topsoil in affected area, this will minimise the potential for dusty conditions.
- Prospecting activities (including drill and trench sites) must be located away from dwellings as far as possible.

Noise:

- All construction vehicles and machinery must be maintained in good working order.
- When working or traveling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Introduction of alien species:

- Undertake activities in previously disturbed areas.
- Locate activities on the boundaries of existing disturbance.
- Use existing access roads as much as possible.
- Rehabilitate disturbed areas as soon as possible.
- Manage alien plants within close proximity to prospecting activities.

Generation and disposal of waste

- Any excess or waste material or chemicals, including drilling muds etc. must be removed from the site and must preferably be recycled (e.g. oil and other hydrocarbon waste products)
- Any waste materials or chemicals that cannot be recycled must be disposed of at a suitably licensed waste facility
- All permanent facilities must be removed from site upon closure. This will include the associated equipment, material and waste on site
- Under no circumstances is any form of waste to be disposed of on site

(ix) Motivation where no alternatives sites were considered.

The application area has been selected as the preferred site based on the historical data and available, which indicates the potential for economically viable minerals to occur. In addition, the presence of operational mines within the Dundee town motivates the possibility of the desired mineral to occur.

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

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

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 are identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

The impact assessment process may be summarised as follows:

- Identification of proposed prospecting activities including their nature and duration.
- Screening of activities likely to result in impacts or risks.
- Utilisation of the above-mentioned methodology to assess and score preliminary impacts and risks identified.
- Inclusion of I&AP comment regarding impact identification and assessment.
- Finalisation of impact identification and scoring.

11. SUMMARY OF SPECIALIST REPORTS

No specialist assessments were required due to the nature of the environment and the selection of the reduced area to avoid sensitive areas.

12. ENVIRONMENTAL IMPACT STATEMENT.

12.1 Summary of the key findings of the environmental impact assessment

During the proposed prospecting operation impacts may only occur on soils, natural vegetation, surface water, groundwater, sensitive landscapes, air quality, noise, visual aspects, and sites of archaeological and cultural importance should the prospecting method statement not be adhered to.

Alternatives considered for the location campsite and drilling sites has shown that the selected locations would be the most favourable. Gatlimip will undertake measures to ensure that the identified impacts are minimised. Assessment of the impacts with the proposed mitigation measures has shown the significance of the impacts on all affected environmental aspects to be reduced from to low and negligible significance.

Cadastral

The application area is noted to be on Portion 139, 140, 149, 150, 151, 152, 155, 156, 157, 158, 159 & 160 of 15832 FU, Portion 9, 10, 11 and 12 of RESERVE NO 12 15832 HU. However, following extensive analysis, this area has been reduced to only Portion 12 of Farm Reserve No. 12 NO. 15832-HU which is owned by Ngonyama Trust Board under the management or authority of the Matheni Traditional Council.

Land Use

The study area consists of a rural residential area, gravel road, graveyard, and agricultural activities. The majority of the study area comprises of open land and a river in close proximity.

Land use will not change. Measures such as safety along the roads and dust suppression will be undertaken to ensure that the impacts on the landowners and land occupiers are minimised.

Vegetation

The rainfall levels in the area and the diversity in landscape features have created different and a particular environment conducive for various types of vegetation in the municipal area. The northern and north-western parts of the study area are predominantly covered by Zululand Lowveld to the extent that it covers approximately 57% of the entire municipal area. The study area is totally dominated by Zululand Lowveld. In addition, the DFFE Screening tool also noted a medium sensitivity with regards to plant species due to the possibility of protected species whose names are withheld.

The field investigation consisted of random sampling throughout the proposed project area. The vegetation within the project area was largely uniform and did not present a distinct boundary between the vegetation types as identified in the desktop assessment. The vegetation represented a slightly modified Northern Zululand Sourveld vegetation unit as presented in the figure below. The vegetation was dominated by a wooded *Vechellia* woodland with a sparse understory comprised of *Cymbopogon* and *Digitaria natalensis* species. *Melenis repens* dominated areas adjacent to roads and developments. *Lantana camara* was identified in large areas of the project area. Much of the project area is utilized as natural areas with some for low intensity livestock grazing and previously housing. The overall plant diversity within the project area was considered moderate.

The plant species observed within the project area are listed in table above. There seven (7) alien invasive species identified within the survey transects of the project area.

Alien Species

Two alien species were identified i.e. *gave americana* and *Opuntia ficus-indica*

Protected Plant Species

One (1) tree species i.e. *Boscia albitrunca* that is protected under the National Forest Act (Act 24 of 1998) as prescribed in Schedule A was identified within the proposed project area.

Vegetation modification

The land uses within the local area have led to the modification of the natural vegetation and habitat structure. Several land uses were observed in the project area, and these include cattle grazing, informal roads and homesteads in the project area and surrounding areas. In many instances, human disturbance, including agricultural practices, lead to the degradation of vegetative structures and lowers the plant diversity. This was observed within the project area as a high level of mono-specificity of plant species was determined and areas of bare soil and sparse grassland were observed

Assessment of the vegetation within the footprint of the development area has shown presence of natural vegetation. The nature of the proposed activity indicates medium impacts on the vegetation as boreholes drilled will be immediately rehabilitated upon completion through soil filling and plantation of removed indigenous vegetation. Limit the footprint area to the pit and infrastructure. Avoid areas of remaining indigenous vegetation. Implement rescue of plant species of conservation concern. Avoid *Boscia albitrunca* trees.

Faunal Species

The specialist assessment conducted observed and identified faunal species as detailed in Section 8 of the report. As such, the following mitigation measures are therefore recommended;

- Avoid high biodiversity sensitivity areas (natural vegetation, watercourses & wetlands) and comply to prescribed buffer zones.
- Implement training and awareness programs on human-wildlife conflict
- Limit working to daytime hours, no work or bright lights at night
- Avoid areas of faunal habitat. Implement training and awareness programs on human-wildlife conflict. Limit working to daytime hours, no work or bright lights at night
- Minimise footprint area
- Work only in clearly demarcated areas
- Implement training and awareness programs on human-wildlife conflict
- Limit working to daytime hours, no work or bright lights at night
- Monitor perimeter fences and carry out required maintenance immediately

Wetlands and Rivers

The prospecting area is located within the Mfolozi Water Management Area (WMA) under W31F quaternary catchment. The prospecting area has been carefully selected to exclude any wetland buffers.

Socio-economic

The proposed prospecting site is located in Ward 15 of the Nongoma Local Municipality under the jurisdiction of the Zululand District Municipality.

All workers must be recruited locally and temporary housed in the campsite to be established on site. The employees will be given strict instruction not to undertake activities that will affect the environment and that may have an impact on the landowner. Waste generated from the site will be collected in proper receptacle and disposed of in registered waste disposal sites.

Heritage resources

Four sites were noted on historical aerial imagery and on topographical maps, three additional sites were observed during the survey, while the location of one site was provided by Meridien Resources (Pty) Ltd. These sites include one cemetery, two grave sites, a stone-walled enclosure dating to historical times, and four areas potentially associated with historical infrastructure.

Since the identified sites do not intersect the demarcated prospecting locations, the sites are not at risk of being impacted by the proposed prospecting project. However, due to the sensitive nature of graves, it is recommended that no activity takes place within 50 m of the grave / cemetery sites. Although the proposed access road intersects a small portion of the 50 m cemetery buffer at Site B05, impact to the graves is not foreseen. This is due to the location of the proposed access road being based on an existing road and due to the fact that the access road will be used to transport prospecting equipment only.

Proposed prospecting site DH1 could not be accessed due to dense vegetation, therefore it is recommended that the Environmental Control Officer, as well as a member of the local community, inspect DH1 after access has been obtained and prior to any prospecting activity. No potential heritage sites were observed at sites DH2 – DH5 and the areas are therefore not considered to be sensitive from a heritage perspective.

Also, no access routes to the proposed prospecting locations exist and since the study area is associated with graves and past settlements, potential heritage resources may be impacted. Due to the local community's in-depth knowledge of the study area, it is recommended that a member of the local community, as well as the Environmental Control Officer, accompany the prospecting team when clearing the way to each of the proposed prospecting sites in order to limit the potential impact to heritage resources.

Therefore, the following recommendations are submitted;

- Should skeletal remains be exposed during the prospecting project, all activities must be suspended, and the relevant heritage resources authority must be contacted (See National Heritage and Resources Act, 1999 (Act No. 25 of 1999 section 36 (6))). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified archaeologist.

12.2 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 B**

The final map is depicted by **Figure 15** below depicting the randomly selected drill hole locations as well as all the identified sensitive features.

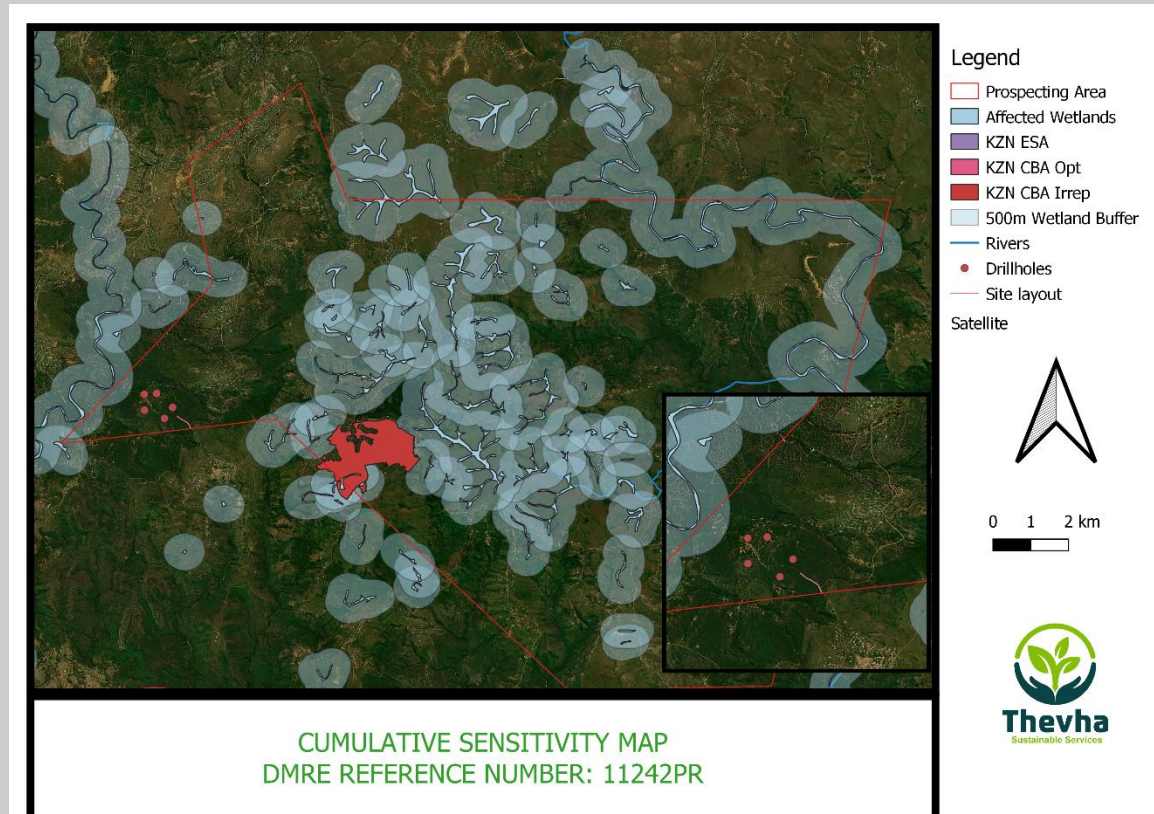


Figure 15: Cumulative sensitivity map

12.3 Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;

A summary of the positive and negative potential impacts associated with the project has been outlined in Section I(i) above.

13. 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 addresses the environmental impacts associated with the project during Construction, Operation, Decommissioning and Rehabilitation of the proposed project. The objectives of the EMPr will be to provide detailed information that will advise the planning design of mining activities in order to avoid and/or reduce impacts that may be detrimental to the environment. The following environmental management objectives are recommended for the proposed mining development and associated infrastructure:

- Alien plant monitoring should take place after construction, throughout the lifecycle of the borrow pit, as well as rehabilitation phase of the borrow pit.
- Development planning must restrict the area of impact to a minimum and designated area only. Monitor and prevent contamination and undertake appropriate remedial actions.
- Limit the visual and noise impact on receptors.
- Avoid impact on possible heritage finds.
- Promote health and safety of workers.
- Limit dust and other emissions to within allowable limits.
- Manage soils to prevent erosion.

14. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORIZATION

Any aspects which must be made conditions of the Environmental Authorization

In authorising the proposed Prospecting project, the following conditions must form part of the environmental authorisation:

- Gatlimip may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Gatlimip will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Gatlimip must, where necessary, undertake specialists' studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational phase of the prospecting activity.

15. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.

(Which relate to the assessment and mitigation measures proposed)

- The project scope and descriptions are based on project information provided by the client;
- The information presented in this report is based on the information available at the time of compilation of the report
- It is assumed that all data and information supplied by the departments, Applicant or any of their staff or consultants is complete, valid and true.
- The description of the baseline environment has been obtained from desktop studies and site visit. No specialist assessments were conducted for the preparation of this assessment report.

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 EIR. The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects.

These impacts may however be of smaller magnitude than predicted, while benefits could be of a larger extent than predicted. This section outlines various limitations to the specialist studies that have been undertaken and indicates, where appropriate, the adequacy of predictive methods used for the assessment. This has been done to provide the authorities and interested and affected parties with an understanding of how much confidence can be placed in this impact assessment.

The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report. The information provided in this BAR and EMPr is therefore considered sufficient for decision-making purposes.

16. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

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

According to the impact assessment undertaken for the proposed project, the key impacts of the project are on soils, wetlands, natural vegetation, and landowners/occupiers. The project will also have positive impacts due to the employment to be created although for a short term. The public will also be requested for their comments. All comments to be received during Public Participation Process will be included in this BAR and EMPr.

These comments will be addressed as far as possible to the satisfaction of the interested and affected parties. The management of the impacts identified in the impact assessment for all phases of the proposed project will be undertaken through a range of programmes and plans contained in the EMPr. Inconsideration of the programmes and plans contained within the EMPr, layouts and method statements compiled for the project, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

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

17. CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION

In authorising the proposed Prospecting project, the following conditions must form part of the environmental authorisation:

- Drill sites are to remain outside of sensitive areas as delineated in the sensitivity map.
- A detailed drill site layout plan should be submitted to the DMR and interested and affected parties once finalised
- An Environmental Control Officer should be appointed for the proposed prospecting project
- Gatlimip may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Gatlimip will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Gatlimip must, where necessary, undertake specialists' studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational phase of the prospecting activity.

18. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.

The Applicant requires the prospecting right to be valid for a period of five years.

19. UNDERTAKING

The undertaking is provided at the end of the EMPr and is applicable to both the BAR and EMPr.

20. FINANCIAL PROVISION

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

R 116 047.66. The breakdown is detailed in Section 20.1.

20.1 Explain how the aforesaid amount was derived.

- The amount was derived for 5 boreholes with an average area of 0.5 ha based on diamond/core drilling.
- Depth per borehole: ~300m (typical for diamond drilling)
- The proposed prospecting activity will utilize existing access roads
- The closure actions and associated period will commence as soon as a borehole is abandoned
- It is assumed that the management and mitigation measures suggested in the BAR relating to ongoing environmental management will be complied with. This includes post drilling clean-up and rehabilitation; and
- It is assumed that the drilling, will be carried out in accordance with industry best practice and that permeable zones are adequately isolated if intercepted (including the usable ground water aquifers)
- The calculation has also been based on the avoidance of the watercourses i.e. wetlands and rivers using 32 m buffers for rivers and 500m for wetlands. This is to ensure that the sensitive environments are protected.

	No.	Description	Unit	A	B	C	D	E=A*B*C*D
				Quantity	Master Rate	Multiplication factor	Weighting factor	Amount (Rands)
	1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	17.91	1	1	0
	2 (A)	Demolition of steel buildings and structures	m2	0	249.45	1	1	0
	2(B)	Demolition of reinforced concrete buildings and structures	m2	0	367.62	1	1	0
	3	Rehabilitation of access roads	m2	100	44.64	1	1	R4,464.00

4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	433.26	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	236.33	1	1	0
5	Demolition of housing and/or administration facilities	m 2	0	498.91	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	253918.43	1	1	R0.00
7	Sealing of shafts adits and inclines	m 3	0	133.92	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	1740355.5 7	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	2170156.7 2	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	630726.04	1	1	0
9	Rehabilitation of subsided areas	ha	0	145,996,5 3	1	1	0
10	General surface rehabilitation (5 boreholes)	ha	0.5	138,119	1	1	R69,059.51
11	River diversions	ha	0	138119.02	1	1	0
12	Fencing	m	0	157.55	1	1	0
13	Water management	ha	0	52516.74	1	1	0
14	2 to 3 years of maintenance and aftercare (20 boreholes)	ha	0.5	18380.86	1	1	R9,190.43
15 (A)	Specialist study	Su m	0	0	1	1	0
15 (B)	Specialist study	Su m	0	0	1	1	0

			Sub Total 1	R82,713.94
1	Preliminary and General	R9,925.67	weighting factor 2	R9,925.67
			1	
2	Contingencies	R8,271.39		R8,271.39
			Subtotal 2	R100,911.01
			VAT (15%)	R15,136.65
			Grand Total	R116,047.66

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

Gatlimip has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

21. Specific Information required by the competent Authority

No other information was requested or required from 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.

The consultation process allowed directly affected parties to raise their concerns. Further to this, it must be noted that I&AP's, including directly affected parties such as landowners, had the opportunity to review and comment on this report. The result of the public consultation is included in the final report submitted to the department for adjudication.

(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).

N/A

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 D).

N/A

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. INTRODUCTION

1.1 Details of the EAP

The requirements for the provision of the details and expertise of the EAP are included in Part A, Section a) and as Appendix A.

1.2 Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the environmental management programme is included in PART A, Section d).

2. ENVIRONMENTAL MANAGEMENT PRINCIPLES

It is extremely important for effective environmental management that the Applicant be aware of the general principles upon which sound environmental management is based and that these principles are considered in all aspects of the prospecting operation. NEMA has established a general framework for environmental law, in part by prescribing national environmental management principles that must be applied when making decisions that may have a significant impact on the environment. These principles are briefly summarised in the sections that follow.

2.1 Holistic principle

The Holistic principle, as defined by NEMA (Section 2(4)(b) requires that environmental management must be integrated, acknowledging that all elements of the environment are linked and inter-related and it must take into account the effect of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (defined below).

Holistic evaluation does not mean that a project must be looked at as a whole. It rather means that it must be accepted that there is a whole into which a project introduced. If the indications are that the project could have major adverse effects, the project must be reconsidered and where appropriate re-planned or relocated to avoid an adverse impact or to ensure a beneficial impact.

2.2 Best practicable environmental option

When it is necessary to undertake any action with environmental impacts, the different options that could be considered for the purpose must be identified and defined. The Best Practicable Environmental Option (BPEO) is defined in NEMA as "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term." Other guidelines typically used for environmental management in terms of other legislation include BPM which is the Best Practicable Means and BAT which is the Best Available Technology.

2.3 Sustainable development

The concept of sustainable development was introduced in the 1980's with the aim to ensure that the use of natural resources is such that our present needs are provided without compromising the ability of future generations to meet their own needs. The constitution of South Africa is built around the fact that everyone has the right to have the environment protected through reasonable legislative and other measures that secure ecologically sustainable development. The National Environmental Principles included in the NEMA require development to be socially, environmentally and economically sustainable.

2.4 Preventative principles

The preventative principle is fundamental to sustainable development and requires that the disturbance to ecosystems and the pollution, degradation of the environment and negative impacts on the environment be avoided, or, where they cannot be altogether avoided, are minimised and remedied.

2.5 The precautionary principles

The precautionary principle requires that where there is uncertainty, based on available information, that an impact will be harmful to the environment, it is assumed, as a matter of precaution, that said impact will be harmful to the environment until such time that it can be proven otherwise. The precautionary principle requires that decisions by the private sector, governments, institutions and individuals need to allow for and recognise conditions of uncertainty, particularly with respect to the possible environmental consequences of those decisions. In South Africa, the DWA (then DWAF, now DWS) adopted a BPEO guideline in 1991 for water quality management and in 1994 in the Minimum Requirements document for waste management.

In terms of DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, the precautionary principle is defined as, "Where a risk is unknown; the assumption of the worst-case situation and the making of provision for such a situation." Here the precautionary principle assumes that a waste or an identified contaminant of a waste is "both highly hazardous and toxic until proven otherwise."

In the context of the EIA process in South Africa, the precautionary principle also translates to a requirement to provide sound, scientifically based, information that is sufficient to provide the decision-making authority with reasonable grounds to understand the potential impacts on the environment, the extent thereof and how impacts could be mitigated. If such information is not adequate for this purpose, the relevant authority cannot be satisfied as is required and then the authority should require that further information be collected and provided.

2.6 Duty of care and cradle to grave principle

In terms of the NEMA Section 28, "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment."

By way of example, the principle of "duty of care" in terms of waste management emphasises the responsibility to make sure that waste is correctly stored and correctly transported, as it passes through the chain of custody to final point of disposal. This means that waste must always be stored safely and securely. The company removing and disposing of waste also holds the responsibility to hold the relevant licenses, and that waste is transported alongside the necessary paperwork. "Cradle to Grave" refers to the responsibility a company takes for the entire life cycle of a product, service or program, from design to disposal or termination. In terms of the DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, "any person who generates, transports, treats or disposes of waste must ensure that there is no unauthorised transfer or escape of waste from his control. Such a person must retain documentation describing both the waste and any related transactions. In this way, he retains responsibility for the waste generated or handled."

This places responsibility for a waste on the Generator, by the "Cradle to Grave" principle, according to which a "manifest" accompanies each load of Hazardous Waste until it is responsibly and legally disposed. This manifest is transferred from one transporter to the next along with the load, should more than one transporter be involved. Once the waste is properly disposed of at a suitable, permitted facility, a copy of the manifest must be returned to the point of origin." Duty of Care offers one strategy to implement sustainable development.

2.7 Polluter pays principle

The "polluter pays principle" holds that the person or organisation causing pollution is liable for any costs involved in cleaning it up or rehabilitating its effects. It is noted that the polluter will not always necessarily be the generator, as it is possible for responsibility for the safe handling, treatment or disposal of waste to pass from one competent contracting party to another. The polluter may therefore not be the generator but could be a disposal site operator or a transporter.

Through the 'duty of care' principle, however, the generator will always be one of the parties held accountable for the pollution caused by the waste. Accordingly, the generator must be able to prove that the transferral of management of the waste was a responsible action. The polluter pays principle acceding to NEMA dictates that "the cost of remedying pollution, environmental degradation and consequent adverse effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

3. FAILURE TO COMPLY WITH ENVIRONMENTAL CONSIDERATIONS

There are a number of penalties for non-compliance or offences. Below are a few extracts of national legislation with regards to non-compliance:

- NEMA Section 24F(2): It is an offence for any person to fail to comply with or to contravene the conditions applicable to any environmental authorization granted for that listed activity. 24F(4) A person convicted for an offence under subsection 2 is liable to a fine not exceeding 5 million rand or to imprisonment not exceeding 10 years or to both such a fine and imprisonment
- NEMA Section 34(6): Whenever any manager, agent or employee does or omits to do an act which it had been his or her task to do, or to refrain from doing on behalf of the employer and which would be an offence under any provision listed in Schedule 3 (relates to all environmental related acts) for the employer to do or omit to do, he or she shall be liable to be convicted and sentenced in respect thereof as if he or she were the employer
- NWA Section 151 (1): "No person may fail to comply with any condition attached to a permitted water use (Water Use License)"
- NWA Section 151 (2): "Any person who contravenes any provision of subsection 1 is guilty of an offence and liable, on the first conviction, to a fine or imprisonment for a period not exceeding 5 years or to both a fine and such imprisonment (10 years for second conviction)"
- In addition, if anyone is convicted of an offence under the act which has resulted in harm, loss or damage to any other person, the court may award damages to be paid by the accused or convicted
- NWA Section 154: Makes provision that it's not only the applicant that may be liable but also an employee or agent acting on their behalf
- In terms of the MPRDA, Section 98, any person is guilty of an offence if he or she fails to comply with the requirements of the issued mining permit
- MPRDA Section 99 (1a): any person convicted of an offence in terms of the MPRDA is liable to a fine not exceeding R100, 000 or to imprisonment to a period not exceeding 2 years or to both such fine and imprisonment.

It is recommended that a procedure for non-compliances (i.e. incentives or disincentives for conformance and non-conformance with the EMPR requirements) must be employed to ensure that the EMPR is adequately implemented. The system to be used must be determined before mining commences, included in the tender documents and contracts, and made clear to all project workers. The system may include that the independent ECO can be authorised to impose spot fines on the Contractor and/or his subcontractors for any of the transgressions detailed below:

- Littering on site
- Lighting of illegal fires on site
- Persistent or un-repaired oil leaks
- Any persons, vehicles or equipment related to the Contractor's operations found within the designated "No – go" areas
- Any vehicles being driven in excess of designated speed limits
- Removal and/or damage to fauna, flora or heritage objects on site
- Legal contraventions

Such fines should be issued in addition to any remedial costs incurred as a result of non-compliance with the Environmental Specifications and or legal obligations.

(a) 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)

The maps below have been presented utilizing existing GIS information and databases from the Department of Water and Sanitation, and SANBI BGIS. The Department of Water and Sanitation has made provision of the rivers and NFEPA wetland databases. This data has been superimposed to the prospecting area to identify the wetlands and rivers present on site. A 32 m buffer has been created for the rivers and a 500m regulated buffer has been created for the wetlands.

Based on this information, the drill holes have been strategically placed out of the buffer zones with the aim of reducing the impacts of the drilling activity within the watercourses.

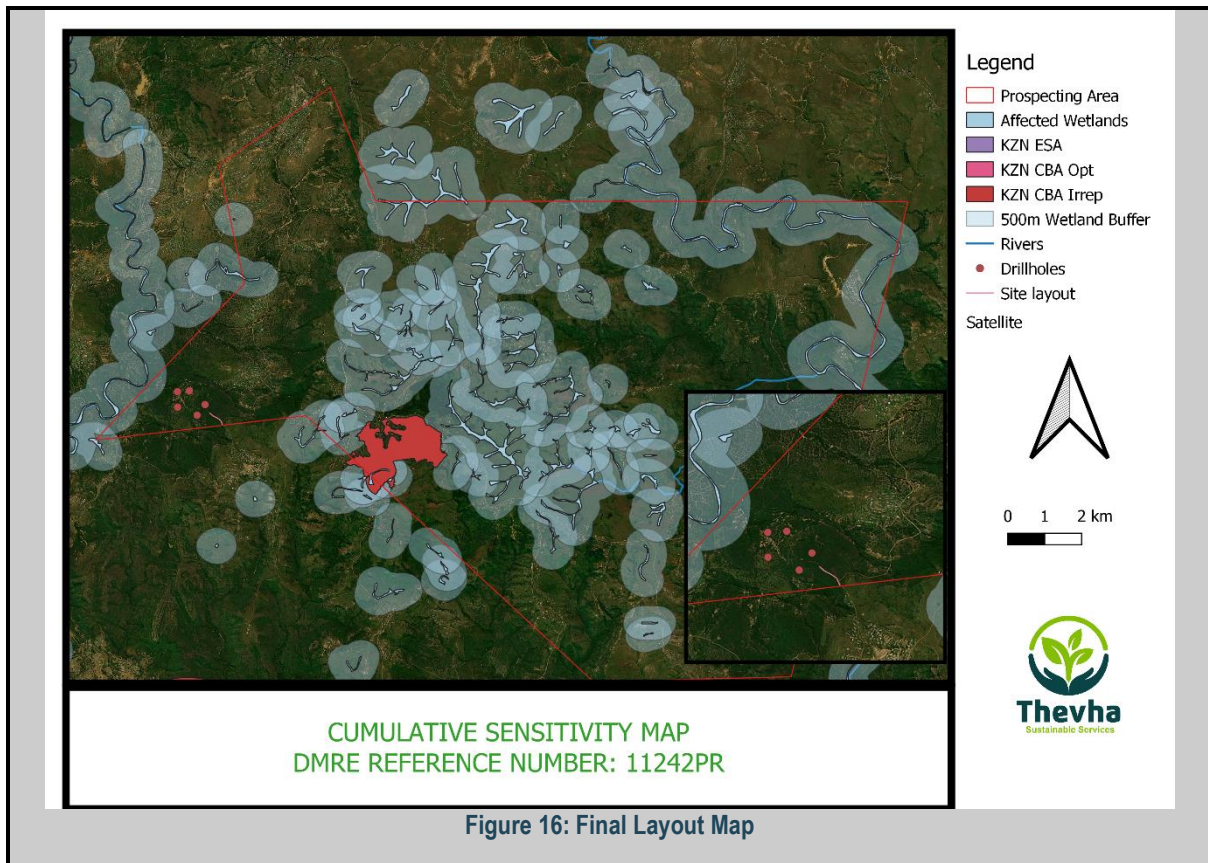


Figure 16: Final Layout Map

4. Description of Impact management objectives including management statements

The following are the closure objectives, general principles and objectives guiding closure of the Prospecting areas closure planning:

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

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

The vision, and consequent objective and targets for rehabilitation, decommissioning and closure, aim to reflect the local environmental and socio-economic context of the project, and to represent both the corporate requirements and the stakeholder expectations.

The receiving environment within which the prospecting activities will be undertaken includes the following key land uses:

Concerns raised by the stakeholders consulted during the public participation process for the basic assessment have been taken into consideration and included in the final BAR and EMPr.

In practice the post closure land-use will depend on the pre-prospecting land-use applicable to the specific location of the invasive prospecting activities. Considering that the exact locations of the planned prospecting have been identified and assessed, it can be said that the closure plan will sufficiently address the objectives for the preferred alternative. This EMP does, however, aim to address the key closure objectives which are likely to remain consistent for the majority of the prospecting activities.

The EMPr includes a monitoring and a rehabilitation plan. The plan shall outline the closure objectives which are aimed at reinstating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate.

The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives.

- Making the area safe. i.e. decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
- Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to recreate as close as possible the original topography and to ensure a free draining landscape.
- Re-vegetation. This involves either reseeded or allowing natural succession depending on the area, climate etc.
- Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. e.g. cut off drains, berms etc. and erosion control where required.
- Verification of rehabilitation success. Entails monitoring of rehabilitation.
- Successful closure. Obtain closure certificate

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

Process water supply for the operation will be sourced from water service providers and will be carted onto the site in a tanker. A 2000-liter water cart will be adequate for the size of this operation. The water will be used for dust suppression of access roads. Dust suppression will be conducted as and when necessary. No water will be abstracted in terms of section 21(a) of the National Water Act, 1998 (Act no. 36 of 1998)..

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

No water use licence has been applied for as part of this Prospecting Right application; in the event that an application is applicable it will be confirmed with the Department of Water and Sanitation (DWS) prior to commencement of the invasive prospecting activities that require water and should any of the National Water Act (NWA) Section 21 water uses become applicable, then the Applicant will need to apply for the relevant water uses from the DWS prior to undertaking such activities.

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	Potential impact	Aspects affected	Phase	Mitigation type
Site clearance	<ul style="list-style-type: none"> • Interference with existing land uses • Disturbance/damage/destruction of the Grave Sites • Sense of place • Fugitive dust emissions • Noise • Loss and fragmentation of the vegetation Community • Disturbance/damage/destruction of heritage sensitive areas • Increased runoff and sedimentation • Degradation and/or destruction of wetland habitats • Contamination of surface and ground water • Displacement of landowners and livestock 	<ul style="list-style-type: none"> • Topography • Soil • Air quality • Groundwater • Social • Ecology • Wetlands • Noise • Heritage 	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)
Storage of construction vehicles	<ul style="list-style-type: none"> • Soil compaction • Contamination of surface and ground water • Spillage of oils, fuels and chemicals • Soil contamination/pollution 	Surface water Groundwater Soils	Construction Operation	Avoid through implementation of EMP mitigation measures Control through implementation of ESMS

Activity	Potential impact	Aspects affected	Phase	Mitigation type
Transportation to and from drill and trench sites	<ul style="list-style-type: none"> • Soil compaction • Loss and fragmentation of the vegetation • community • Fugitive dust emissions • Noise • Spillage of oils, fuels and chemicals 	Ecology Air quality Noise Pollution Soil	Construction Operation	Avoid through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)
Storage of hazardous substances	<ul style="list-style-type: none"> • Spillage of oils, fuels and chemicals 	Surface water Groundwater Soil Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures
Waste management	<ul style="list-style-type: none"> • Generation and disposal of waste 	Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures
Refuelling	<ul style="list-style-type: none"> • Spillage of oils, fuels and chemicals • Surface water and groundwater contamination • Soil contamination/pollution 	Pollution Groundwater Soil	Construction Operation	Control through implementation of EMP mitigation measures
Rehabilitation	<ul style="list-style-type: none"> • Encroachment and displacement of an indigenous and vulnerable vegetation community by alien invasive species, potential re-establishment of natural species that were removed, the nature of 	Topography Land use Soil Ecology Heritage	Rehabilitation	Control through implementation of EMP mitigation measures

Activity	Potential impact	Aspects affected	Phase	Mitigation type
	<p>the erosion will depend on the amount of successful vegetation establishment</p> <ul style="list-style-type: none"> • Soil instability • Increased runoff and sedimentation • Soil pollution/contamination • Disturbance/damage/destruction of heritage sensitive areas • Disturbance/damage/destruction of the Grave 			
<p>Fossil Chance Find Protocol</p>	<ul style="list-style-type: none"> • 		<p>Construction/operational</p>	<ul style="list-style-type: none"> ▪ The following procedure is only required if fossils are seen on the surface or below the surface when excavations/mining commence. ▪ When excavations begin the rocks and must be given a cursory inspection by the geologist on site, environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the mining activities will not be interrupted. ▪ Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures. ▪ Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. ▪ If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible. ▪ Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a

Activity	Potential impact	Aspects affected	Phase	Mitigation type
				<ul style="list-style-type: none">▪ SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.▪ If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary. If no fossils are found and the excavations have finished then no further monitoring is required.

i) Financial Provision

1) Determination of the amount of Financial Provision.

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

Regulations pertaining to the pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147) were promulgated on the 20th of November 2015.

Gatlimip has undertaken the financial provision determination in line with the requirements of section 11 of the Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The financial provision determination for the proposed project is submitted to the Department of Mineral Resources for their consideration.

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

Considering the relatively limited impact of the proposed prospecting activities, the closure objectives are aimed at re-instating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate. The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives

1. Making the area safe. i.e., Decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
2. Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to re-create as close as possible the original topography and to ensure a free draining landscape.
3. Re-vegetation. This involves either reseeded or allowing natural succession depending on the area, climate, etc.
4. Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. e.g., cut off drains, berms etc. and erosion control where required.
5. Verification of rehabilitation success. Entails monitoring of rehabilitation.
6. Successful closure. Obtain closure certificate.

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

The Public Participation Process (PPP) is a requirement of several pieces of the South African legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study.

The PPP which forms part of the Prospecting Right application needs to be managed sensitively and according to best practises in order to ensure and promote:

- Compliance with national legislation.
- Establish and manage relationships with key stakeholder groups.

- Encourage involvement and participation in the environmental study and authorisation/ approval process.

As such, the purpose of the PPP and stakeholder engagement process is to:

- Introduce the proposed project.
- Explain the environmental authorisations required.
- Explain the environmental studies already completed and yet to be undertaken (where applicable).
- Determine and record issues, concerns, suggestions and objections to the project.
- Provide opportunity for input and gathering of local knowledge.
- Establish and formalise lines of communication between the I&APs and the project team.
- Identify all significant issues for the project.
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent negative environmental impacts and maximise and/or promote positive environmental impacts associated with the project.

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

The main aim in developing this rehabilitation plan is to mitigate the impacts caused by the prospecting activities and to restore land back to a satisfactory standard. It is best practice to develop the rehabilitation plan as early as possible so as to ensure the optimal management of rehabilitation issues that may arise. It is important that the project's closure plan is defined and understood before starting the process and is complementary to the rehabilitation goals. Rehabilitation and closure objectives need to be tailored to the project and be aligned with the EMP. The overall rehabilitation objectives for this project are as follows:

- Maintain and minimise impacts to the ecosystem within the study area.
- Re-establishment of the pre-developed land capability to allow for a suitable post-mining land use.
- Prevent soil, surface water and groundwater contamination.
- Comply with the relevant local and national regulatory requirements.
- Maintain and monitor the rehabilitated areas.

Successful rehabilitation must be sustainable, requires an understanding of the basic baseline environment and project management to ensure that the rehabilitation program is a success. It is noted that an application for environmental authorisation must be submitted for closure in accordance with

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 28 of 2002).
- A prospecting right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.

LANDFORM DESIGN, EROSION CONTROL AND REVEGETATION

Landform, erosion control and re-vegetation is an important part of the rehabilitation process. Landform and land use are closely interrelated, and the landform should be returned as closely as possible to the original landform.

Community expectations, compatibility with local land use practices and regional infrastructure, or the need to replace natural ecosystems and faunal habitats all support returning the land as closely as possible to its original appearance and productive capacity. This requires the following:

- Shape, level and de-compact the final landscape after removing all the project infrastructure, dress with topsoil and, where necessary, vegetate with indigenous species. Commission specialists to assist in planning re-vegetation and the management of environmental impact, as required.
- Remove access roads with no beneficial re-use potential by deep ripping, shaping and levelling after the removal and disposal of any culverts, drains, ditches and/or other infrastructure. Natural drainage patterns are to be reinstated as closely as possible.
- Shape all channels and drains to smooth slopes and integrate into the natural drainage pattern.
- Construct contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation.
- Promote re-vegetation through the encouragement of the natural process of secondary succession.

- Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the borehole sites), so as to encourage the establishment of pioneer vegetation.
- Remove alien and/or exotic vegetation.
- Undertake a seeding programme only where necessary, and as agreed with the re-vegetation specialist.

POST-CLOSURE MONITORING AND MAINTENANCE

Prior to decommissioning and rehabilitation activities, a monitoring programme shall be developed and submitted to the relevant authority for approval, as a part of the Final Rehabilitation Plan. The programme is to include proposed monitoring during and after the closure of the prospecting borehole sites and related activities. It is recommended that the post-closure monitoring include the following;

- Confirmation that any waste, wastewater or other pollutants that is generated as a result of decommissioning will be managed appropriately, as per the detailed requirements set out in the Final Rehabilitation Plan.
- Confirmation that all de-contaminated sites are free of residual pollution after decommissioning.
- Confirmation that acceptable cover has been achieved in areas where natural vegetation is being re-established. 'Acceptable cover' means re-establishment of pioneer grass communities over the disturbed areas at a density similar to surrounding undisturbed areas, non-eroding and free of invasive alien plants.
- Confirmation that the prospecting borehole sites are safe and are not resulting in a pollution hazard.

Annual environmental reports will be submitted to the Designated Authority and other relevant Departments for at least one-year post-decommissioning. The frequency and duration of this reporting period may be increased to include longer term monitoring, at intervals to be agreed with the Designated Authority.

The monitoring reports shall include a list of any remedial action necessary to ensure that infrastructure that has not been removed remains safe and pollution free and that rehabilitation of project sites are in a stable, weed and free condition.

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

The closure plan will assist the proposed mining operation to achieve the following objectives:

- Comply with relevant legislation and policy requirements with regards to mine rehabilitation.
- Avoid or mitigate impacts associated with the project which may be detrimental to the environment.
- Land rehabilitation to a predetermined and agreed upon state that allows sustainable land use and capability of the site, that is to return the site to the condition that existed prior to mining or an agreed upon state.
- Cost effective and efficient closure of mining operations.
- Management and monitoring of the area post-closure.

The rehabilitation plan will thus be aligned to the closure objectives and tailored to the project to achieve these objectives. It will include information about the site prior to the mining operation and provide information on the maintenance of resources required for the rehabilitation process, as well detail how rehabilitation will be undertaken. It will also provide information on the management and monitoring of disturbance to avoid or minimise detrimental impacts, as well as an estimate of the financial closure provision. It will also include information associated with post-closure environmental monitoring of the site to ensure that the rehabilitation plan is followed, and its objectives are achieved.

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

Refer to Section 20.1 of the BAR for a detailed breakdown.

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

Gatlimip has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

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

The result of environmental monitoring and compliance to the approved EMPR will be undertaken annually and submitted to the DMR in the form of an environmental performance assessment. Included in the report will be the following relevant information:

- The period when the performance assessment was conducted.
- The scope of the assessment.
- The procedures used for conducting the assessment.
- Interpreted information gained from monitoring the EMPR.
- Evaluation criteria used during the assessment.
- Results of the assessment are to be discussed and mention must be made of any gaps in the EMPR and how it can be rectified.
- Yearly updated layout plans.

Any emergency or unforeseen impacts will be reported immediately to the DMR and other relevant government departments.

m) 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.

The Applicant and Contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner and are capable of complying with the relevant environmental requirements. To obtain buy-in from staff, individual employees need to be involved in:

- Identifying the relevant risks.
- Understanding the nature of risks
- Devising risk controls.
- Given incentive to implement the controls in terms of legal obligations.

Training and/or awareness should be raised and effectively communicated prior to the commencement of the prospecting activity. Training sessions should incorporate the management plans addressed in the EMPR as well as any new information and documentation.

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

Environmental awareness could be fostered by induction course for all personnel on site, before commencing site visits. Personnel should also be alerted to particular environmental concerns associated with their tasks for the area in which they are working. Courses must be given by suitably qualified personnel and in a language and medium understood by personnel. The environmental awareness training programme will include the following:

1. Occupational Health and Safety Training (OHS).
2. Environmental Awareness Training EMPR management actions.

Environmental awareness training will focus on the following specific aspects and be undertaken in "Tool box talk" topics prior to site access:

1. Waste collection and disposal.
2. EMPR management options and application.

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

The following measures are provided to control any causes of pollution or degradation during the prospecting activities.

- Contain potential pollutants and contaminants (where possible) at source.
- Handling of potential pollutants and contaminants (where possible) must be conducted in bunded areas and on impermeable substrates.
- Ensure the timeous clean-up of any spills.
- Implement a waste management system for all waste stream present on site.
- Investigate any I&AP claims of pollution or contamination as a result of mining activities.

n) Specific information required by the Competent Authority
(Among others, confirm that the financial provision will be reviewed annually).

No specific information requirements have been made by the Competent Authority at this stage.

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.



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Signature of the environmental assessment practitioner:

THEVHA SUSTAINABLE SERVICES (PTY) LTD
Name of company:

23rd May 2023
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Date: