

# BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT.

PROPOSED PROSPECTING RIGHT APPLICATION FOR COAL ON ALL PORTIONS OF  
THE FARM BERGVLEI 192 HT AND LA BELLE ESPERANCE 191 HT, MAGISTERIAL  
DISTRICT OF MKHONDO(PIET RETIEF & WAKKERSTROOM), MPUMALANGA  
PROVINCE

**DMRE REF: MP 30/5/1/1/2/ (17338) PR**

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**mineral resources  
& energy**

Department:  
Mineral Resources and Energy  
REPUBLIC OF SOUTH AFRICA

## **BASIC ASSESSMENT REPORT**

**AND**

## **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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

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## DOCUMENT CONTROL

**Project Title:** Prospecting Right Application on all portions of the farm Bergvlei 192 HT and La Belle Esperance 191 HT

**Minerals** Coal

**Site Location** Magisterial district of Mkhondo ( Piet Retief & Wakkerstroom), Mpumalanga Province

**Compiled on behalf of** Mashige Building Construction and Consultant

**Compiled By** Mr Abel Mojapelo

**Reviewed By** Dr Kenneth Singo

**Version 1** Draft BAR & EMPr

**Submitted to** Department of Mineral Resources and Energy

**Date** 2022



## 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 (EIA) and an Environmental Management Programme report (EMPr) 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;
    - (bb) May cause irreplaceable loss of resources; and
    - (cc) Can be managed, avoided or mitigated;
- (e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
  - (i) Identify and motivate a preferred site, activity and technology alternative;
  - (ii) Identify suitable measures to manage, avoid or mitigate identified impacts; and
  - (iii) (iii) Identify residual risks that need to be managed and monitored.



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Geophysical surveys, and drilling are the only major methods used in exploring deposits of this type and also for resource definition and evaluation. The technology to be used cannot be replaced by any other methods thus these are the preferred activities. ....	
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There is no site or layout alternative as the property provides the ideal geological formation for the presence of the mineral applied for. The positioning of the boreholes is determined by the expected location of the mineral reserve. ....	
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## PART A

### 1. SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

#### 1.1 Contact Person and Correspondence Address.

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#### i) Expertise of the EAP

(1) The qualifications of the EAP

(see Appendix B)

(2) Summary of the EAP's past experience (In carrying out the Environmental Impact Assessment Procedure)

#### **Dr Kenneth Singo Ph. D (Geology) Pr. Sci, Reg. EAP (EAPASA)**

Dr. Singo is a Principal Consultant (Earth Science), and REAP (EAPASA) in the Mining, Agricultural and Construction sector and currently works for Singo Consulting, an advisory firm based in eMalahleni. He has over 11 years' experience in diverse areas of natural resources including Geology, Geochemistry and Environmental Geochemistry. He is a coal expert with



extensive experience of the Waterberg, Soutpansberg, Witbank, Highveld, and Springbok flats, as well as the Tete (Moatize) coalfield in Mozambique.

Kenneth holds an MSc in Environmental Geochemistry (University of South Africa (UNISA)), BSc (Hons) in Mining and Environmental Geology (the University of Venda), and Ph.D. (Geology, Applied Environmental Mineralogy and Geochemistry) at the University of Johannesburg.

Dr. Singo has knowledge of Mine Water and Mine Environmental Management (acid mine drainage, heavy metal assessments and tailings management) in various commodities including coal, gold, magnesite and base metals (Cu, Pb, Zn). He has extensive knowledge of defunct mining waste and wastewater impact assessments in communities residing in the vicinity of those mines. This knowledge was gained through MSc. Kenneth has sound knowledge of risk assessment, both in terms of human health and the environment. He is experienced in the appraisal of potential constraints, as well as devising means of mitigation through remedial strategy development, feasibility and validation.

During his PhD studies, Dr. Singo has learned how to operate within contaminated lands. His PhD largely focused on disused mines (gold, copper and magnesite) ranging from Phase I and Phase II investigations to development of remedial strategies (i.e. Phase III). His PhD further equipped him to intensively understand the waste classification, profiling and understanding of the implications associated with the management of waste, landfill disposal profiling and development of beneficiation strategies.



## b) Location of the overall Activity

The following table presents the location and associated cadastral details associated with the area in question.

**Table 1: Location Details**

<b>Farm Name:</b>	All portions of the All portions of the farm Bergvlei 192 HT and La Belle Esperance 191 HT
<b>Application area (Ha)</b>	3058,345 Hectares
<b>Magisterial district:</b>	Mkhondo (Wakkerstroom & Piet Retief)
<b>Distance and direction from nearest town</b>	approximately 13.19 km Northwest of Dirkiesdorp
<b>21-digit Surveyor General Code for each farm portion</b>	TOHT00000000019200001 TOHT00000000019200003 TOHT00000000019100000 TOHT00000000019100001 TOHT00000000019100002 TOHT00000000019200004 TOHT00000000019200002



c) Locality map (show nearest town, scale not smaller than 1: 250,000)

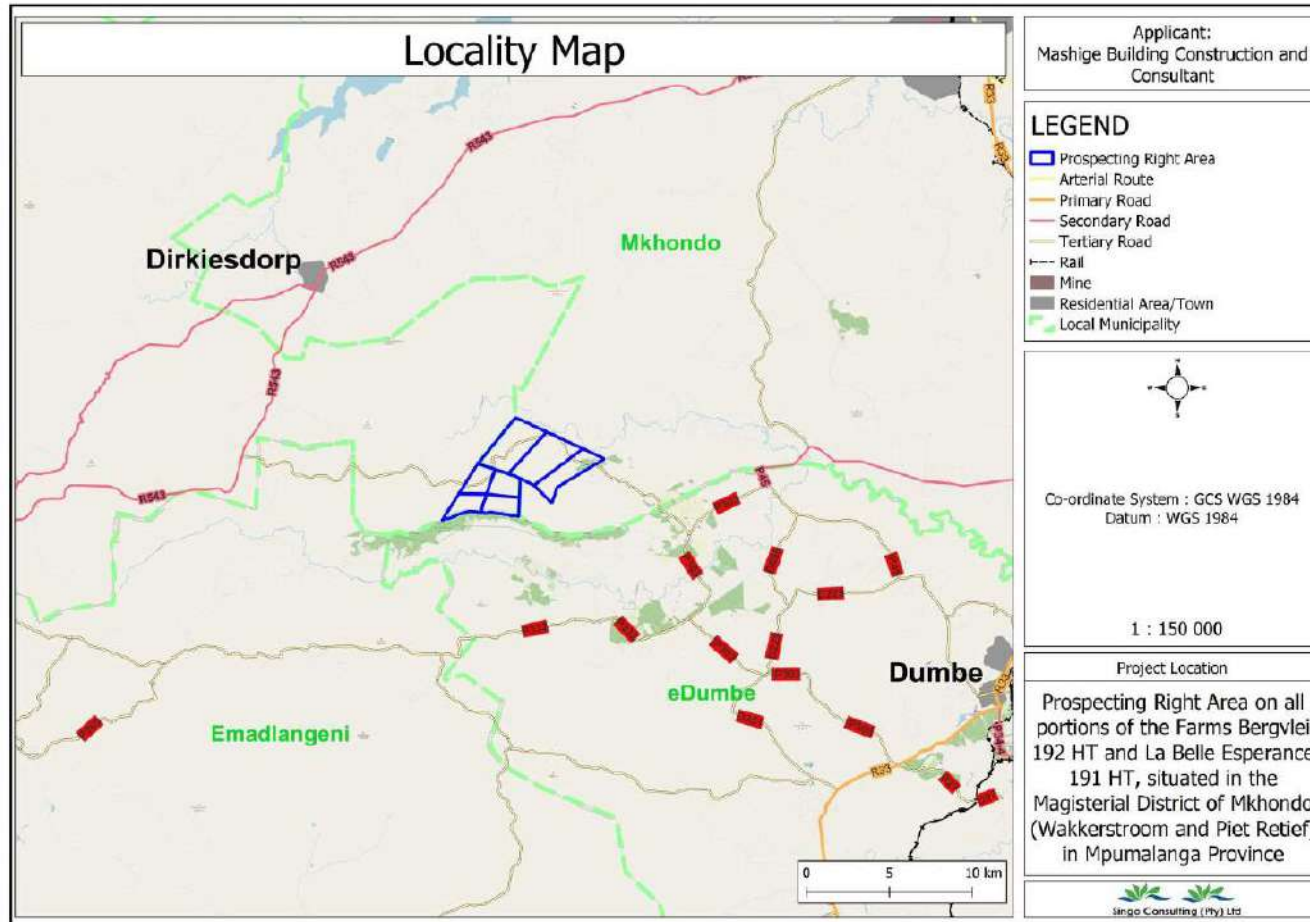


Figure 1: Show the locality map of the proposed area.

The town of Piet Retief is located at approximately 235 km South-East of eMalahleni, Piet Retief is a commercial and agricultural town lying on the banks of Vaal River in Mpumalanga province which specialises in dairy, cattle, maize, poultry farming and mining (Mica, Kaolin and iron ore). The proposed area can be accessed using gravel/Unpaved roads from the R543 as depicted in the figure above.

#### **d) Description of the scope of the proposed overall activity**

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

The detailed geology of Coal potential of the area is relatively known, and as such exploration work will commence from a very advanced level. The Prospecting Work Programme was therefore designed in phases, each phase conditional on the success of the previous phase and will include:

##### **Phase 1: Data acquisition and a Desktop study**

A desktop study of all available data for the area will be undertaken to accumulate as much regional and historical data around the area as possible. This includes published geological reports, infrastructure mapping, satellite imagery and existing geophysical information (if available).

##### **Phase 2: Drilling**

Targets that have been prioritised through detailed desktops will be tested by initial diamond or percussion drilling. Prospecting Timeframes and Activities.

It should be noted that no bulk sampling will be undertaken as part of this Prospecting Work Programme. Should the initial evaluation of the deposit indicate a sufficient size and grade, bulk sampling may be required in this event, the Prospecting Work Programme will be amended, and a new Environmental Authorisation Process will be required for submission to the DMRE. The activities associated with the Prospecting Work Programme will be scheduled over a period of five years as is detailed in the following table:

**Table 2: Timeframes and Activities.**

Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
<b>Phase 1: Invasive Prospecting</b>						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 1 (30 days)	Borehole core data coal samples Rock core samples	Month 1	Exploration Geologist
	Sampling	Exploration Geologist		Core analyses Rock core analyses	Month 2 – 3	Laboratory analyst
<b>Phase 1: Non-invasive Prospecting</b>						
	Consultations with landowners	Land Tenure Specialist	Month 1	Legal Access Agreement	Month 1	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 7-8	Stratigraphic correct borehole data Analytical correct borehole data	Month 8 – 10 Month 8 - 10	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and Coal quality modelling	Exploration Geologist	Month 10-12	Contour maps Reserve breakdown	Month 10-12	Exploration Geologist /Modeller
	Inspection/Consultation with landowners	Land Tenure Specialist /Drilling contractor	Month 5-6	Rehabilitation clearance certificate	Month 5 - 6	Land Tenure Specialist / Environmental officer
<b>Phase 2: Invasive Prospecting</b>						



	Diamond drilling (5 borehole)	Exploration Geologist	Month 13	Borehole core data Coal core samples  Rock core samples Core analyses Rock core analyses	Month 13  Month 13-14	Exploration Geologist Laboratory analyst
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 13-15	Lithology data Structural data	Month 13-14	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 13-14	Borehole water yield Water samples	Month 17-20	Geohydrologist
<b>Phase 2: Non-invasive Prospecting</b>						
	Consultation with landowners	Mining Rights officer	Month 12	Legal Access Agreement	Month 12	Land Tenure Specialist
<b>Phase</b>	<b>Activity</b>	<b>Skill(s) required</b>	<b>Timeframe</b>	<b>Outcome</b>	<b>Timeframe for outcome</b>	<b>What technical expert will sign off on the outcome?</b>
	Data processing and validation	Exploration Geologist	Month 17-18	Stratigraphic correct borehole data Analytical correct borehole data	Month 20 – 22 Month 20 - 22	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and coal quality modelling	Exploration Geologist	Month 22-24	Contour maps Reserve breakdown	Month 22-24	Exploration Geologist /Modeler
	Inspection/Consultation with landowners	Mining Rights officer	Month 16-17	Rehabilitation clearance certificate	Month 16 - 17	Land Tenure Specialist / Environmental officer

<b>Phase 3: Invasive Prospecting</b>						
	Diamond drilling (5 borehole)	Exploration Geologist	Month 25	Borehole core data Coal core samples  Rock core samples Coal core analyses Rock core analyses	Month 25  Month 25-60	Exploration Geologist  Laboratory analyst
	Directional drilling (Optional)	Exploration Geologist	Month 24-30	Lithological data	Month 24-60	Exploration Geologist
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 25-27	Lithology data Structural data	Month 25-60	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 25-26	Borehole water yield Water samples	Month 29-60	Geohydrologist
<b>Phase 3: Non-invasive Prospecting</b>						
	Consultation with landowners	Mining Rights officer	Month 24	Legal agreement	Month 24	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 29-30	Stratigraphic correct borehole data Analytical correct borehole data	Month 32 – 60 Month 32 - 60	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and Coal	Exploration Geologist	Month 34-36	Contour maps Reserve breakdown	Month 34-60	Exploration Geologist /Modeler
	Inspection/consultation with landowners	Land Tenure Specialist	Month 28-29	Rehabilitation clearance certificate	Month 28 - 60	Land Tenure Specialist / Environmental officer

As is clear from the information provided above, each of the phases is dependent on the results of the preceding phase. The location and extent of drill sites, and possible diamond drilling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. In the subsequent sections (Section ii) more details are provided in terms of each of the prospecting activities.

The applicant must submit a plan indicating the location of drilling activities, once these areas have been finalized to at least all landowners, as well as the Department of Mineral Resources and Energy and the Department of Water and Sanitation.

## 2. Listed and specified activities

Please refer to the following table for the details in terms of the listed activities.

**Table 3: Listed and specified Activities.**

<b>NAME OF ACTIVITY</b>  <b>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc. E.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</b>	<b>Aerial extent of the Activity</b> <b>Ha or m<sup>2</sup></b>	<b>LISTED ACTIVITY</b>  (Mark with an <b>X</b> where applicable or affected).	<b>APPLICABLE LISTING NOTICE</b>  <b>GNR 517, 11 June 2021</b>	<b>WASTE MANAGEMENT AUTHORISATION</b>  (Indicate whether an authorisation is required in terms of the Waste Management Act). <b>(Mark with an X)</b>
Prospecting Area	3058.354 ha  $9000\text{m}^2 \div 10000 = 0.9\text{ha}$ $30 \times 20 = 600\text{m}^2$ 15 boreholes* $600\text{m}^2 = 9000\text{m}^2$	<b>X</b>	GNR Listing 517 Notice 1, Activity 20.	Not required
Vegetation clearing	0.9 ha		Not Listed	
Drilling	0.9 ha		Not Listed	
Access Road	6333,69m <sup>2</sup>		Not Listed	

### 2.1 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 following section presents a detailed description of all the activities associated with the proposed Prospecting Application. Due to the nature of the Prospecting Work Programme, and the fact that the specific prospecting activities required are dependent on the preceding phase, assumptions are presented where required. These assumptions are based on similar projects undertaken by the Applicant and therefore be regarded as indicative of what will be undertaken.

### **2.1.1 Access Roads**

Access to the site will be required during pegging of holes, and drilling activities (Phase 2 and 3). Access requirements can only be determined after Phase 1 has been concluded. Several existing roads and tracks already traverse the proposed prospecting site and where practicable, these roads will be used. During pegging activities, vehicle access will have gained to site through the veld and the establishment of a track to gain repeated access to a borehole site will not be required. Once drill sites have been identified, temporary access roads may be established for repeated access to the drill site if the identified drill site cannot be access via existing roads and tracks.



**Figure 2: Access Road (R543) passing through the project area.**

### **2.1.2 Water Supply**

Drilling mechanisms to be employed utilises air instead of water hence water will only be required for drinking purposes by personnel on site. A temporary storage tank will be on site to provide potable water for drinking and general use. This water will be purchased from water retailers in water containers. Best practice guidelines will be enforced throughout the duration of the prospecting activities to ensure that any potential pollution on water bodies is prevented. Proof of service level agreement between the applicant and the water service provider must be submitted to the DWS prior the commencement of the proposed development.

### **2.1.3 Ablution**

Chemical mobile toilets will be made available on site for ablutions. These toilets will be serviced as required by a contractor. No washing facilities will be provided on site. A letter of agreement between the applicant and the contractor will be sent to the Department of Water and Sanitation prior the commencement of the activity. The figure below depicts an example of chemical toilet that will be used on site.



**Figure 3: Typical example of a mobile toilet.**

### **2.1.4 Temporary Office Area**

A Gazibo will be used as a temporary site office (shade) at the drill sites. No on-site electricity generation using generators will be undertaken. Meals will be provided to the workers and

Staff as no heating and / or cold storage facilities will be available. A shaded eating area will be provided.



**Figure 4: Gazibo used as temporary site shade.**

#### **2.1.5 Accommodation**

No accommodation for workers and staff will be provided on-site and all persons will be accommodated in nearby towns (i.e. Piet Retief). Workers and staff will be transported to and from the prospecting site daily. Night security staff will be employed once equipment has been established on site.

#### **2.1.6 Blasting**

As the Prospecting Work Programme does not allow for bulk sampling, no blasting will take place.

#### **2.1.7 Storage of Dangerous Goods**

During drilling activities limited quantities of diesel fuel, oil and lubricants will be stored on site. The only dangerous goods that will be stored in any significant quantity is diesel fuel. A maximum amount of 1000L will be stored in above ground in a diesel tanker trailer.



**Figure 5: Portable diesel storage**

### **3. Detailed Prospecting Activities.**

#### **Phase 1: Data acquisition and a Desktop study**

A desktop study of all available data for the area will be undertaken to accumulate as much regional and historical data around the area as possible. This includes published geological reports, infrastructure mapping, satellite imagery and existing geophysical information will be targeted.

#### **Phase 2: Drilling**

Targets generated during the desktop study will be investigated on the ground and tested by initial diamond or percussion drilling. A drilling program will be undertaken to delineate and give a preliminary assessment of the Coal potential of the deposit identified. Should delineation and initial evaluation of the deposit indicate a sufficient size and grade to warrant further evaluation, an appropriate bulk sampling program will be undertaken to establish grade and confirm its viability for mining.





Figure 6: Typical example of air flush drilling machine with the drill bits.



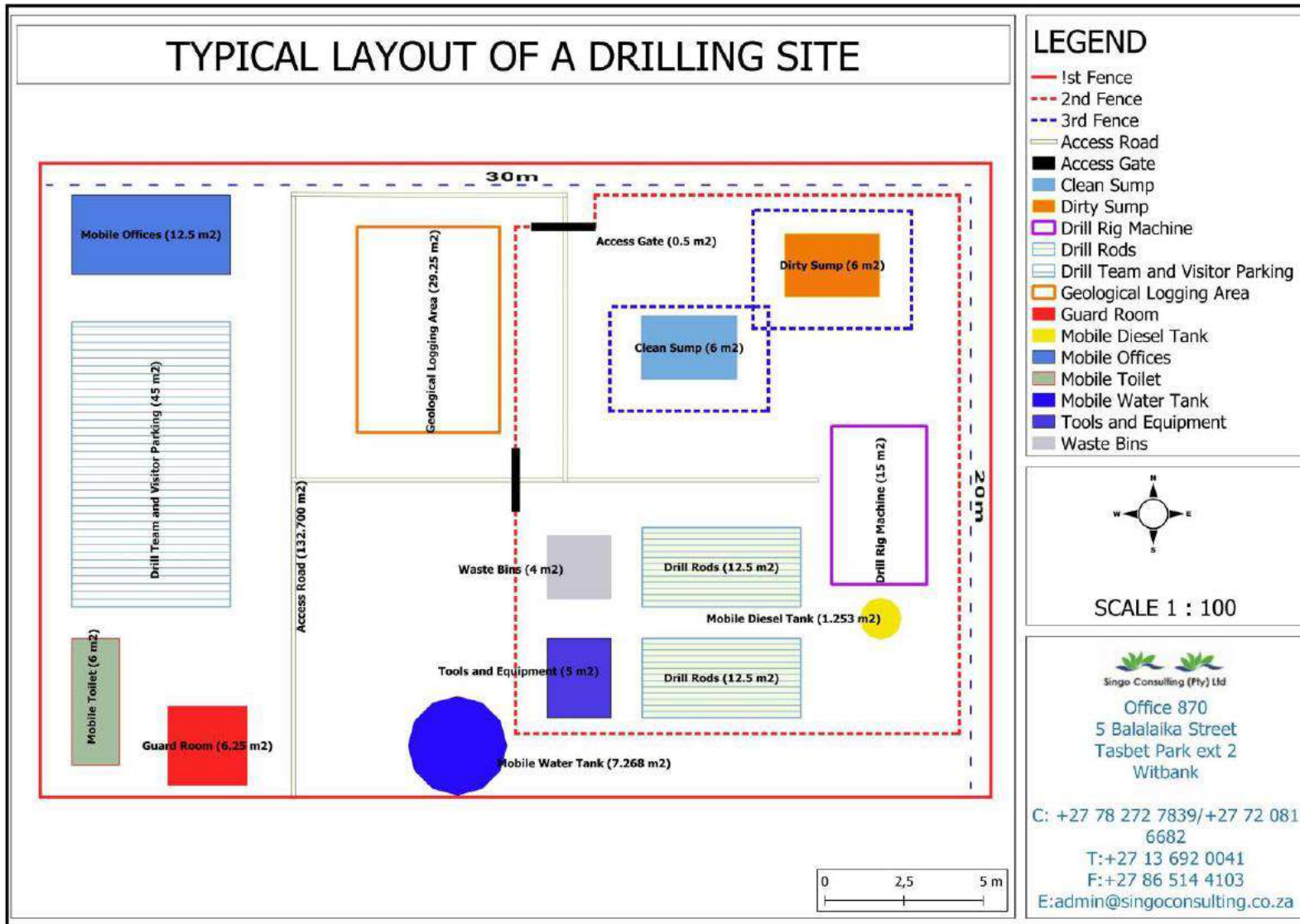


Figure 7: Shows the typical layout plan that will be employed during the activity.

## e) Policy and Legislative Context

Table 4: Policy and Legislative Context.

Applicable Legislation and Guidelines	Reference Where Applied (i.e. where in this document has it been explained how the development complies with and responds to the legislation and policy context)	How does this Development Comply with and Respond to the Legislation and Policy Context
<b>National Environmental Management Act (No. 107 of 1998)(NEMA):</b>	This entire report is prepared as part of the prospecting right application under the NEMA, section 24	In terms of the National Environmental Management Act an Application for Environmental Authorisation subject to a Basic Assessment Report and Environmental Management Programme Report. The application was lodged at the DMRE
<b>Minerals and Petroleum resources Development Act (No.28 of 2002) (MPRDA): In support of the Prospecting Right Application submitted by Mashige Building Construction and Consultant, the applicant is required to conduct a NEMA BAR process in terms of Section 5A and Chapter 16 of the MPRDA.</b>	This entire report is prepared as part of the Prospecting Right Application under the MPRDA, section 16.	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for coal resource. DMRE Ref: <b>MP 30/5/1/1/2/(17338) PR</b>
<b>National Water Act (No. 36 of 1998) (NWA): Water may not be used without prior authorisation by the DWS. Section 21 of the National Water Act (No.36 of 1996) the NWA water uses for which authorisation is required.</b>	No Water Use Licence has been applied for this prospecting project.	No water use license is required for this Application. Any water required for drilling activities will be obtained from a legal source within the area or brought in via mobile water tanker. Appropriate dust extractions /suppression equipment will be a condition imposed on the drill contractor for their drill rigs.
<b>The National Environmental Management: Biodiversity Act (Act No. 10 of 2004 – NEMBA) Section 57 and 87</b>	Regulations published under NEMBA provides a list of protected species (flora and fauna), according to the Act (GN R. 151 dated 23 February 2007, as amended in GN R. 1187 dated 14 December 2007) which require a permit in order to be disturbed or destroyed	No applications have been submitted in terms of the National Environmental Management: Biodiversity Act.
<b>Mkhondo Local Municipality Integrated Development Plan (IDP)</b>	Land Claims	This department was consulted to ensure that the project does not take place where there is a land claim the claimants not knowing about the project. In addition to acquire the claimant's information to consult them before the project

<p><b>Strategic Development Framework (SDF)</b></p>	<p>Alternatives</p>	<p>commence. No correspondence has been received.</p> <p>In terms with the SDF of the Mkhondo Local municipality, various strategies and associated policies should be adopted to ensure effective spatial development.</p> <p>The municipality must provide alternative means of support for rural/informal population in order to decrease dependence on the environment and subsistence agriculture. For this purpose, the following policies are adopted:</p> <p>Maximise economic benefit from mining industrial, business, agricultural and tourism development within the area.</p> <p>Promote a climate for economic development. Improve public and investor confidence in the region through crime reduction and infrastructure development.</p>
<p><b>Constitution of South Africa,</b>  <b>Specifically, everyone has the right:</b></p> <p><b>a) to an environment that is not harmful to their health or wellbeing; and</b></p> <p><b>b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that</b></p> <p><b>i) prevent pollution and ecological degradation;</b></p> <p><b>ii) promote conservation; and</b></p> <p><b>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</b></p>	<p>BAR &amp; EMPr</p>	<p>Prospecting activities will only proceed after effective consultation. All activities will be conducted in a manner that does not violate the Constitution of the Republic of South Africa.</p>
<p><b>National Heritage Resources Act, 1999</b></p>	<p>Management measures</p>	<p>Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be stopped, and SAHRA should be notified in order for an investigation</p>

		and evaluation of the find(s) to take place.
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#### 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).

**Table 5: Need and Desire.**

NEED AND DESIRABILITY OF THE PROPOSED PROJECT		
PART I: NEED		
Questions (Notice 792, NEMA, 2012)		Answers
1.	Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?	<p>Yes. prospecting is an integral part of its rationale to make use of the abundant natural resources in the area to create strong, resilient, and prosperous district.</p> <p>However, the objectives of the Mkhondo Municipality's integrated development plan for 2020/2021, section: re-generate – to achieve environmental well-being Fights with:</p> <ul style="list-style-type: none"> <li>• High carbon emissions from electricity generation;</li> <li>• Unsustainable natural resource usage; and</li> <li>• Uncontrolled pollution</li> </ul>
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	The planned activities would allow Mashige Building Construction and Consultants to extend mine life (LOM) for a large number of years and thus the benefits to local communities and South Africa as a whole for e.g. work provision and social upliftment would continue for a longer period.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	<p>According to the STATSA unemployment figure has drastically increased with 8600 jobs in the municipality between 2001 and 2011.</p> <p>The Mashige Building Construction and Consultant prospecting will have a positive impact on the socio-economic conditions of the local communities involved once operations commence. The prospecting will sustain the proposed areas and once the stage of mining has been reached, it will contribute to the socio-economic development of the region as a whole</p>

		through social upliftment and the creation of jobs as key agents.
4.	Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	Yes. All infrastructure for services and capacity is sufficient for the existing and proposed prospecting/drilling activities. The proposed project will be using flushed air instead of water. The road networks are fully intact and the project will not have a major impact on road congestion. Thus, additional capacity does not need to be created for the development.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of the services and opportunity cost)?	The development is not provided for in the infrastructure planning of the municipality as it is a small development of local importance. Thus, the proposed project will not have any implications for the infrastructure planning, as no services and/or infrastructure needs to be upgraded or created to cater for this project. The proposed project will be making use of mobile structures.
6.	Is the project part of a national programme to address an issue of national concern or importance?	The cited IDP indicates that the community sector contributed 37.1 % of all the sectors' contribution to the GDP of Mkhondo Local Municipality. Mining contributed 7.9% , Agriculture contributed 11.2 % trade/retail figure was at 13.6 % and construction contributed 2.9 %.
<b>PART II: DESIRABILITY</b>		
7.	Is the development the best practicable environmental option for this land/site?	Yes. Much of the region under review is undergoing transformed cultivation activities which have already had an impact on environmental management.
8.	Would the approval of this application compromise the integrity of the existing approved and credible IDP and SDF as agreed to by the relevant authorities?	Partially. The project is not completed in accordance with the Local Spatial Development System (SDF) and Integrated Development Plan (IDP) goals in terms of land use but does not compromise the credibility of these respective forward planning documents. In South Africa, as in Mkhondo , unemployment is a big problem and prospecting should be able to provide continuity of existing employment in the prospecting area for a substantial period of time.
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	No, the integrity of the existing environmental management priorities for the area will not be compromised by this development.

10.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	<p>In summary, due to the fact that this area has a high density of residents and also the military base, which is closer to the proposed area, the impacts on well-being, following mitigation, will be as follows:</p> <ul style="list-style-type: none"> <li>• Visual: Low</li> <li>• Dust: Low-Medium</li> <li>• Noise: Medium</li> <li>• Sense of place: Medium</li> </ul> <p>However, environmental good practice compliance policies would have limited effects.</p>
11.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	<p>No. The mining industry in South Africa has been a cornerstone of the economy for a long period of history. South Africa offers ongoing proof that mineral revenues can create sizeable benefits to the economy in countries where they are sourced. In South Africa coal and clay have contributed to funding impressive economic growth and stability.</p>
12.	Will the proposed land use result in unacceptable cumulative impacts?	<p>No. The proposed project has only been identified to have minimal cumulative impacts that can be mitigated to an acceptable level. The measures outlined in the EMP attached will serve as a method to keep the proposed project from having any serious long term cumulative impacts on the receiving environment.</p>

## 5. Motivation for the overall preferred site, activities and technology alternative.

### 5.1 Preferred Site

Geophysical surveys, and drilling are the only major methods used in exploring deposits of this type and also for resource definition and evaluation. The technology to be used cannot be replaced by any other methods thus these are the preferred activities.

There is no site or layout alternative as the property provides the ideal geological formation for the presence of the mineral applied for. The positioning of the boreholes is determined by the expected location of the mineral reserve.

There are no technology alternatives considered and the proposed site was identified as the preferred site due to the following reasons:

- The site offers the mineral sought after,

- Very little natural vegetation needs to be disturbed in order to establish the prospecting area.
- No residual waste as a result of the prospecting activity will be produced that needs to be treated on site. The general waste produced on-site will be contained in sealed refuse bins to be transported to the registered landfill site.
- As maintenance and servicing of the equipment will be done at an off-site workshop the amount of hazardous waste to be produced at the site will be minimal and will mainly be as a result of accidental oil or diesel spillages.
- Contaminated soil will be removed to the depth of the spillage and contained in sealed bins until removed from site by a hazardous waste handling contractor to be disposed of at a registered hazardous waste handling site.

### **Technological and Site Activity Alternatives**

Due to the nature of the proposed prospecting activities future land use alternatives will not be compromised. Once a viable reserve has been confirmed a comprehensive social and environmental impact assessment will be required (in accordance with legislation), during which time alternative land use to mining would be investigated.

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.

The location of intrusive drilling activities will be determined during Phase 1 of the Prospecting Works Programme. All infrastructures will be temporary and/or mobile.

### **5.2 Full description of the process followed to reach the proposed preferred alternatives within the site.**

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

Each of the phases are dependent on the results of the preceding phase. The location and extent of coal sampling, and possible core drilling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken.

The stakeholder consultation phase is ongoing, comments raised by I&APs are being incorporated in the BAR & EMPr.

## **6. Details of the development footprint alternatives considered.**

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

- a) The property on which or location where it is proposed to undertake the activity;
- b) The type of activity to be undertaken;
- c) The design or layout of the activity;
- d) The technology to be used in the activity;
- e) The operational aspects of the activity; and
- f) The option of not implementing the activity.

### **6.1 The property on which or location where it is proposed to undertake the activity.**

Mashige building Construction and Consultant applied for prospecting on the following properties all portions of the farm Bergvlei 192 HT and La Belle Esperance 191 HT to determine the presence of Coal and whether these are feasible to proceed into further studies towards a Mining Right or a Mining Permit.

### **6.2 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.

### **6.3 The design or layout of the activity**

The location of activities will be determined based on the location of the prospecting activities, which will only be determined during Phase 1 of the Prospecting Works Programme. All infrastructures will be temporary and/or mobile [refer to Section d (ii) of the report for which includes a typical layout of drill sites to be established].

### **6.4 The technology to be used in the activity**

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.

### **6.5 The operational aspects of the activity**

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage facilities are required.

The activities will commence with desktop study (as previously discussed), which will comprise of literature research. This manner of survey will ensure that the client can clearly delineate areas which are regarded as suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcomes of the desktop study, drilling and resource sampling will be undertaken for target areas only. Drilling and sampling are a minimal impact exploration method when it comes to environmental disturbance. After the preliminary exploration work, the anomalies identified will be ranked for exploratory drilling. Site activities as it relates to exploratory drilling will comprise the establishment of the drill pad (drill pad clearing and compaction), drilling operations (drill maintenance, refuelling, core extraction and core storage) and rehabilitation activities (drill pad ripping and re-vegetation). No feasible alternative to the proposed exploratory drill methods currently exists. Impact associated with the drilling operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

### **6.6 The option of not implementing the activity.**

The option of not approving the activities will result in a significant loss to valuable information regarding the mineral status present on these properties. In addition to this, should economical reserves be present, and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

## **7. Details of the Public Participation Process Followed**

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

### **7.1 Regulatory Framework**

This section of the report provides an overview of the tasks undertaken for the Public Participation Process to date. The public participation process was undertaken in accordance with the requirements of the EIA Regulations, 2014 (as amended, 07 April 2017) particularly Chapter 6 of this Regulation. It provides a guideline on how Public Participation Processes must

be conducted; it further stipulates timeframes in which these processes must be conducted in accordance with:

## **7.2 Identification of Interested and Affected Parties**

Settlements were indicated using the 1:50 000 topographical maps, aerial imagery, Title deed search and through face-to-face consultation. Most of the affected properties belong to private farmers and some portions are state owned land (see the attached Windeed Search results). Other I&APs identified, include Non-profit organizations most focused on environmental protection, adjacent and other landowners, non-governmental organisations and/or private persons. These stakeholders were consulted through a newspaper advert from the 20<sup>th</sup> of May 2022 and through emails containing BIDs for them to review and comment and register as I&APs. Site Notices were plugged in public areas and around the farm portions to invite the public to comment and raise concerns, if any, regarding the proposed Prospecting Right Application. The site notices stated that the Draft Basic Assessment and Environmental Management Programme Report will be made available for all I&APs and the public to review for a 30-Day period.

## **7.3 Newspaper advertisement**

A newspaper notice was placed in the **Excelsior News** on the 20<sup>th</sup> of September 2022 inviting stakeholders to take part in the Prospecting Right Application (see the attached below) by commenting and raising concerns, if any, regarding the proposed activity.

## Windeed Search results acquired to identify rightful landowners.

WinDeed Database D/O Property - List  
HT, 192, MPUMALANGA

Lexis® WinDeed

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

### SEARCH CRITERIA

Search Date	2022/05/13 14:40	Farm Number	192
Reference	-	Registration Division	HT
Report Print Date	2022/05/13 14:41	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	WinDeed Database

### PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
1	ROSMARIE EMMA HINZE WILL TRUST			
2	ROSMARIE EMMA HINZE WILL TRUST			
3	LABELLA TRUST			
4	LABELLA TRUST			

WinDeed Database D/O Property - List  
HT, 191, MPUMALANGA

Lexis® WinDeed

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

### SEARCH CRITERIA

Search Date	2022/05/13 14:42	Farm Number	191
Reference	-	Registration Division	HT
Report Print Date	2022/05/13 14:42	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	WinDeed Database

### PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	KLINGENBERG KURT STILLFRIED			
1	FILTER HORST ERAID			
2	LABELLA TRUST			

**Figure 8: Shows the Windeed Search Results of proposed farms and portions.**

- An Advert was published in the Excelsior News on the 20<sup>th</sup> of May 2022.

# Covid-19 update

**Kate-Maria Ferreira**  
The National Institute for Communicable Diseases (NICD) has reported that at least 344 new Covid-19 cases were detected between Sunday 15 May and Monday 16 May bringing the cumulative number of infections to at least 3 891 793.

The provincial breakdown of new cases is as follows:

- Gauteng - 1 897
- Western Cape - 884
- KwaZulu-Natal - 839
- The Free State - 188
- The Eastern Cape - 162
- Mpumalanga - 124
- North West - 113
- The Northern Cape - 111
- Limpopo - 26.

Two people died

due to the infection on the same date, bringing the cumulative total to 100 753 deaths since the start of the pandemic. 3 638 Covid-vaccines were administered. Some 35 441 399 jobs have been administered since the rollout of the vaccine began.

Source: www.sars.gov.za

# Mikrogolf-melkko

**Jessica Barn**  
Bertrandie: 100 ml (70 g) sago

- 1 liter (4k) melk
- 30 ml (2 e) botter
- 2 eiers, geskei
- 75 ml (5 e) koekmeel
- 20 ml (4 t) vloeistof
- 2 ml (½ t) sout
- 125 ml (½ k) water
- 60 ml (¼ k) suiker
- 2 ml (½ t) fyn kaneel

Metode:

- Plaas die sago en 250 ml (1 k) van die melk in 'n mikrogolf glasbak en mikrogolf 2½ minute op hoog.
- Roer goed en laat 'n rukkie staan.
- Voeg die oorblywende.

Wenk: Jy kan ook 'n kaneelstokkie en 2 kardemompe by die melk voeg. Verhit tot loutarm en verwyder die speserye.

Bron: <https://book-eatbooks.co.za/>

# Does your home have curb appeal ... to criminals?

When it comes to the safety of your family and property the best course of action is prevention rather than dealing with the aftermath of a break-in or robbery.

Chanel Hattingh, Head of Marketing and Communications at Fidelity ADT, says the last thing you want is for your home to have curb appeal to criminals.

"Homes become security targets when someone can see exactly what's on offer and that the family is lax about security or not home often. If there is no dog, security systems or lights on, it makes it even easier for burglars. Make it a goal to keep your home from being targeted," she says.

Hattingh offers these 10 tips to make your home less appealing to burglars:

1. Walk the perimeter and check for weaknesses in your pathway, fence, wall or gate. The perimeter of your property is your first line of defence and needs to be properly secured with systems like electric fencing and cameras.
2. Ensure windows have burglar bars and doors have proper locks. Flimsy and unsecured entry points are bound to draw unwanted attention.
3. Install bright lighting. A well-lit property is visible to neighbours or people driving past and makes it easy to spot someone lurking around. If you go out at night, leave some lights on inside to give the impression someone is home. Smart home security systems can be linked to your phone or laptop, allowing you to activate your alarm, turn lights on, close blinds and much more from anywhere.
4. Close blinds or curtains when it gets dark or even if you are out for the day. The less criminals can see into your home the better.
5. Get a house sitter if you are going away, even just for the night. If you aren't able to, leave the TV and lights on.
6. An obvious sign you are on holiday is mail piling up in the postbox and on the driveway. Ensure a neighbour or family member is collecting this so it is not obvious nobody is home.
7. Keep the garage closed to prevent someone from seeing what you have inside. Cars should be parked in a locked garage.
8. Garden tools and equipment, bicycles, gas bottles and garden furniture should be stored in a locked shed or in the garage when not in use.
9. Sign up with a reputable security company. Their signboards on your perimeter are a good deterrent and they can offer advice on security improvements around your home and property.
10. It is very important to keep your house visible from the road and your neighbour's yard, so trim bushes and other areas that can provide hiding places to ensure you are not blindsided when you get home.

"The safety of your loved ones and belongings are paramount, so make a point of checking whether your home could have curb appeal to criminals," says Hattingh.

"If so, put some common sense improvements in place and don't hesitate to get a good home security system linked to an armed response service."

**NORMANDIEN FARMS (PTY) LTD**  
stores the services of a **STORES CLERK** to be based in Pietermaritzburg

**MINIMUM REQUIREMENTS:**

- Qualified Store Clerk Grade 12 with experience
- Computer literacy and OMS knowledge background
- Knowledge of mechanical parts
- Good communication skills

**RESPONSIBILITIES:**

- Daily receiving, issuing and despatching of parts, oils and fuel
- Keeping of stock levels and ordering
- Stock reports and administration

Applications must be addressed to: [magn@normandien.co.za](mailto:magn@normandien.co.za)

If you do not receive feedback within 7 days from the closing date, please consider your application to be unsuccessful.

CLOSING DATE: 27 MAY 2022

## Ons pragtige kinders

Hoe talentvol is ons kinders nie? Party kan sê, ander goed toelief hulle professionele atterig word en dan is daar die idiom wat in sport of op

aka-demiese gebied uitblink.

'n Oer veul baie trots on in die geboek van die veld te staan en 'n oopvoering of 'n wedstryd te kan byvoel. 'n Moet skoolrapport laat eens se hart swel van trots.

Ogetukig is daar ook sommige ouers wie on die aanderkant toe oortimel. Hulle kinders se prestasie is hulle ja. Hulle veul belangrik as aander ouers wie se kind 'a gemiddelde prestasieer is. Ook is sommige ouers jaloes en wil hul te alle koste altyd hul kinders is 'a leierskap posisie sien - pediek, nugtykapiteel of 'n eenste plek is die kind vir abade-eale.

Sulke kinders mag anper soot 'n fruit begin nie en sybaar prestasie moet altyd beter on beter. Azne kind! Waar is daar tyd on te ontpas van vriendskappe te sene vir eendag waoneer lyby 'a volwaardige grootmens is en vrede gesa redig is.

Ons ouers se kinders ook 'a plekkie is die son. Laat jou eie kind toe on sy kindtes te geniet!

Mitsien dan sal jou kinders ook eendag se dat die lewe lekkeerder was toe hul ouers vir kulle getrog het!

**NOTICE OF A JOINT PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION**

Application for Prospecting Right: Mashige Building Construction and Consultant has lodged an application for a prospecting right (DMRE REF: MP 30/5/1/12/17738 PR) for the purpose of prospecting for Coal on all portions of the farm Bergvliet 192 HT and La Belle Esperance 191 HT, situated in the Magisterial District of Mkhondo (Wakhanstrom & Pietermaritzburg) in Mpumalanga Province.

**INVITATION TO COMMENT**

Notice is hereby given in compliance with the terms of Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and EA Regulations (as amended, 7 April 2017) where one of the prerequisites is that all stakeholders must be notified of Mashige Building Construction and Consultant's Intentions to obtain Prospecting right together with Environmental Authorisation for Coal.

Registration as Interested & Affected Party: As part of the EA process, more especially the Public Participation Process (PPP) for this proposed project, interested and Affected Parties (I&APs) are invited to register and kindly submit any comments or concerns to reach Mr Abel Molapelo, no later than 19th July 2022 using the contact details provided below. The public is also invited to review and comment on the Draft Baseline Assessment Report and Environmental Management Programme report (DBAR & EMPr). The Draft BAR & EMPr will be available for a review period of 30 calendar days from 20th June 2022 to 19th July 2022. The Draft BAR & EMPr will be available at Mkhondo Local Municipality & Mkhondo Public Library (108 Relief Street). The electronic copies will be made available upon request from Singo Consulting (Pty) Ltd using the details of the EAP below.

**ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) & APPLICANT DETAILS**

EAP:	APPLICANT:
 Singo Consulting (Pty) Ltd Office 570, 5 Batafeka Street Tafelberg Park Est 2 Witbank, 1040 Contact person: Mr Abel Molapelo Tel. No.: +27 13 892 0041 Fax No.: +27 06 514 4103 Cell No.: +27 71 362 7094 Email: <a href="mailto:abel@singoconsulting.co.za">abel@singoconsulting.co.za</a>	 Mashige Office No. 3F Vato Building Complex Thohoyandou 0950 Contact person: Mr Thibiso Mashige Tel. No.: +27 15 942 3903 Fax No.: +27 06 7686 070 Cell No.: +27 82 732 0903 Email: <a href="mailto:info@mashigeconstruction.co.za">info@mashigeconstruction.co.za</a>

## Prepositions

In	On	At
in time	on watch	at high speed
in demand	on the record	at one's side
in focus	on the road	at a fraction of
in an uproar	on oath	at the outset
in answer to	on pain of	at the end
in anticipation of	on the air	at sight
in arrears	on balance	at the double
in danger	on a diet	at one time
in debt	on a journey	at a discount
in decline	on a trip	at a distance
in defense of	on a large scale	at a glance
in detail	on a small scale	at a guess
in disgrace	on a pension	at a loose end
in disgrace	on a regular basis	at a loss
in fact	on a spree	at a low ebb
in fairness to	on account of	at a price
in favour of	on an expedition	at a mile of
in fear of	on an island	at a speed of
in flames	on approval	at a standstill
in flower	on average	at all costs
in full	on bail	at all events

Figure 9: Shows the Newspaper Advert for the proposed activity on Excelsior News.

- BIDs were sent to all interested and affected parties via e-mail from the 20<sup>th</sup> of May 2022.
- All the relevant Government Departments where informed of the said application via e-mails and A2 Site Notices were erected in visible and accessible places around and within the project area. Other notices were placed in neighbouring farms of the proposed area and farms adjacent to the prospecting application (see pictures below).

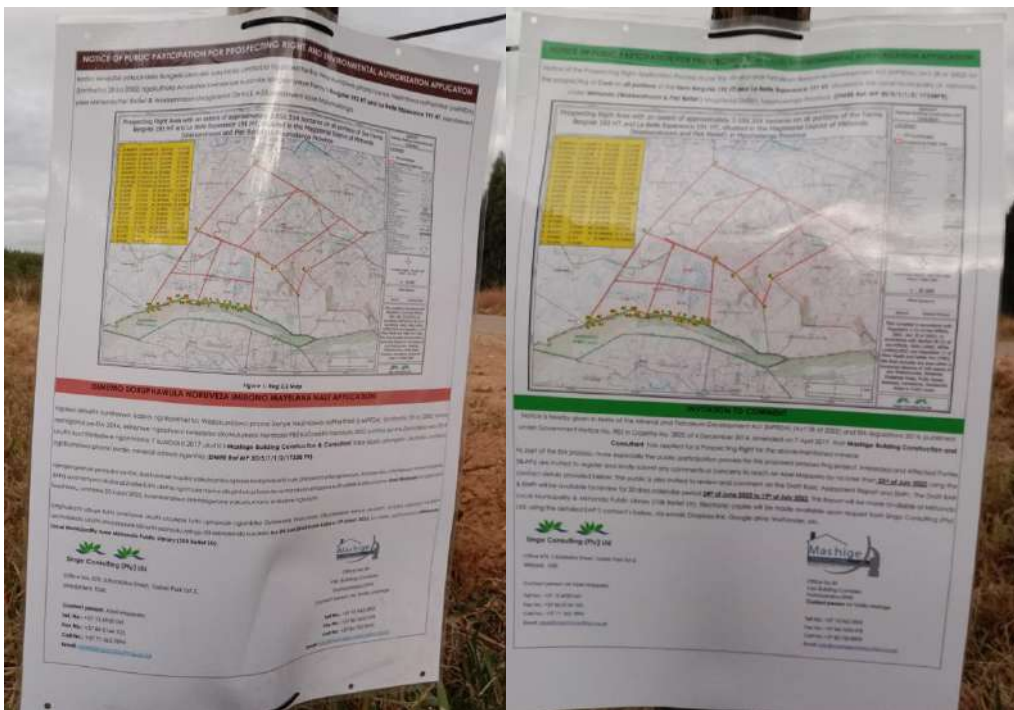


Figure 10: Site notice placements at visible points.

- BIDs were printed and made available within the study area and nearby settlements.
  - The draft BAR & EMPr will be available for review for a 30 days' calendar period. Electronic copies will be made available upon request from Singo Consulting (Pty) Ltd, using the detailed EAP'S contact's, via emails, Drobox link Google Drive, WeTransfer, etc.
  - Relevant Government Departments

E-mails were sent out to all relevant departments, which include the Department of Rural Development and Land Reform, Department of Water Affairs and Mpumalanga Department of Mineral Resources and Energy (DMRE).



## 8. Issues and Response Register.

### 8.1 Summary of issues raised by I&Aps.

The table below will be completed after the 30-day review and comments period of the Draft BAR and EMPr. The comments received will form part of the Final BAR and EMPr to be submitted to the DMRE for decision making.

**Table 6: Summary of issues raised by I&AP'S**

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and		Comments Received			
Mark with an X where those who must be consulted were in fact consulted.					
<b><u>AFFECTED PARTIES</u></b>					
<b>Landowner/s</b>					
<b>Lawful Occupier/s of the land</b>					
<b>Adjacent Landowner(s)</b>					

<b>Municipality</b>					



<b>Organs of state</b> (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
<b>Eskom</b>					
<b>Communities.</b>					

<b>Department of Rural Development &amp; Land Reform</b>					
<b>Traditional Leaders</b>					
<b>Other Competent Authorities affected</b>					
<b><u>OTHER AFFECTED PARTIES</u></b>					
<b><u>INTERESTED PARTIES</u></b>					

## 9. The Environmental attributes associated with the alternatives.

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

As outlined in the previous section, Mashige building Construction and Consultant applied for prospecting right over the area of interest. **Baseline Environment.**

### **Type of environment affected by the proposed activity**

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

#### **9.1.1 Topography**

The topology of the area is illustrated below by Figure 11 below. A Topographic map is a map which indicates, to scale, the natural features of the Earth's surface, as well as human features, with features at the correct relationship to each other (Oxford Dictionary; 2020). The topography map other than showing landform features, rivers, and associated water resources, it also shows the height above sea level with the use of contour lines. Contour lines are an Imaginary line on the ground surface joining the points of equal elevation.

In this environmental project, topography is used to determine how surface water flows during rainy seasons or how it would flow during the existence of the project. The topography also influences groundwater vulnerability, as topography also influences run-off and infiltration.

The highest elevation point within the proposed project are is 1820 mamsl in the southern direction of the study area. The slope is generally steep all around the study area, this is seen by the contours being much close to one another. As evidenced by the contours on the Topographic map, the movement and direction of the rivers is from an area of higher elevation to an area of lower elevation. In the northern direction, the dam on site, is fed by rivers which flow towards northeast, and the dam then discharges outside the project area to the neighbouring streams. The area has many river systems, which are interconnected, which flow towards various directions to the outside environment. This knowledge is vital in the sense that contaminating any one of the streams or dams, ultimately the people who depend on the streams and the ecosystems that depend on those streams will be detrimentally affected.

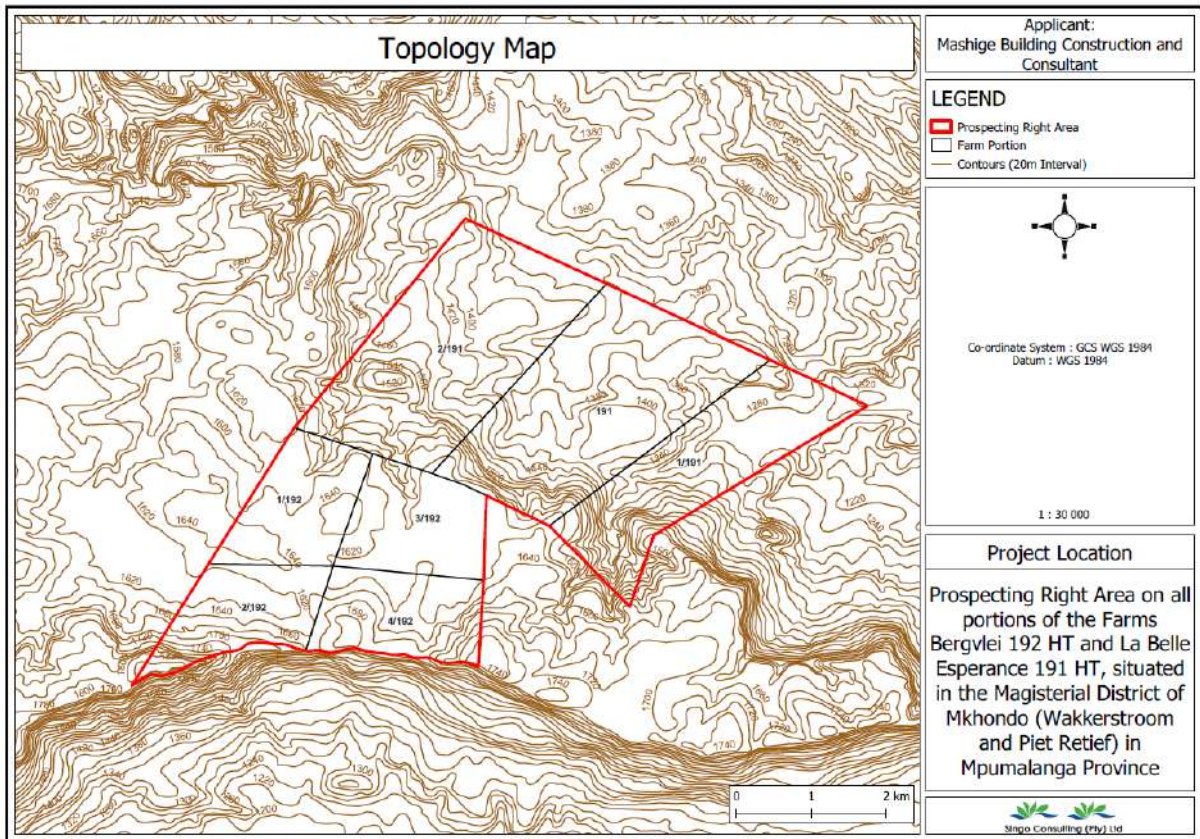


Figure 11: Topology map of the proposed area.

## 10. Climate.

The climate is mild, generally warm and temperate in Piet Retief. When compared with winter, the summers have much high rainfall. The average annual temperature in Piet Retief is 16.6°C with annual precipitation of approximately 920 mm (see figure below). Precipitation is low in June, with only 11 mm rainfall, December precipitation reaches the peak with an average of 159 mm. January is the hottest month of the year with an average temperature of 20.1°C and July is the coldest with an average temperature of 11.4 °C. (Source: CLIMATE-DATA.ORG).

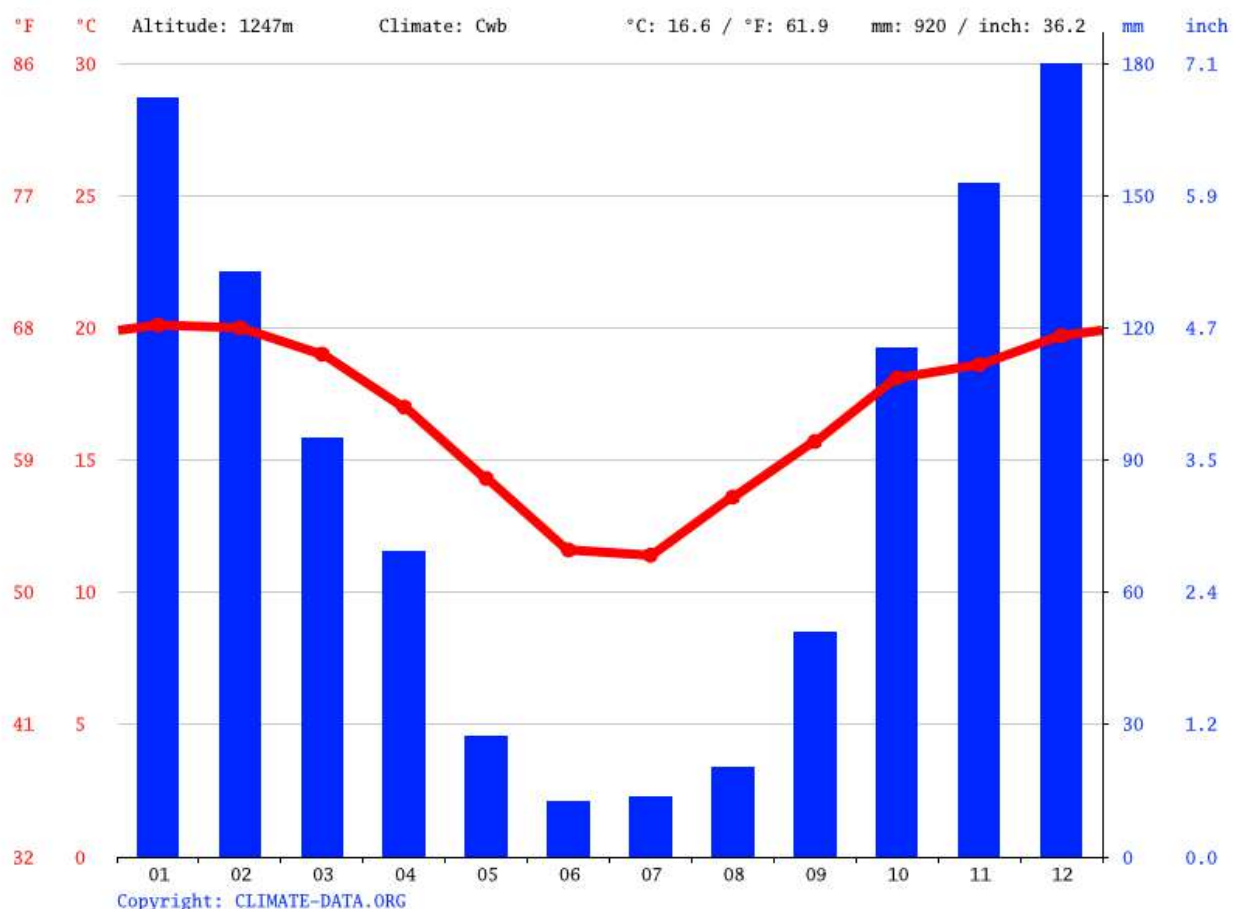


Figure 12: Piet Retief Climate Graph.

## 11. Geology.

### 11.1 Regional Geology

#### Karoo Dolerite Suite

The Karoo Dolerite Suite represents a network of dykes and sills which occur as feeders or tongues to the flood basalt province (Walker and Poldervaart, 1949) and are best developed in the main Karoo Basin. Multiple dolerite intrusion events occurred in the Karoo, both predating and postdating the flood basalts (Erlank, 1984; Mountain, 1968; Walker and Poldervaart, 1949), therefore making it nearly impossible to associate them with any single intrusive or tectonic event (Chevallier and Woodford, 1999; Duncan and Marsh, 2006; van Zijl, 2006a0).

#### Normandien Formation

The Beaufort Group of the Main Karoo basin is subdivided into lower Adelaide and upper Tarkastad (Sui) groups, with both thinning towards the northeast of the basin (including the study area) and the latter only being found east of 24°E. Within this north-eastern part of the basin (see study area, Figure 1), the Karoo succession comprises the lowermost Volksrust Formation

(Ecca Group), following Normandien and Verkykerskop, and uppermost Driekoppen Formations (Table 1), The upper Normandien Formation unconformity with the lower Harrysmith member is equated with the Permian-Triassic boundary (Ward, 2005), and this paper focuses on the former unit. The Normandien Formation comprises three sandstone members (lower Frankfort, Rooinek, upper Schoondmai) each overlain by an argillaceous interval.

indicated to be present within the area south and southeast of Middelburg. It consists of a bed of sandstone or quartzite at the base as well as massive, red rhyolite of which the top shows flow bedding. It contains a few intercalations of sandstone, tuff, black rhyolite and breccia. A bed of dark, fine grained mudstone is present approximately in the middle of the sequence.

### **Volkrust Formation**

SACS (1980) applied the name Volkrust Shale Formation to the old "Upper Ecca Beds", with the choice of name based on a description given by Blignaut et al. (1952). The general thickness of the unit is between 150-250 m and it is dominated by dark grey-green siltstones and mudstones, with phosphatic/carbonate/sideritic concretions. Cadle (1975) documents that the Volkrust Formation shows an overall coarsening-upward trend. Coal and Pseudo Coals occur interbedded with the mudstones in places. The Volkrust Formation is postulated to have formed in shallow to deep water basinal conditions.

Palaeontologically the Volkrust Formation is probably best known for its low diversity trace fossil assemblage (Tavener-Smith et al., 1988) and various organic microfossils. Macrofaunal remains include only various insects (Van Dijk, 1981) and a rare bivalve assemblage (Cairncross et al., 2005). Plant remains and fossilised wood are also known.

## **11.2 Local Geology.**

### **Vryheid Formation**

The majority of the economically extracted Coal in South Africa occurs in rocks of the Vryheid Formation, which ranges in thickness in the MKB from less than 70.0 m to over 500.0 m. It is thickest to the south of the towns of Newcastle and Vryheid, where maximum subsidence took place (Du Toit, 1918; Cadle, 1975; Whateley, 1980a; Stavrakis, 1989; Cadle et al., 1982) and where the basin was the deepest.

According to SACS (1980) the basic concept, distinguishing features and boundaries of the Vryheid Formation are those of the "Middle Ecca" as described by Du Toit (1954) and others. Prior to 1973 studies of the Vryheid Formation were largely stratigraphic. This situation changed when Hobday (1973) postulated deltaic depositional systems for the Vryheid Formation, and academic studies became more depositional process orientated.

The rapid sediment transfer into the basin was driven by bedload dominated fluvio-deltaic systems (Ryan, 1968; Hobday, 1973; Cadle, 1974) that prograded south and southwest, and had source areas to the northwest, north, northeast and east of the present-day basin margin (Cadle and Cairncross, 1993).

With the advent of later studies in the Witbank and Highveld Coal and Pseudo Coalfields (LeBlanc Smith, 1980;

Cairncross, 1980; Cadle 1982, 1986; Winter, 1985; Cairncross and Winter, 1984 and Cairncross, 1986) the basic fluvio-deltaic model became refined into greater palaeoenvironmental detail, including the interpretation of beach-barrier deposits (Vos and Hobday, 1977; Tavener-Smith, 1983), bed-load (braided) fluvial deposits (Cairncross, 1979; LeBlanc Smith, 1980; Winter, 1985), fine- and coarsegrained anastomosed river deposits (LeBlanc Smith and Eriksson, 1979; Cairncross, 1980) and highconstructive, lobate deltaic complexes (Cairncross and Winter, 1984). It was this array of palaeodepositional environments, and palaeotopographic relief, palaeoclimate and tectonic setting which controlled the distribution and quality of the Coalseams (Cadle et al., 1982; Cairncross, 1989).

Hobday (1973) was the first to refer to the cyclical nature of the upward-fining and upwardcoarsening successions that typify the Vryheid Formation, characteristics that are also well documented by Cadle (1974), Mathew (1974) and Van Vuuren and Cole (1979).

Palaeontologically the Vryheid Formation is best known for the rich fossil plant assemblages of the famous *Glossopteris* flora, which is the source vegetation for most of the Vryheid Formation Coal and Pseudo Coals. Detailed palaeobotanical studies based on the well-preserved plant fossils date back to the early 20<sup>th</sup> century (Etheridge, 1901; Leslie, 1903). Subsequent work was done by the likes of Plumstead (1952, 1956, 1957, 1958, 1969), Lacy et al. (1974), Kovács-Endrödy (1976, 1991), Anderson and Anderson (1985), Rayner and Coventry (1985), Adendorff (2005), Bordy and Prevec (2008), Claasen (2008), Prevec et al. (2008, 2009, 2010) and Prevec (2011).

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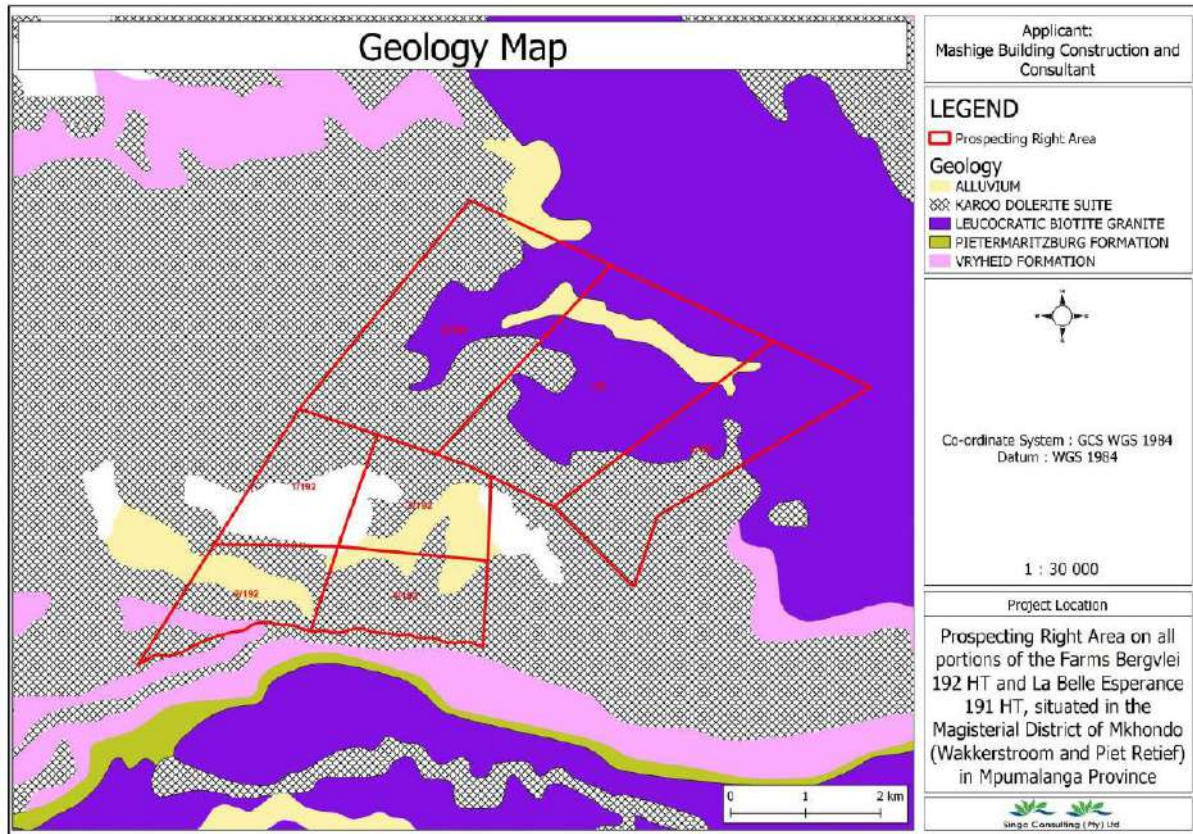


Figure 13: Geological Map of the proposed area.

## 12. Land Use and Land Capability.

The determination of the existing site specific and surrounding land use provides input into the process of impact identification and the establishment of closure objectives. The dominant land use that was observed on site was crop farming, Plantation and Livestock. Rehabilitation objectives to restore the site to pre-prospecting state must consider safety matters and an effective re-vegetation effort to reverse the impacts as far as is practicable.

Land capability assessment method was used to assess land suitability for existing and potential agricultural and non-agricultural uses. The method identified possible physical, chemical and degradation constraints to land use on particular soils and landscapes. This information will be used during borehole planning and rehabilitation to improve sustainable development.

The assessment portrays that crop production is limited to areas of homogenous deep soils with irrigation. Irrigation land uses are limited due to the lack of large volumes of water. As observed on the figure below, the area is capable of withstanding extensive grazing and may also be arable. There are very few physical limitations present, and they can be easily overcome; risk

of land degradation is negligible. However, a proper environmental management plan is required to reduce the possible associated risks.



**Figure 14: Landuse dominating the proposed project area.**



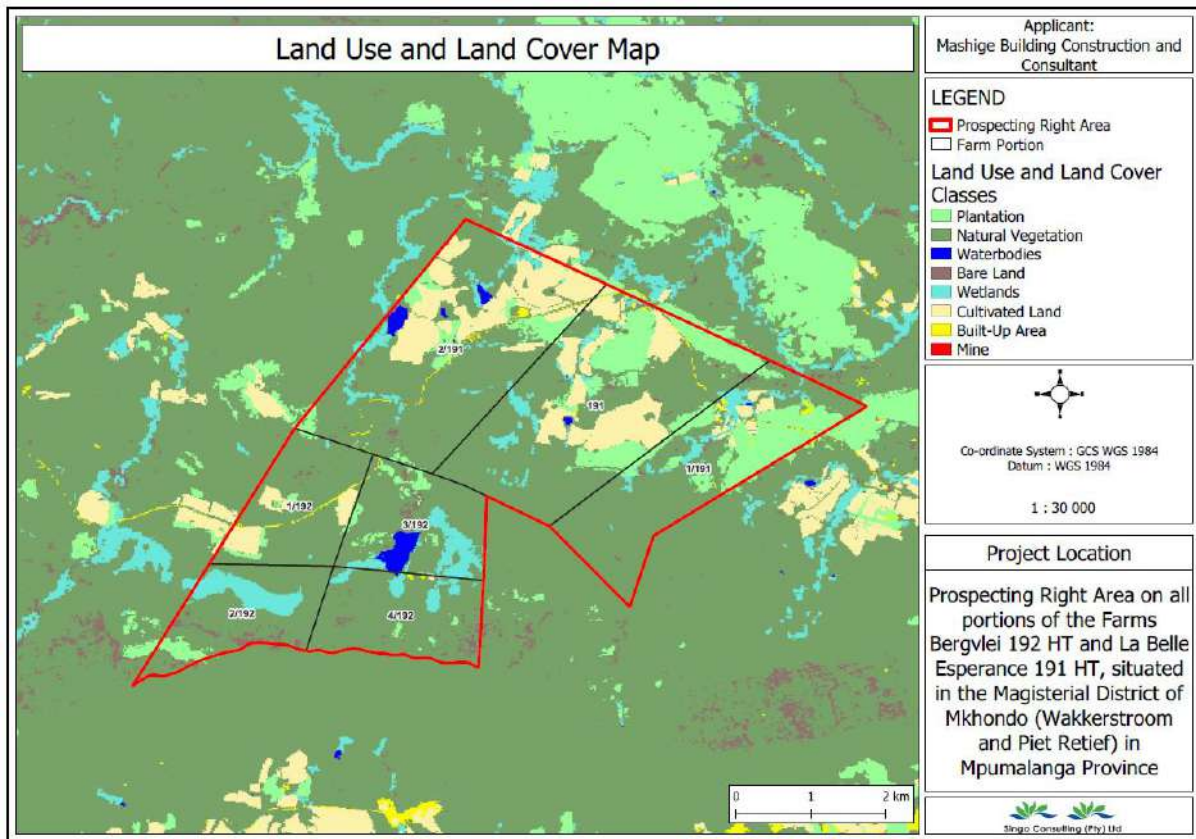


Figure 15: Current land use in the proposed area.

### 13. Soil.

The soil classes map in Figure 17 below, shows that the Prospecting Right area is largely covered with freely drained, structureless soils and association of classes 13 to 16: undifferentiated shallow soils and land classes.

#### Freely drained, structureless soils

The freely drained, structureless soils and textural contrast soils can be defined based on their soil depth, Soil Drainage, erodibility, and natural Fertility.

#### Soil depth

Depth of the soil profile is from the top to the parent material or bedrock. This type of soil can be classified as a restricted soil depth. A restricted soil depth is a nearly continuous layer that has one or more physical, chemical, or thermal properties.

#### Soil Drainage

Soil drainage is a natural process by which water moves across, through, and out of the soil because of the force of gravity. The soils in the proposed area have an excessive drainage due to the soils having very coarse texture. Their typical water table is less than 150.

### **Erodibility**

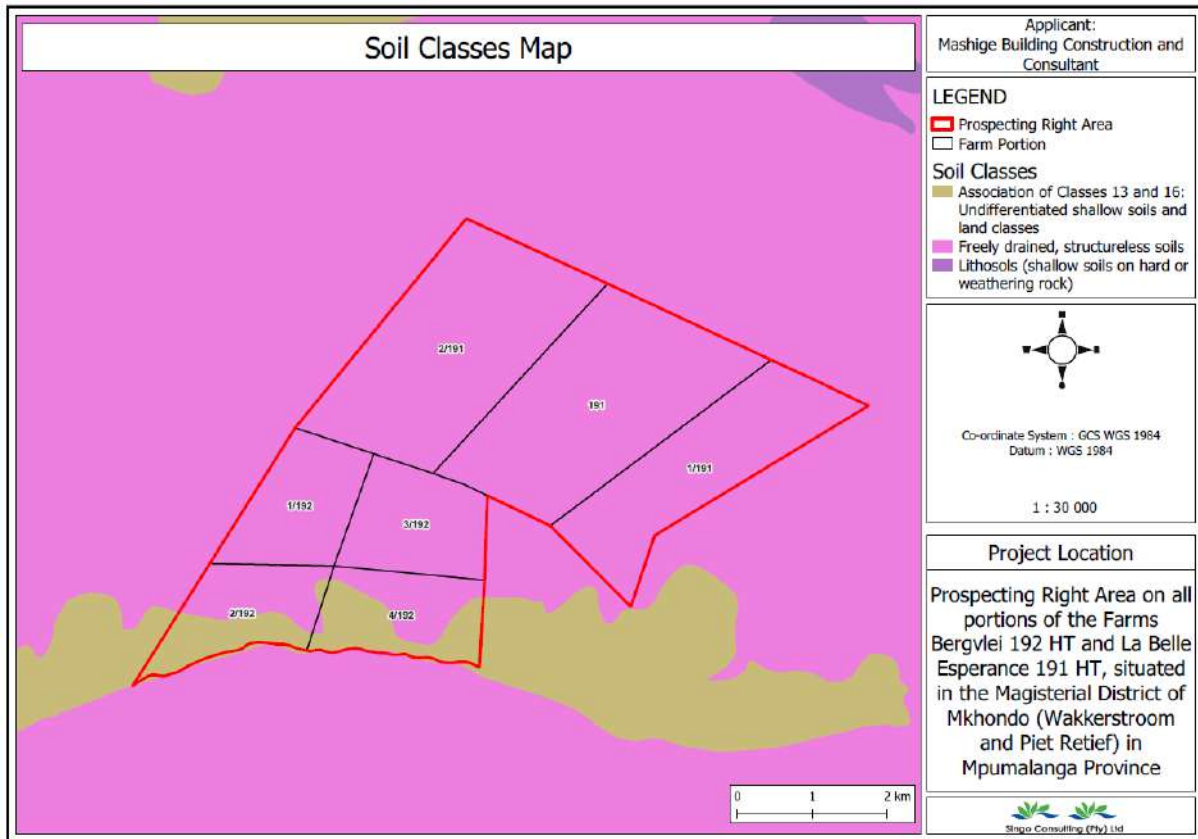
Erodibility is the inherent yielding or non-resistance of soils and rocks to erosion. The freely drained structureless soils have high erodibility. A high erodibility implies that the same amount of work exerted by the erosion processes lead to a larger removal of material.

### **Natural Fertility**

Soil fertility refers to the ability of soil to sustain agricultural plant growth, i.e., to provide plant habitat and result in sustained and consistent yields of high quality. The soil, as a nature of them, contains some nutrients which is known as 'inherent fertility'. Among the plant nutrients, nitrogen, phosphorus, and potassium is essential for the normal growth and yield of crop. The proposed area has a low natural fertility soil.



**Figure 16: Soil type observed on site.**



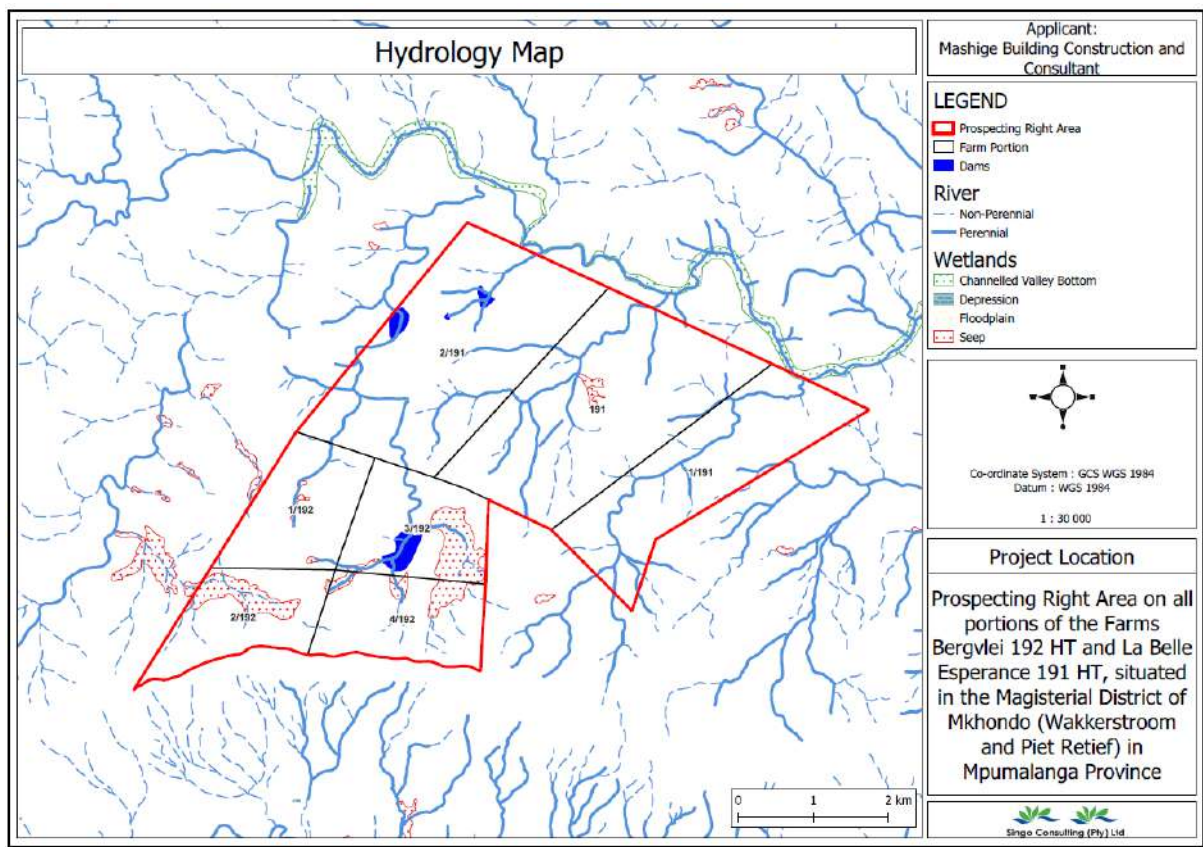
**Figure 17: Soil classification through desktop studies.**

## 14 Water Resources.

All rural areas obtain their water from groundwater sources (about 85% from boreholes and 15% from well field type boreholes in the riverbed alluvium). The water is pumped to storage reservoirs and then distributed to the consumers. Chlorine dosing tanks were installed in the storage reservoir, but the municipality is experiencing difficulty in maintaining the dosing equipment due to budgetary constraints and not enough resources.

The ground water from the boreholes is generally low due to poor yields and unacceptable water quality (class 3 or 4). Water from the well field type boreholes has however higher yields and acceptable quality. The surety of the current water supply from boreholes is not known. It is also not known what the actual volume of water is provided to the community.

**Figure 18** below is a hydrological map illustrating Channelled valley-bottom wetland, Depression and Seep wetland.



**Figure 18: Hydrology map of the proposed project area.**

The regional hydrological setting of the project site is indicated in **Figure 19**. The proposed prospecting right area is in the Pongola-Mtamvuna Water Management Area (WMA). The main quaternary catchment is W42C. The W42C has an area of 377 km<sup>2</sup>.



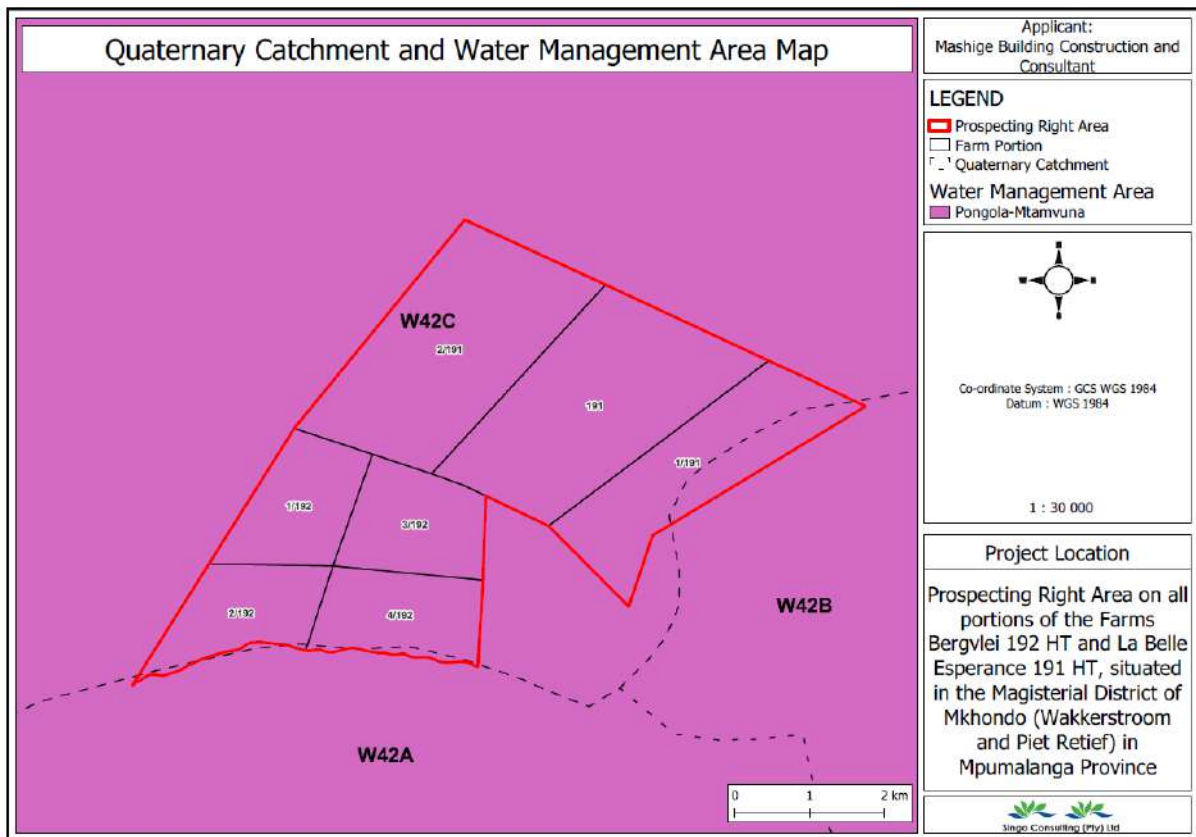


Figure 19: Water Management Area Map of the proposed prospecting area.

• **Biodiversity.**

Plant species noted from the Screening report and site assessment include the following:

Plant species noted from the Screening report and site assessment include the following:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Faurea Macnaughtonii
Medium	Ocotea bullata
Medium	Sensitive Species 1252
Medium	Ocotea Kenyensis
Medium	Bowkeria Citrina
Medium	Dierama Erectum
Medium	Dracosciadium Italae
Medium	Sensitive Species 571
Medium	Lotononis Amajubia
Medium	Sensitive Species 41
Medium	Gymnosporia devenishii
Medium	Sensitive Species 691

**Table 7: Plant species recorded on site.**

**Faurea Macnaughtonii** commonly known as the Treblanz beech, is a tall evergreen with dense, rounded crown, growing from 8 m to 25 m in height (SA Tree List No.74). This is the tallest member of the Proteaceae family in South Africa.

Its bark is initially smooth and pale grey, becoming thick, dark grey and coarse from being furrowed longitudinally. Flowers, appearing in summer, grow in long (up to 16 cm), terminal spikes, white or pale pink in colour and sweetly scented. The fruit is small nutlet covered in hairs and retaining the style at its tip. Nutlets may be found on the tree as late as early winter. The species distribution from Knysna along the Eastern Cape and Kwa Zulu Natal coast regions, Swaziland and the lowveld to Limpopo has curious discontinuities that properly developed later. Further North, the tree also occurs in Tanzania and on Madagascar.

The habitat is temperate and tropical forests and forest margins. It is common in the Mistbelt of Northern KwaZulu-Natal. The species is deemed rare, although its population in habitat is stable early in the twenty first century.

**Ocotea bullata** commonly known as black stinkwood or stinkwood, is a tall tree growing up to 30 m in height. The leaves are dark and glossy green with blisters or bubbles on the upper surface, known as bullae, hence the specific epithet bullata. The leaf margins are wavy. It flowers from December to February, but sporadically later in the year in some places. Fruits in cups rather like those of acorn follow the flowers. The wood is from light cream, through brown to almost black. It is also finely textured and heavy.

*Ocotea bullata* occurs mostly in high forest of South Africa, from the Kloofs of Table Mountain to the Mountain forest of Limpopo, and it is at its best in the Knysna forests. According to Palmer and Pitman, it is seldom found in the forests on the Eastern Cape, where Sneezewood occurs instead. It thrives in deep soils in Kloofs. It has always been sought after for furniture and the bark collected for medical purposes. Only stumps and few saplings remain in Newlands (Table Mountain) and the bark is heavily stripped.

**Ocotea Kenyensis** is an evergreen tree with a much-branched, rounded crown, it usually grows up to 30 m tall, but exceptionally to 40 metres. The usually straight bole can be unbranched for around 8 metres, it is up to 100 cm in diameter, occasionally to 150 cm. The tree is commonly harvested from the wild for its valuable timber, which is used locally and also traded. The plant also has local medicinal uses

The tree yields a superior hardwood, for which is heavily exploited through most of its range.



In some areas the populations are very small, e.g., the Zimbabwean population consists of four immature individuals. The plant is classified as vulnerable in the IUCN Red list of Threatened Species (2011)

**Bowkeria Citrina** is a multi-stemmed shrub about 3 m tall, occasionally tree-like. The stems are greyish white, and most of the plant is dotted with golden glands and covered with fine, soft hairs. Narrowly elliptical leaves, 70x10 mm, have entire or finely scalloped margins (particularly in young plants), and are borne in whorls of three to four. When crushed, they give off a pleasant lemony aroma. The bright yellow scuttle-shaped flowers are borne singly, or occasionally in twos or threes in the leaf axils, from November to June. The inside of the flower shows a pattern of red marks which are probably a guide to the oil hairs for the pollinator.

*Bowkeria Citrina* is found along streambanks and on forest margins in the mountains bordering north-western KwaZulu-Natal and southern Mpumalanga. It grows well in full sun in gardens with temperate summers and a good rainfall and is frost tolerant but cannot withstand drought. Don't attempt to grow it at the coast as it dies off during the humid summer months.

**Dierama Erectum** is known from 11 small, severely fragmented subpopulations at eight locations, in a very small area (EOO 4325 km<sup>2</sup>). Most subpopulations remain in grassland fragments where they are declining due to overgrazing. The plant ranges from Northern KwaZulu-Natal and southern Mpumalanga, between Ngome and Luneburg.

**Dracosciadium Italae** known as a member of the carrot from KwaZulu-Natal makes an unusual and interesting addition to indigenous gardens. In autumn the leaves turn attractive shades of red and orange before dying back in winter. The plants grow vegetatively by means of a horizontal underground rootstock. The richly branched flowering stalks appear in mid-summer (December) and bear delicate umbels of tiny, yellow, star shaped flowers.

These plants grow on and around rock outcrops in shallow soil in montane and mist-belt grassland between 1200 and 1600m. The distribution range is very narrow, being confined to three localities in northern KwaZulu-Natal, a summer rainfall region. They are able to withstand cold winter temperatures. The species was first described in 1986 by Hilliard and Burtt. The generic name is derived from Latin *draco* meaning dragon, referring to the Drakensberg Mountains where the type species occurs, and the Greek *sciajon* meaning parasol, sunshade or umbrella, referring to the shape of the inflorescence. The species name is derived from the Itala region in KwaZulu Natal, where it was first collected.

**Lotononis calycina** is a prostrate (flat-growing) perennial herb growing at altitudes of 458-1730 m, often forming mats. Plants are short-lived and flower from the first year of growth and resprout every year from an undivided tap root. Leaves are trifoliolate (having 3 leaflets) with the leaflets elliptic-obovate, apiculate (having a short, sharply pointed tip), hairless above and hairy below. Flowers appear in groups of 1-3 and are leaf-opposed; the standard (the broad, upper ± erect petal) is bright yellow, somewhat shorter or equal in length to the keel (the 2 front petals fused into a boat-shaped structure), hairy on the outside; the wings (the 2 side petals, one on each side of the keel) are characteristically much shorter than the keel; the keel usually has a blunt reddish-purple tip and is hairy. Flowering time ranges from August-December. Pods are narrow, oblong-obovate and densely hairy.

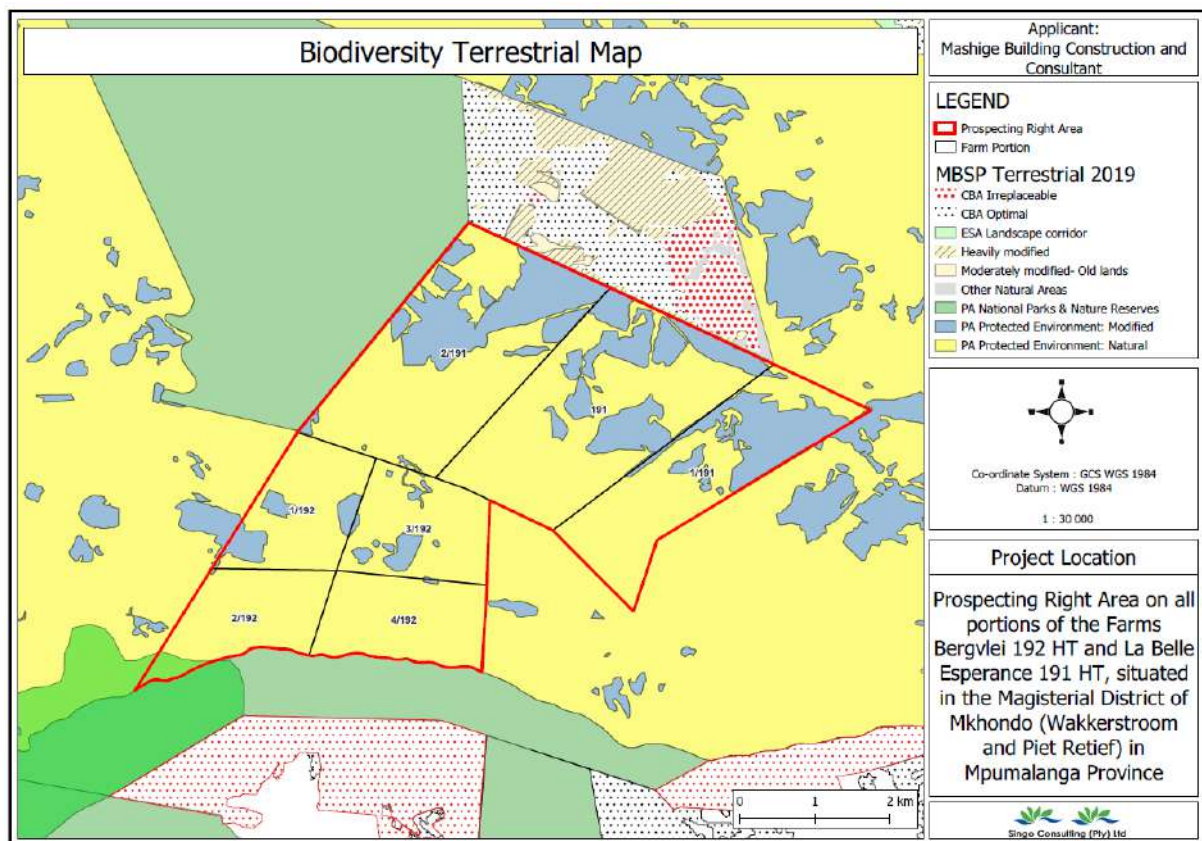


Figure 20: Biodiversity map of the proposed area.

## Vegetation

The proposed project area is entirely covered with Wet Cold Highveld Grassland.

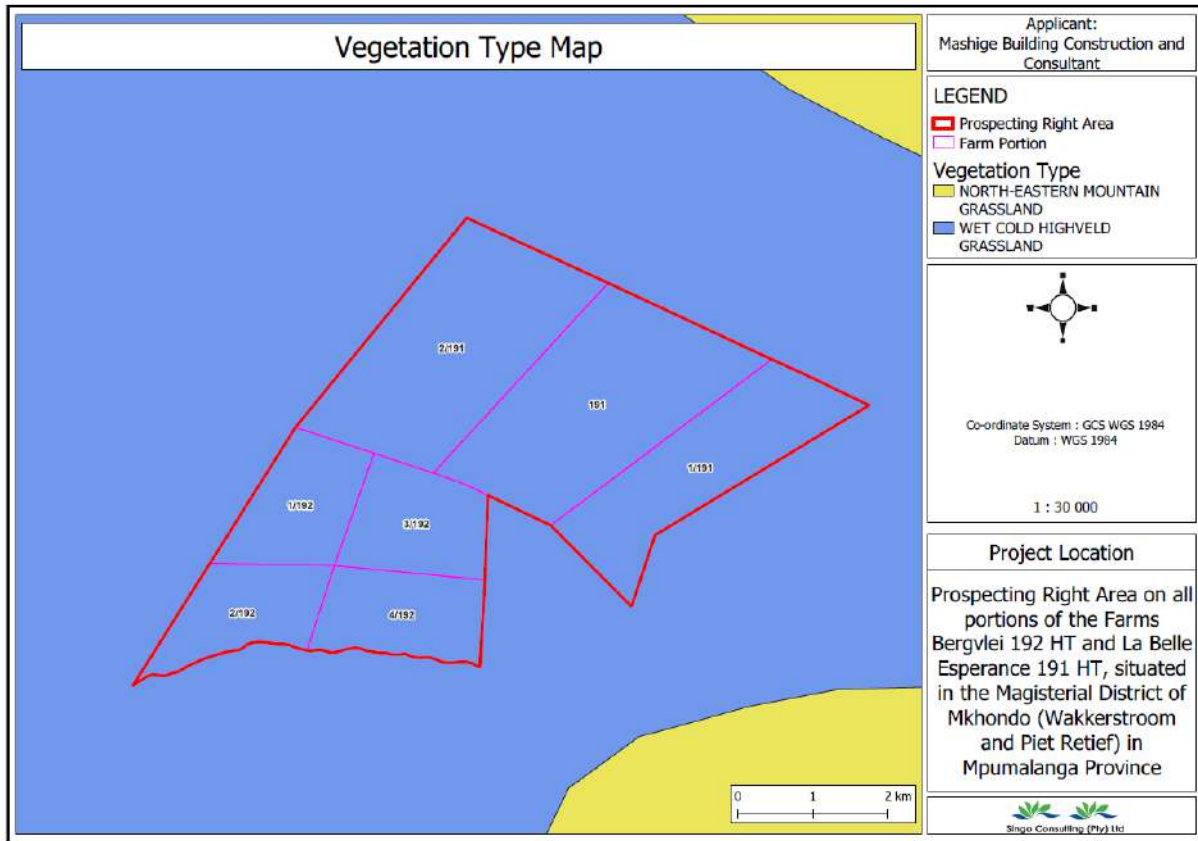


Figure 21: Vegetation noted in the proposed area.



Figure 22: Type of vegetation noted on site.

## 15 Heritage Resources.

A Heritage Impact Assessment was not undertaken as part of the development of the impact assessment. However, a screening tool assessment has shown that the proposed area is of high sensitivity. During site assessment no archaeological remains were observed. In the event where remains are discovered, the operation shall stop immediately and a qualified specialist

will be appointed for further assessments. As outlined in the above sections of this report, prospecting will be undertaken in phases; the first phase being a desktop assessment, followed by drilling. Based on the outcome of these activities, desktop study and potential drill sites will be determined. Potential heritage impact will only occur once desktop study has been used to identify sites for drilling, and it is therefore recommended that the Heritage Impact Assessment be undertaken prior to drilling activities, and that the Heritage Impact Assessment be conducted over identified localised drill sites and access routes, as opposed to the entire exploration area. This recommendation will be submitted to the South African Heritage Resource Agency (SAHRA) for approval.

## 16 Socio-Economic Environment.

The largest employing industries in Mkhondo local municipality is community services, trading (including tourism), mining, manufacturing, finance and agriculture. High labour industries such as Agriculture. Main Economic Sectors: Mining (39%), Manufacturing (24%), Wholesale and trade (15%), Government and community services (9%), Business services (5%), Transport (4%), Agriculture (1%), Construction (1%) and Electricity and water (1%).

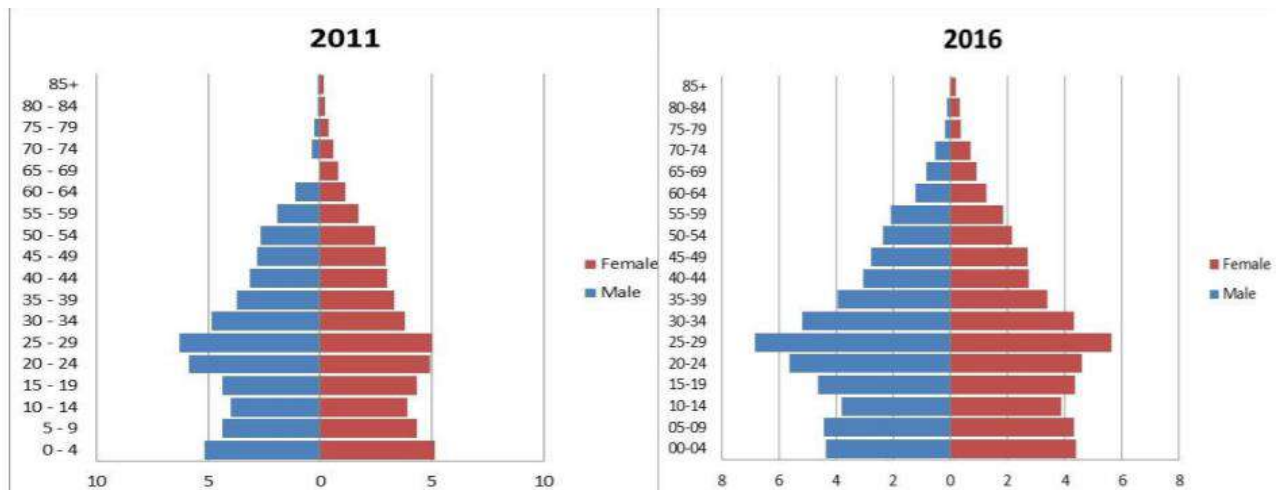
### 18.1 Population Distribution.

According to Stats SA (2016) the population of Mpumalanga Province as a whole has increased. Population of Gert Sibande District Municipality increased from 1043194 in 2011 to 1135409 in 2016 and the one in Mkhondo Local Municipality from 171 982 in 2011 to 189 036 in 2016 also increasing. It's Clear that Gert Sibande District recorded an increase in population of 92216 people between 2011 and 2016, growth rate of 2.0 %.

<b>Govan Mbeki's sector GDP contributions, percentage shares of the economy and Tress Index ranking per sector</b>			
<b>Economic Sector</b>	<b>GDP (Rands)</b>	<b>% Share</b>	<b>Tress Index Ranking</b>
Mining	10 574 495 600	39%	9
Manufacturing	6 590 891 943	24%	8
Wholesale and trade	4 168 093 454	15%	7
Government and community service	2 396 477 705	9%	6
Business services	1 338 062 167	5%	5
Transport	1 189 554 953	4%	4
Agriculture	367 050 120	1%	3
Construction	354 147 947	1%	2
Electricity and water	351 098 875	1%	1
<b>Total:</b>	<b>27 329 872 764</b>	<b>100%</b>	<b>n.a.</b>
<b>Tress Index: 62.5</b>			

*(Source: Regional Economic Indicators, 2011)*





**Figure 23: Distribution of population by age and sex at Mkhondo 2011 and 2016 (Source: Stats SA census 2011 and Stats SA, Community Survey 2016).**

Socio-economic information detailed in this section of the report provides an understanding of the need for economic development which to create employment opportunities. The high unemployment rate within the municipal area serves as an indicator of this requirement. Though no local employment opportunities are expected during the prospecting phase, the confirmation of a viable mineral resource and the possible establishment of a mine may aid to address unemployment challenges faced by the project affected communities.

### **17 Description of the current land uses.**

During site assessment, the objective was to verify the data that was found on the desktop phase. On the 21<sup>st</sup> of June 2022 environmental scientists from Singo Consulting (Pty) Ltd verified the current land uses on the proposed area. It was concluded that the area is dominated by cultivated lands, plantation and cattle farming.



**Figure 24 : Current land use activity in proposed area.**

## **18 Description of specific environmental features and infrastructure on the site.**

Several water courses have been identified within the boundaries of the proposed prospecting site. These should be avoided and where avoidance is not possible, impacts must be appropriately managed and remedied.

Based on the outcomes of the initial prospecting phases (non-site disturbing activities), the location of any on-site drilling will be determined (site disturbing activities) and the impacts on the identified water courses will subsequently be determined.

The Basic Assessment Report and Environmental Management Programme Report must be amended to include direct and indirect impacts on any water courses if any prospecting activities are undertaken within such areas or within 500 m of any water course.

Infrastructures found on site include Homestead Community, Powerlines and farm compound.

## **19 Environmental and current land use map.**

(Show all environmental, and current land use features)

Please refer to topography and water resources and vegetation types), indicating the environmental and land use features associated with the proposed prospecting area.

## **20 Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed.**

(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).

## **21 Socio-Economic Environment**

Mkhondo Local Municipality (MLM) is rich in terms of economic activities & a population of more than 202957. The municipality is defined as the primary source of agricultural produce by the practice of agricultural economic domination. It contributes heavily to primary food production without any secondary or very small individual farming activities.

Approximately 80% of the land in Mkhondo Local Municipality (MLM) is used for farming purposes, and large areas along the Waterval river are special agricultural land for agricultural production or activities. The MLM is a major producer of Maize, Sunflower seeds, ground nuts potatoes vegetables and Poultry with a significant increase of 21.2 % in the agricultural economy.

## **22 Unemployment analysis.**

The following table illustrates the potential impacts associated with each activity.

**Table 8 : Potential impacts per activity and listed activities**

Phase		Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided
<b>Phase 1: Data Acquisition and Desktop Study</b>						
Phase 1: Data Acquisition	N/A	Data collection and assessment (desktop only)	1. None identified.	N/A	N/A	N/A
Phase 1: Desktop Study	N/A	Data Assessment	2. None identified.	N/A	N/A	N/A

Phase		Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided
<b>Phase 2: Drilling</b>						
	Construction	Site Access	3. Destruction and / or disturbance of on-site fauna and flora.	Partial	No	Yes
			4. Soil compaction resulting from repeated use of access roads to drill sites.	Yes	No	No
			5. Vehicle traffic noise impact affecting cattle and / or wildlife.	Yes	No	No
			6. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Yes	No	Yes
			7. Potential destruction of heritage resources.	No	Yes	Yes



		Site establishment activities including:	8. Destruction and / or disturbance of on-site fauna and flora.	Partial	No	Yes
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Phase	Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided	
	(a) Vegetation clearing of drill pad area (b) Topsoil stripping and stockpiling (c) Drill pad compaction (d) Excavation and lining of drill water sump (e) Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay (f) Erection of fuel storage tank (g) Erection of safety barrier (h) Waste generation and management	9. Soil disturbance and compaction and topsoil stockpiling resulting in soil erosion.	Yes	Partial	No	
		10. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	Yes	No	Yes	
		11. Visual impact affecting visual character and "sense of place".	Yes	No	Partial	
		12. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Yes	No	Partial	
		13. Potential destruction of heritage resources.	No	Yes	Yes	
		14. Water and soil pollution resulting from disposal of drill fluids.	Yes	Partial	Yes	
		15. Continued soil erosion from topsoil stockpile and compaction from drill pad platform.	Yes	No	Yes	
		Operation	Exploration drilling and core sample collection and storage including:			
		(a) Scout and delineation drilling (b) Drill maintenance and				

Phase		Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided
		re-fuelling	16. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	Yes	Partial	Yes
		(c) Core sample collection and storage				
		(d) Drill fluid collection, storage and evaporation	17. Dust emissions from drilling and general site activities (including vehicle entrained dust).	Yes	No	Yes
		(e) Waste generation and management				
			18. Visual Impact affecting visual character and "sense of place".	Yes	No	Partial
			19. Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Yes	No	Partial
			20. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	No	No	Yes
			21. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Yes	No	Partial
			22. Impact on the pans and associated ecosystems in the area.	No	Yes	Yes

Phase		Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided
	Decommissioning	Removal of temporary infrastructure including:	23. Dust emissions from decommissioning activities (including vehicle entrained dust).	Yes	No	Yes
		(a) Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay	24. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	No	No	Yes
		(b) Borehole capping				
		Drill pad rehabilitation including:	25. Potential water and soil pollution resulting from hydrocarbon spills.	Yes	Partial	Yes
		(a) Ripping of drill pad and access road	27. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	Yes	No	Yes
		(b) Re-spreading of stockpiled topsoil				
		(c) Re-vegetation				

## **23 Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.**

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

### **23.1 Criteria of assigning significance to potential impacts.**

The evaluation of impacts is conducted in terms of the criteria detailed in the Tables below. The various environmental impacts and benefits of this project are discussed in terms of impact status, extent, duration, probability, and intensity. Impact significance is regarded as the sum of the impact extent, duration, probability and intensity and a numerical rating system has been applied to evaluate impact significance; therefore, an impact magnitude and significance rating is applied to rate each identified impact in terms of its overall magnitude and significance.

To adequately assess and evaluate the impacts and benefits associated with the project it was necessary to develop a methodology that would scientifically achieve this and to reduce the subjectivity involved in making such evaluations. To enable informed decision-making, it is necessary to assess all legal requirements and clearly defined criteria in order to accurately determine the significance of the predicted impact or benefit on the surrounding natural and social environment.

### **23.2 Impact Status**

The nature or status of the impact is determined by the conditions of the environment prior to construction and operation. A discussion on the nature of the impact will include a description of what causes the effect, what will be affected and how it will be affected. The nature of the impact can be described as negative, positive or neutral.

**Table 9: Status impact**

<b>RATING</b>	<b>DESCRIPTION</b>	<b>QUANTITATIVE RATING</b>
<b>Positive</b>	A benefit to the receiving environment.	<b>P</b>
<b>Neutral</b>	No cost or benefit to the receiving environment.	<b>-</b>
<b>Negative</b>	A cost to the receiving environment.	<b>N</b>

### 23.3 Impact Extent

The extent of an impact is considered as to whether impacts are either limited in extent or if it affects a wide area or group of people. Impact extent can be site specific (within the boundaries of the development area), local, regional or national and/or international.

**Table 10: Extent of Impact**

RATING	DESCRIPTION	QUANTITATIVE RATING
Low	Site Specific; Occurs within the site boundary.	1
Medium	Local; Extends beyond the site boundary; Affects the immediate surrounding environment (i.e. up to 5 km from the Project Site boundary).	2
High	Regional; Extends far beyond the site boundary; Widespread effect (i.e. 5 km and more from the Project Site boundary).	3
Very High	National and/or international; Extends far beyond the site boundary; Widespread effect.	4

### 23.4 Impact Duration

The duration of the impact refers to the time scale of the impact or benefit.

**Table 11: Duration of Impact**

RATING	DESCRIPTION	QUANTITATIVE RATING
Low	Short term; Quickly reversible; Less than the project lifespan; 0 – 5 years.	1
Medium	Medium term; Reversible over time; Approximate lifespan of the project; 5 – 17 years.	2
High	Long term; Permanent; Extends beyond the decommissioning phase; >17 years.	3

### 23.5 Impact Probability

The probability of the impact describes the likelihood of the impact actually occurring.

**Table 12: Probability of Impact**

RATING	DESCRIPTION	QUANTITATIVE RATING
Improbable	Possibility of the impact materialising is negligible; Chance of occurrence <10%.	1
Probable	Possibility that the impact will materialise is likely; Chance of occurrence 10 – 49.9%.	2

Highly Probable	It is expected that the impact will occur; Chance of occurrence 50 – 90%.	3
Definite	Impact will occur regardless of any prevention measures; Chance of occurrence >90%.	4
Definite and Cumulative	Impact will occur regardless of any prevention measures; Chance of occurrence >90% and is likely to result in in cumulative impacts	5

### 23.6 Impact Intensity

The intensity of the impact is determined to quantify the magnitude of the impacts and benefits associated with the proposed project.

**Table 13: Intensity of Impact**

<b>RATING</b>	<b>DESCRIPTION</b>	<b>QUANTITATIVE RATING</b>
Maximum Benefit	Where natural, cultural and / or social functions or processes are positively affected resulting in the maximum possible and permanent benefit.	+ 5
Significant Benefit	Where natural, cultural and / or social functions or processes are altered to the extent that it will result in temporary but significant benefit.	+ 4
Beneficial	Where the affected environment is altered but natural, cultural and / or social functions or processes continue, albeit in a modified, beneficial way.	+ 3
Minor Benefit	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are only marginally benefited.	+ 2
Negligible Benefit	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are negligibly benefited.	+ 1
<b>RATING</b>	<b>DESCRIPTION</b>	<b>QUANTITATIVE RATING</b>
Neutral	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are not affected.	0
Negligible	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are negligibly affected	- 1
Minor	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are only marginally affected.	- 2
Average	Where the affected environment is altered but natural, cultural and / or social functions or processes continue, albeit in a modified way.	- 3
Severe	Where natural, cultural and / or social functions or processes are altered to the extent that it will temporarily cease.	- 4
Very Severe	Where natural, cultural and / or social functions or processes are altered to the extent that it will permanently cease.	- 5

## 23.7 Impact Significance

The impact magnitude and significance rating is utilised to rate each identified impact in terms of its overall magnitude and significance.

**Table 14: Impact Magnitude and Significance Rating**

IMPACT	RATING	DESCRIPTION	QUANTITATIVE RATING
<b>Positive</b>	High	Of the highest positive order possible within the bounds of impacts that could occur.	<b>+ 12 – 16</b>
	Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. Other means of achieving this benefit are approximately equal in time, cost and effort.	<b>+ 6 – 11</b>
IMPACT	RATING	DESCRIPTION	QUANTITATIVE RATING
	Low	Impacts is of a low order and therefore likely to have a limited effect. Alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time consuming.	<b>+ 1 – 5</b>
<b>No Impact</b>	No Impact	Zero impact.	<b>0</b>
<b>Negative</b>	Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural, and economic activities of communities can continue unchanged.	<b>- 1 – 5</b>
	Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly possible. Social cultural and economic activities of communities are changed but can be continued (albeit in a different form). Modification of the project design or alternative action may be required.	<b>- 6 – 11</b>
	<b>High</b>	Of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or a combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt.	<b>- 12 - 16</b>

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

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

The proposed prospecting area is targeted as, historically, several Coal occurrences is known in the area, and number of these have been exploited for Coal in the past. In one of the portions the area was used as an underground operation. The site is therefore regarded as the preferred site and alternative sites are not considered.

## **25 Potential impact on heritage resources.**

No graves have been identified through desktop investigations. However, the generated screening tool report, outlines that the area has high sensitivity. Though a Heritage Impact Assessment was not undertaken as part of the development of the Basic Assessment Report and Environmental Management Programme Report, these will be of heritage and/or archaeological value.

Potential heritage impact will only occur once drill sites have been identified and on-site activities commences, and it is therefore recommended that the Heritage Impact Assessment only be undertaken prior to these planned activities.

The Heritage Impact Assessment will be conducted over identified localised drill sites to identify any cultural, heritage and or archaeological features which may be impacted on.

The fact that the prospecting activities will be undertaken in a phased approach will provide the opportunity to the prospecting team to demarcate areas of cultural and/or heritage significance (such as graves and stone kraals). With the early identification of these the impact on these will be avoided.

## **26 Potential impacts on communities, individuals or competing land uses in close proximity.**

The following impacts are regarded as community impacts:

- Potential water and soil pollution resulting from chemical spills and soil erosion;
- Noise due to the undertaking drilling machines;



- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
- Influx of persons (job seekers) to site because of increased activity and the possible resultant increase in opportunistic crime; and
- Visual Impact

Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

### **26.1 Water quality and availability.**

There is one major perennial river (Pongola) traversing the proposed project area and non-perennial Streams. Possible pollution sources include stockpiled soil and all areas cleared of vegetation. The eroded soil particles may be carried away by stormwater to these rivers which will result in an increase in the Total Suspended Solids (TSS) and Total Dissolved Solids (TDS) of the water courses. The storage of dangerous goods, temporary ablution facilities and discharge of drill fluids may also lead to surface water pollution if not managed appropriately.

Limited quantities of dangerous goods (fuel, oil and lubricants) will be stored on site. The transportation, handling and storage of such materials may result in spills and further water quality impacts in the events of spills when carried by stormwater to the water courses.

This impact is also regarded as a cumulative impact due to the potential contribution to water quality deterioration of the river systems if not managed appropriately.

### **26.2 Influx of persons resulting in increased crime rates.**

The potential impacts of an increase in crime rates associated with an influx of unemployed persons travelling to mine sites seeking employment may occur.

### **28.3 Visual impact**

The general characteristics of the site and that of the surrounding area are regarded to be that of "wilderness" and prospecting activities may result in localised visual impacts.

### **28.4 Positive Impacts (Advantage)**

While no significant short term positive impacts are associated with the prospecting activities, in the event that a viable Coal reserve is confirmed and pending the outcome of a detailed social & environmental impact assessment process, positive socio-economic benefits must be investigated and optimized.

### **28.5 The possible mitigation measures that could be applied and the level of risk.**

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

The section below provides a summary of the key management measures associated with the impacts identified in the previous section. The detailed rating and management plan is presented in Section J.

### **28.6 Measures to manage the potential impact on heritage resources.**

The fact that the prospecting activities will be undertaken in a phased approach will provide the opportunity to the prospecting team to demarcate areas of cultural and/or heritage significance (such as graves and stone kraals). With the early identification of these the impact on these will be avoided.

A Heritage Impact Assessment will be undertaken on each identified area where drilling activities are planned.

Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measures for the protection of such resources must be implemented.

Should any unknown heritage sites be identified during the drilling activities, all activities will cease immediately and the SAHRA will be contacted and an appropriate Heritage Impact Assessment will be undertaken on the site identified.

#### **28.6.1.1 Measures to manage the potential impacts on communities, individuals or competing land uses in close proximity.**

- Pollution Prevention

- Mitigation and management measures must be implemented to prevent environmental pollution which may impact on environmental resources utilized by communities, landowners and other stakeholders. These mitigation and management measures are discussed in the following section.
- Noise due to drilling and prospecting activities;
  - Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned drilling and a grievance mechanism will be made available.
  - Site activities will be conducted during day only to avoid night time noise disturbances and night time collisions with fauna.
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
  - Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
- Influx of persons (job seekers) to site because of increased activity and the possible resultant increase in opportunistic crime;
  - Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
  - The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.
  - If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.
- Visual Impact
  - Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered to conserve water resources.
  - The portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour. Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.
  - A waste management system will be implemented, and sufficient waste bins will be provided for on-site. A fine system will be implemented to further prohibit littering and poor housekeeping practices.

Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

### **Measures to manage the potential impact on Water quality and availability.**

- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion will be mitigated and managed as follows;
  - Existing tracks and roads must be used as far as is practicable to minimize the potential for soil erosion. In instances where access to drill sites are to be established, and if required, raised blade clearing will be undertaken with a view to maintain vegetation cover to limit soil erosion potential.
  - Soil disturbances are to be limited as far as is practicable to minimize the potential for soil erosion.
  - When establishing the drill pad, topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. Stockpiled topsoil will be used during rehabilitation efforts.
  - Where practicable topsoil will be stripped to a depth of 10 cm.
  - Topsoil will be stockpiles to a maximum height of 1.5 m with a side slope of not more than 1:3.
  - Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.
  - To reduce the potential for water pollution during the drilling activities, a sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation.
  - The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.
  - Oils and lubricant will be stored within secondary containment structures.
  - Where practicable, vehicle maintenance will be undertaken off -site.
  - If vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil.
  - A waste management system will be implemented, and sufficient waste bins will be provided for onsite. A fine system will be implemented to further prohibit littering and poor housekeeping practices.

- Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste).
  - Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.
  - Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.
  - Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes.
  - Drill holes must be permanently capped as soon as is practicable.
- **Motivation where no alternative sites were considered.**

The proposed prospecting area is targeted as, historically, several Coal occurrences are known in the area, and number of these have been exploited for Coal in the past. The site is therefore regarded as the preferred site and alternative sites are not considered.

- **Statement motivating the alternative development location within the overall site.**

(Provide a statement motivating the final site layout that is proposed)

As is clear from the information provided, each of the phases is dependent on the results of the preceding phase. The location and extent of possible drilling will be determined based on information derived from the desktop study. Drill sites will be selected to avoid known heritage features and water courses where practicable.

## **8 Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.**

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

To identify the potential impacts associated with the proposed prospecting activities the following steps were undertaken:

The stakeholder consultation process is currently undertaken in a manner to be interactive, providing landowners and identified stakeholders with the opportunity to provide input into the project. This is a key focus, as the local residence have capabilities of providing site specific information, which may not be available in desktop research material. Stakeholders are requested (as part of the BID) to provide their views on the project and any potential concerns which they may have. All comments and concerns will be captured and formulated into the impact assessment.

A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:

- ❖ South African National Biodiversity Institute (SANBI) Biodiversity Geographic Database LUDS system;
- ❖ Geographic Information System base maps;
- ❖ Department of Water Affairs information documents such as the (ISP and Groundwater Vulnerability Reports);
- ❖ Municipal Integrated Development Plan;
- ❖ Municipal Strategic Development Framework; etc.

A site visit was undertaken on the 23<sup>rd</sup> of June 2022. This site visit was utilized to ensure that the information gathered as part of the desktop investigation reflects the status of the land.

The rating of the identified impacts was undertaken in a quantitative manner as provided from p80 (Impact Ratings). The ratings are undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and actual views.

The identification of management measures is done based on the significance of the impacts and measures that have been considered appropriate and successful, specifically as Best Practical and Economical Options.

## 9 Assessment of each identified potentially significant impact and risk.

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

**Table 15: Impact Assessment and Management Type.**

<b>NAME OF ACTIVITY</b> (E.g. For prospecting - drill site, ablution facility, equipment storage, sample storage, site office, access route etc.	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination,	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post closure)	<b>SIGNIFICANCE</b> if not mitigated	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)	<b>SIGNIFICANCE</b> if mitigated
<b>Phase 1: Data Acquisition and Desktop Study</b>						
Data collection and assessment (desktop only)	1. None identified.	N/A	Planning	N/A	1. No mitigation proposed	N/A
Data Assessment	2. None identified.	N/A	Planning	N/A	2. No mitigation proposed	N/A



**Phase 3: Drilling**

Site Access	3. Destruction and / or disturbance of onsite fauna and flora.	Loss of Fauna and Flora	Construction Phase	10	<p>3. Map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMRE and DWS. Upon agreement of the location of the activities can the applicant proceed.</p> <p>4. Use existing track and roads in all instances as far as is practicable.</p> <p>5. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided.</p>	6
					<p>6. Site activities will be conducted during the day only to avoid night time noise disturbances and night time collisions with fauna.</p> <p>7. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p>	

4. Soil compaction resulting from repeated use of access roads to drill sites.	Loss of soil resources	Construction Phase	8	8. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts. 9. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.	5
5. Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of fauna	Construction Phase	6	10. Site activities will be conducted during the day only to avoid night time noise disturbances.	4

6. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of fauna	Construction Phase	10	11. Access control procedures must be agreed on with farm owners and staff trained.	8
7. Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase		12. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	

<p>Site establishment activities including:</p> <p>(a) Vegetation clearing of drill pad area</p> <p>(b) Topsoil stripping and stockpiling</p> <p>(c) Drill pad compaction</p> <p>(d) Excavation and lining of drill water sump</p> <p>(e) Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</p> <p>(f) Erection of fuel storage tank</p> <p>(g) Erection of safety barrier</p>	<p>8. Destruction and / or disturbance of onsite fauna and flora.</p>	<p>Loss of Fauna and Flora</p>	<p>Construction Phase</p>	<p>10</p>	<p>13. The removal of vegetation within the drill pad area will be minimized.</p> <p>14. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts.</p> <p>15. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment.</p> <p>16. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire.</p>	<p>7</p>
	<p>9. Soil disturbance and topsoil stockpiling</p>	<p>Loss of soil resources</p>	<p>Construction Phase</p>	<p>11</p>	<p>17. In the event that the drill pad is cleared of all vegetation, lower</p>	<p>7</p>

(h) Waste generation and management	resulting in soil compaction and erosion.				<p>blade clearing will be undertaken prior to the stripping of topsoil.</p> <p>18. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad.</p> <p>19. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>20. Vegetation removed through lower blade clearing will be mixed with topsoil to increase organic content and to preserve the seed bank in order to aid rehabilitation efforts.</p> <p>21. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>22. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p>	
	10. Dust emission resulting from site clearing, soil stripping and construction activities (including	Dust emissions	Construction Phase	10	23. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as	6

	vehicle entrained dust).				and when needed. 24. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.	
	11. Visual Impact affecting visual character and "sense of place".	Loss in aesthetics	Construction Phase	6	25. The shaded office area, portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour. Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.	5
	12. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Construction Phase	8	26. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 27. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site. 28. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.	7

	13. Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase		29. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	
Exploration drilling and core sample collection and storage including:	14. Water and soil pollution resulting from disposal of drill fluids.	Loss of water resources, loss of soil resources	Operational Phase	12	30. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation. 31. The sump will be constructed to divert stormwater away and / or around the sump to avoid clean stormwater inflow.	5
(a) Scout and delineation drilling (b) Drill maintenance and re-fuelling (c) Core sample collection and storage (d) Drill fluid collection, storage and evaporation (e) Waste generation and management	15. Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	Loss of soil resources	Operational Phase	11	32. In the event that raise blade clearing is not undertaken, and the drill pad is cleared, topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3. 33. The topsoil stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. 34. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	7

	<p>16. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.</p>	<p>Loss of water resources, loss of soil resources</p>	<p>Operational Phase</p>	<p>35. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity.</p> <p>36. Oils and lubricant will be stored within secondary containment structures.</p> <p>37. Where practicable, vehicle maintenance will be undertaken off-site.</p> <p>38. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil.</p> <p>39. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop.</p> <p>40. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified.</p> <p>41. A sufficient number of waste receptacles will be provided.</p> <p>42. Waste separation will be</p>	<p>5</p>
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					<p>undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste).</p> <p>43. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.</p> <p>44. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>	
	17. Dust emissions from drilling and general site activities (including vehicle entrained dust)	Increase in dust emissions	Operational Phase	10	<p>45. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement.</p> <p>46. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p>	6
	18. Visual Impact affecting visual character and "sense of place"	Loss in aesthetic value	Operational Phase	6	<p>47. Visual impact of structures will be mitigated through measures as included in Item 35.</p> <p>48. Visual dust dispersion will be mitigated through measures as included in Item 33.</p>	5
	19. Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Loss of fauna	Operational Phase	6	<p>49. Site activities will be conducted during the day only to avoid night time noise disturbances.</p>	4



	20. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Operational Phase	10	50. Access control procedures must be agreed on with farm owners.	8
	21. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Operational Phase	8	51. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 52. The landowner (the Department of Rural Development and Land Reform) will be notified of unauthorised persons encountered on site. 53. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.	7
	22. Impact on the pans and associated ecosystems in the area.	Loss of sensitive environments,	Operational Phase	12	54. The prospecting areas must be clearly demarcated. 55. No prospecting activities may be undertaken within the pan areas.	5
		loss of fauna, loss of flora			56. All site plans must indicate the presence of pans.	

<p>Removal of temporary infrastructure including:</p> <p>(a) Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay</p> <p>(b) Borehole capping</p> <p>Drill pad rehabilitation including:</p> <p>(a) Ripping of drill pad and access road</p> <p>(b) Re-spreading of stockpiled topsoil</p> <p>(c) Re-vegetation</p>	<p>23. Destruction and / or disturbance of onsite fauna.</p>	<p>Loss of sensitive environments, loss of fauna, loss of flora</p>	<p>Decommissioning</p>	<p>10</p>	<p>57. Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes.</p> <p>58. Drill holes must be permanently capped as soon as is practicable</p>	<p>7</p>
	<p>24. Dust emissions from decommissioning activities (including vehicle entrained dust).</p>	<p>Increase in dust emissions</p>	<p>Decommissioning</p>	<p>9</p>	<p>59. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement.</p> <p>60. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p>	<p>6</p>
	<p>25. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.</p>	<p>Loss of cattle</p>	<p>Decommissioning</p>	<p>10</p>	<p>61. Access control procedures must be agreed on with farm owners and all staff trained.</p>	<p>8</p>
	<p>26. Potential water and soil pollution resulting from hydrocarbon spills</p>	<p>Loss of water resources, loss of soil resources</p>	<p>Decommissioning</p>	<p>12</p>	<p>62. All fuel storage tanks will be emptied prior to removal.</p>	<p>7</p>

				<p>63. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination.</p> <p>64. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>	
	27. Soil erosion resulting from the respreading of topsoil before vegetation is re-established.	Loss of soil resources	Decommissioning	<p>65. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.</p> <p>66. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist.</p> <p>67. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding.</p> <p>68. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.</p>	7

## 10 Summary of specialist reports.

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

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Hydrogeological Studies	<ul style="list-style-type: none"> <li>• It can be concluded that the prospecting activity will cause minimal impact on the water resources. The prospecting right activity should take place during dry seasons where the water percentages in the surrounding streams and wetlands are exceptionally low.</li> <li>• Drilling activity should not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site.</li> <li>• Extreme caution should be taken during prospecting, owing to the non- perennial river and numerous wetlands existing within and nearby the project area. No washing of any mechanical equipment or vehicles will be allowed near the water resources.</li> <li>• All the wetlands and non-perennial rivers will be buffered as no go area preferably a 100m buffer will apply.</li> <li>• The core logs of boreholes with mineral of interest should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.</li> </ul>	X	

Hydrological Studies	<ul style="list-style-type: none"> <li>• The coal prospecting will cause minimal impact on the water resources. The prospecting right activity should take place during dry seasons where the water percentages in the surrounding streams and wetlands are very low.</li> <li>• Drilling activity should not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site.</li> <li>• Extreme caution should be taken during prospecting, owing to the perennial rivers (Hlelo stream) and the Channelled valley-bottom wetlands, flat wetlands, valleyhead seep and depression wetlands existing within the project area. No washing of any mechanical equipment or vehicles will be allowed near the water resources.</li> </ul>	<b>X</b>	
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## 11 Environmental impact statement.

Summary of the key findings of the environmental impact assessment

The proposed prospecting area is situated within a region with flat-lying ground level, topography in the Northern side. Water during rainy seasons flows from the area of high elevation in the South east to the area of low elevation in the northern side of the project area indicated or displayed by contour lines.

The predominant wind direction as measured at the Piet Retief Weather Station, is from the North East and wind speeds are higher during the spring and summer months. Any emissions which might emanate from the prospecting activities are therefore likely to disperse in this direction and the impact will be more significant during the spring and summer months.

The proposed prospecting site is classified as arable land with a moderate to medium grazing capacity with cultivation as the predominant land use in the area.

It is currently known that, there is a registered land claim lodged on one of the applied portion- Prospecting Right and an enquiry was submitted to the Mpumalanga: Department of Rural Development and Land Reform for additional information regarding the claimants.

The protection of water quality and availability has been identified as aspects of key importance within the municipality and the general region. A high dependency on ground water resources has been identified and this will be confirmed during stakeholder consultation. According to the Department of Water Affairs Aquifer Vulnerability of South Africa Report, the area in which the project is located is associated with aquifers with the most vulnerability ratings.

There are three perennial rivers crossing the proposed prospecting area. The identified water courses (including river and streams) may be regarded as unique habitats which support regional ecological functioning.

The conservation status of the area is least threatened and only about 1% of the vegetation type has already been transformed.

Graves were not identified within the prospecting area during site assessment. However, the landowner of ST Helena, Mr Kubheka highlighted that the area contains graves.

## 12 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 3)

### ii) **Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.**

Increased ambient noise levels resulting from drilling and increased traffic movement during all prospecting phases as well as drilling activities.

Potential water and soil pollution impacts resulting from chemical (oil, diesel, hydraulic and drilling fluid) spills and soil erosion which may impact on environmental resources utilized by landowners.

Potential water and soil pollution impacts resulting from chemical (oil, diesel, hydraulic and drilling fluid) spills and soil erosion which may impact on ecosystem functioning.

Increased vehicle activity within the area resulting in the possible destruction and disturbance of fauna and flora.

Poor access control to farms which may impact on cattle movement, breeding and grazing practices.

Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.

Potential visual impacts caused by drilling activities.

Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

## 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 authorization)

The objectives of the EMPr will be to:

Provide sufficient information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts.

Provide sufficient information and guidance to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.

Ensure an approach that will provide the necessary confidence in terms of environmental compliance.

Provide a management plan that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures, it is anticipated that the identified social & environmental Impacts can be managed and mitigated effectively.

Through the implementation of the mitigation and management measures it is expected that:

Noise impacts can be managed through consultation and through the restriction of operating hours;

The pollution of soil and water resources can be effectively managed through containment;

Ecological impact can be managed through the implementation of pollution prevention measures, minimizing land clearing, restricting working hours (faunal disturbance) and rehabilitation.

Concerns regarding access control to farms can be managed through the development and ensuring compliance to an appropriate access control procedure.

Risks associated with crime can be mitigated through avoiding recruitment activities on site, as well as monitoring and reporting.

Visual impact can be minimized through giving consideration to drill site infrastructure placement and materials used.

## **14 Aspects for inclusion as conditions of Authorisation.**

(Any aspects which must be made conditions of the Environmental Authorisation)

The following conditions should be included into the Authorisation:

A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMRE prior to the commencement of these activities;

No activities may be undertaken in the pans;

Heritage Impact Assessment must be undertaken where roads will be cleared and where drilling sites will be established, prior to the commencement of these activities; and

No activities, with the exception of the driving to fetch, may take place within 100 m from any river.



## **15 Description of any assumptions, uncertainties and gaps in knowledge.**

(Which relate to the assessment and mitigation measures proposed)

The following assumptions, uncertainties and gaps are applicable to this project:

Due to considerable time constraints allowed for the assessment of the impacts, and at the time of compiling the draft BAR and EMPr:

- The Stakeholder Consultation is not yet complete.
- Not all landowners were consulted in person.
- Details from the DWS regarding Water Use Licensing requirements is not yet available.
- Details regarding the presence and status of land claims are available.
- No Heritage Impact Assessment was undertaken.
- Detailed site layout is available.
- The detailed site visit by the EAP was undertaken, on the 15<sup>th</sup> of July 2020.

## **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**

It is the opinion of the EAP that the activity may be authorized.

The proposed prospecting area is targeted as, historically, Coal occurrences are known in the area, and number of these have been exploited for Coal in the past.

The site is therefore regarded as the preferred site and alternative sites are not considered.

The option of not approving the activities will result in a significant loss to valuable information regarding the mineral status (in terms of Coal seams) present on these properties. In addition to this, should economical reserves be present, and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

### **ii) Conditions that must be included in the authorisation**

The following conditions should be included into the authorisation:

A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMRE prior to the commencement of these activities;

No activities may be undertaken in any waterbody;

Heritage Impact Assessment must be undertaken where roads will be cleared and where drilling sites will be established, prior to the commencement of these activities; and

No activities, except for the driving to fetch water, may take place within 100 m from any watercourse.

## **17 Period for which the Environmental Authorisation is required.**

The Prospecting Right has been applied for a period of five years. The Environmental Authorisation should therefore allow for the five years of prospecting and one year for decommissioning and rehabilitation.

## **18 Undertaking.**

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

Undertaken by the EAP and the client is provided for in Section 2 of the EMPr.

## **19 Financial Provision.**

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

The financial provision for the environmental rehabilitation and closure of any mine/prospecting and its associated operations forms an integral part of the MPRDA. Sections 41(1), 41(2), 41(3) and 45 of the MPRDA deal with the financial provision for rehabilitation and closure. During 2012 the DMRE made updated rates available for the calculation of the closure costs, where contractor's costs are not available these are used in assessments.

The "Guideline Document for the Evaluation of Financial Provision made by the Mining Industry" was developed by the DMRE in January 2005, in order to empower the personnel at Regional DMRE offices to review the quantum determination for the rehabilitation and closure of mining sites.

With the determination of the quantum for closure it must be assumed that the infrastructure has no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMRE guidelines and is based, where possible, on actual costs provided by a third-party contractor. The closure costs are as follows:

The following sections presents the methodology for the determination of the financial provision.

**i) Explain how the aforesaid amount was derived.**

(The following section details the methodologies adopted to calculate the quantities, associated rehabilitation (clean closure) rates and eventually the final (clean) closure cost estimate)

Most important to note is that the prescribed method for estimating a closure costs, as provided for by the DMRE in the form of the Guideline Document for the Evaluation of Financial Provisions, only acts as a guideline, and therefore indicates the minimum requirements for assessing and reporting on a closure cost estimate.

## 20 Method of Assessment.

As mentioned before, Singo Consulting (Pty) Ltd made use of the Guideline Document for the Evaluation of Financial Provisions made by the Mining Industry. The following table presents the step-by-step details on how the financial provision has been derived. For the purposes of determining the quantum for closures, it is assumed that the infrastructure will have no salvage value.

**Table 20:1: DMRE financial Provision Methodology.**

Step	Description	DMRE Applicable Table	Outcomes
1	Determine primary mineral and saleable mineral by-products	Table B.12	Mineral: Coal
2	Determine Risk Class	Table B.12	<b>Primary Risk Class: C</b> (Small operation, no waste, no processing). Risk Class C is considered a low risk with a low probability of occurrence of the impact with a negligible consequence.

3	Determine the Area Sensitivity	Table B.4	<b>Medium to High Sensitivity.</b> The area is largely disturbed through cultivation and livestock; however, the natural state is still present in good a condition. The landowners are in close proximity to the proposed prospecting activities, although the area is not densely inhabited, and no well-established communities are present. The land in question is used for cattle farming and therefore the local communities (in this case the farmers) drive the bulk of their income directly from the area. The area can therefore be considered sensitive to further development past the prospecting application, should the prospecting activities prove that the area is economically viable for the purposes of a mining right application, which will compromise the existing economic activity.
4.1	Determine the level of information	N/A	Limited information is available which is based on desktop investigations and consultation with stakeholders.

Step	Description	DMRE Applicable Table	Outcomes
4.2	Determine the closure components	Table B.5	See Table 23 of this report.
4.3	Determine the unit rates for closure components	Table B.6	See Table 23 of this report. The multiplication factor for all components is 1.00.
4.4	Determine and apply the weighting factors	Table B.7 Table B.8	Weighting factor 1 (Nature of the terrain): 1 (generally flat terrain) Weighting factor 2 (Peri-urban, less than 150km from a developed urban area): 1.05(Rural/Urban).
4.5	Identify areas of disturbance	N/A	No areas of disturbance are considered in this assessment. The area in which the prospecting activities are planned is considered to be undisturbed.
4.6	Identify closure costs from specialist studies	Table B.9	Due to the fact that the operation in question is only a prospecting operation, no residual impacts should take place. During the Life of Prospecting and ongoing rehabilitation, the self-succession results should be assessed and monitored. If self-succession does not take place satisfactorily the client may be subjected to additional specialist investigations (ecological and Pedology) to determine seeding and re-vegetation requirements.

4.7	Calculate Closure Costs	Table B.10	See the following section.
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### **Quantity Estimation**

For the purposes of this assessment, Singo Consulting can confirm that the method adopted to obtain and compile the schedule of quantities is sound, correct, and provides detail that is required by the DMRE. The information will allow for continued monitoring and updating of quantities and provides the ideal platform to manage and monitor the actual on-site rehabilitation measures and costs incurred.

### **Determination of Rates**

The method of determining the applicable rehabilitation rates is based on practical experience and information by third party contractors.

The following table summarises the unit rates for closure components as specified in the DMRE Guideline Document and indicates which rates were used by Singo Consulting in this assessment.

## Preliminary Cost Estimation

The following table presents the closure cost rehabilitation undertaken in terms of the DMRE Guideline Document.

### Financial Provision

The financial provision required by the holder of the mining right must be provided for by one or more of the following methods in order to achieve the total quantum of rehabilitation and remediation of environmental impacts and damage as well as final closure:

- Approved dedicated trust fund;
- Financial guarantee from a South African registered bank or any other approved financial institution;
- Cash deposit to be deposited at the office of the Regional Manager; or
- Any other manner determined by the Minister.

The client is required to annually assess the total quantum of environmental liability for the operation and ensure that financial provision is sufficient to cover the current liability (in the event of premature closure), as well as the end of life liability.

As per Government Legislature, the client is required to ensure full financial cover for the current liability at any point in the life of the operation. Pecuniary provision must be made for the shortfall between the existing trust fund balance and the premature closure or current environmental rehabilitation liability if applicable.

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

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

The amount to finance the prospecting activities will amount R 46624.00. Financing will be sourced from the capital expenditure as planned by the company; this capital will come from the treasury of the company. The company's annual financial statement was also submitted to the DMRE for confirmation that the company has available funding to implement this proposed project.

It should be noted that the current expenditure provided for in the Prospecting Work Programme does not include the calculated Financial Provision as included into this BAR and EMPr, as these values were not available at the time of the submission of the Prospecting Work Programme.



The provision for closure, should be updated into the Prospecting Work Programme prior the decision by the DMRE should this decision be positive.

## 21 Financial Provision.



Applicant:  
Evaluator: **Abel Mojapelo**

### CALCULATION OF THE QUANTUM

Ref No.: **MP30/5/1/1/2/ 17388 PR**  
Date: **17-Jun-22**

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	6333,69	49	0,02	1	6207,0162
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 ( C )	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,2	1	27024,84
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
<b>Sub Total 1</b>							<b>33231,8562</b>
1	Preliminary and General		3987,822744		<b>weighting factor 2</b>		3987,822744
						<b>1</b>	
2	Contingencies			3323,18562			3323,18562
<b>Subtotal 2</b>							<b>40542,86</b>
<b>VAT (15%)</b>							<b>6081,43</b>
<b>Grand Total</b>							<b>46624</b>

Singed: Abel Mojapelo  
Date: 17/06/2022



## **22 Specific Information required by the competent Authority.**

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

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

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

No specific report was generated for the purposes of the socio-economic conditions.  
All findings are presented hereafter:

## **23 Potential impacts on communities, individuals or competing land uses in close proximity.**

The following impacts are regarded as community impacts:

- o Potential water and soil pollution resulting from spills and soil erosion;
- o Noise due to the undertaking of the drilling;
- o Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
- o Influx of persons (job seekers) to site because of increased activity and the possible resultant increase in opportunistic crime; and
- o Visual Impact;
  
- o Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

## **24 Measures to manage the potential impacts on communities, individuals or competing land uses in close proximity.**

- o Pollution Prevention

- Mitigation and management measures must be implemented to prevent environmental pollution which may impact on environmental resources utilized by communities, landowners and other stakeholders. These mitigation and management measures are discussed in the following section.
- Noise due to the undertaking of the prospecting activities;
  - Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of drilling. Mitigation alternatives are limited to timing of the drilling which may affect aspects such as hunting activities on game farms.
  - Farm owners must be consulted and be informed of activities which may affect cattle being held in restricted holding pens, with a view to prevent possible injury or damage because of animals being startled by the noise.
  - Site activities will be conducted during the day only to avoid night time noise disturbances and night time collisions with fauna.
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
  - Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
- Influx of persons (job seekers) to site because of increased activity and the possible resultant increase in opportunistic crime;
  - Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
  - The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.
  - If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.
- Visual Impact
  - Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered to conserve water resources.

- The portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour.
  - Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.
  - A waste management system will be implemented, and sufficient waste bins will be provided for on-site. A fine system will be implemented to further prohibit littering and poor housekeeping practices.
- Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

**(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).

As outlined in Section d) ii), page 15 of this report, prospecting will be undertaken in phases; the first phase being a desktop assessment, followed drilling.

Based on the outcome of these activities, desktop study and potential drill sites will be determined. Potential heritage impact will only occur once desktop study has been used to identify sites for drilling, and it is therefore recommended that the Heritage Impact Assessment be undertaken prior to drilling activities, and that the Heritage Impact Assessment be conducted over identified localised drill sites and access routes, as opposed to the entire exploration area.

This recommendation will be submitted to the South African Heritage Resource Agency (SAHRA) for approval.

## **25 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.

## **PART B**

### **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

#### **26 Environmental management programme report.**

**a) Details of the EAP**

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

The requirement for the provision of the details and expertise of the EAP are included in PART A, section 1(a).

**b) Description of the Aspects of the Activity**

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

The requirement to describe the aspects of the activity that are covered by the Draft Basic Assessment Report and Environmental Management Programme Report is already included in PART A, section (1)(h).

**c) Composite Map**

(Provide a map 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)

**d) Description of Impact management objectives including management statements.**

**i) Determination of closure objectives.**

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

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, drilling programme will be initiated. The location and extent of drill sites can therefore not be determined at this stage.

The rehabilitation plan is developed on the basis that the rehabilitated areas are safe, stable, non-polluting and can support a self-sustaining ecosystem similar to surrounding natural environment. To ensure that the rehabilitation plan is aligned with the closure objective, a high-level risk assessment of the prospecting components has been undertaken to establish the potential risks associated therewith.

The closure objectives are to:

Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.

Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;

To establish rehabilitated area which is not subject to soil erosion which may result in the loss of soil, degradation of the environment and cause pollution of surface water resources; and

Restore disturbed area and re-vegetate these areas with grass species naturally occurring in the area to restore the ecological function of such areas as far as is practicable.

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

No water needed for this prospecting operation due to selected air flush method as opposed to water flush. However, in terms of Government Notices Regulation 399, the applicant can be allowed to abstract 75m<sup>3</sup> of groundwater per hectare per annum from groundwater within the Quaternary Catchment. It is currently not anticipated that this quantity will be exceeded. **It is important to note that air flush method does not require the use of water.**

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

No, water use license will only be applied if section 21 activities are triggered.

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<b>Phase 1: Desktop Study</b>					
Data collection and assessment (desktop only)	Planning	Entire property	1. No mitigation proposed	Identification of the potential Coal seams and prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A

<b>Phase 3: Drilling</b>					
Site Access	Construction	Less than 16 000m <sup>2</sup>	<p>2. Map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMRE and DWS. Upon agreement of the location of the activities can the applicant proceed.</p> <p>3. Use existing track and roads in all instances as far as is practicable.</p> <p>4. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided.</p>	<p>The prospecting activities must be undertaken in line with the approved Prospecting Work Programme.</p> <p>The financial provision required for rehabilitation must be guaranteed before the commencement of prospecting activities.</p> <p>Activities should stay clear of pans and outside of the 500m river buffer in order to avoid the need to apply for a Section 21 (c) and (i) Water Use License.</p>	Concurrently with the completion of prospecting activities in an area.

		<p>5. Site activities will be conducted during the day only to avoid noise disturbances and night time collisions with fauna.</p> <p>6. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p> <p>7. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts.</p> <p>8. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.</p> <p>9. Site activities will be conducted during day only to avoid noise disturbances at night.</p> <p>10. Access control procedures must be agreed on with farm owners and staff trained.</p> <p>11. Prior to the establishment of new access roads, a heritage</p>		
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			impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented		
<p>Site establishment activities including:</p> <p>(i) Vegetation clearing of drill pad area</p> <p>(j) Topsoil stripping and stockpiling</p> <p>(k) Drill pad compaction</p> <p>(l) Excavation and lining of drill water sump</p> <p>(m) Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</p> <p>(n) Erection of fuel storage tank</p> <p>(o) Erection of safety barrier</p> <p>(p) Waste generation and</p>	Construction	Approximately 4000m <sup>2</sup>	<p>12. The removal of vegetation within the drill pad area will be minimized.</p> <p>13. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts.</p> <p>14. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment.</p> <p>15. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire.</p> <p>16. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil.</p>	<p>The prospecting activities must be undertaken in line with the approved Prospecting Work Programme.</p> <p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	Concurrently with the completion of prospecting activities in an area.

management			<p>17. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad.</p> <p>18. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>19. Vegetation removed through lower blade clearing will be mixed with topsoil to increase organic content and to preserve the seed bank in order to aid rehabilitation efforts.</p> <p>20. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>21. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p> <p>22. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed.</p>		
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			<p>23. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.</p> <p>24. The shaded office area, portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour. Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.</p> <p>25. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>26. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.</p> <p>27. If deemed necessary, the</p>		
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			<p>South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>28. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented</p>		
<p>Exploration drilling and core sample collection and storage including:</p> <p>(a) Scout and delineation drilling</p> <p>(b) Drill maintenance and re-fuelling</p> <p>(c) Core sample collection and storage</p> <p>(d) Drill fluid collection, storage and evaporation</p> <p>(e) Waste generation and management</p>	Operational	<p>Included into the Site establishment size of 18 450m<sup>2</sup></p>	<p>29. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation.</p> <p>30. The sump will be constructed to divert stormwater away and / or around the sump to avoid clean stormwater inflow.</p> <p>31. In the event that raise blade clearing is not undertaken, and the drill pad is cleared, topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>32. The topsoil stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad.</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

		<p>33. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.</p> <p>34. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity.</p> <p>35. Oils and lubricant will be stored within secondary containment structures.</p> <p>36. Where practicable, vehicle maintenance will be undertaken off-site.</p> <p>37. In the event that vehicle maintenance is undertaken onsite (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil.</p> <p>38. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop.</p>		
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			<p>39. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified.</p> <p>40. A sufficient number of waste receptacles will be provided.</p> <p>41. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste).</p> <p>42. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.</p> <p>43. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p> <p>44. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement.</p>		
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			<p>45. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p> <p>46. Visual impact of structures will be mitigated through measures as included in Item 35.</p> <p>47. Visual dust dispersion will be mitigated through measures as included in Item 33.</p> <p>48. Site activities will be conducted during the day only to avoid night time noise disturbances.</p> <p>49. Access control procedures must be agreed on with farm owners.</p> <p>50. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p>		
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			<p>51. The landowner (the Department of Rural Development and Land Reform) will be notified of unauthorised persons encountered on site.</p> <p>52. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>53. The prospecting areas must be clearly demarcated.</p> <p>54. No prospecting activities may be undertaken within the pan areas.</p> <p>55. All site plans must indicate the presence of pans.</p>		
<p>Removal of temporary infrastructure including:</p> <p>(a) Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay</p>	Decommissioning	Included into the Site establishment size of 18 450m <sup>2</sup>	<p>56. Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes.</p> <p>57. Drill holes must be permanently capped as soon as is practicable.</p>	The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.	Concurrently with the completion of prospecting activities in an area.



<p>(b) Borehole capping</p> <p>Drill pad rehabilitation including:</p> <p>(a) Ripping of drill pad and access road</p> <p>(b) Re-spreading of stockpiled topsoil</p> <p>(c) Re-vegetation</p>			<p>58. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement.</p> <p>59. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p> <p>60. Access control procedures must be agreed on with farm owners and all staff trained.</p> <p>61. All fuel storage tanks will be emptied prior to removal.</p> <p>62. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination.</p> <p>63. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>	<p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	
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			<p>64. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.</p> <p>65. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist.</p> <p>66. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding.</p> <p>67. An effective vegetation cover of 45% must be achieved. Reseeding will be undertaken if this cover has not been achieved after six months.</p>		
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iv) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity is presented in the following table.

e) Impact Management Outcomes

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

<b>ACTIVITY</b> (whether listed or not listed).	<b>POTENTIAL IMPACT</b>	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> (In which impact is anticipated)	<b>MITIGATION TYPE</b>	<b>STANDARD TO BE ACHIEVED</b>
<b>Phase1: Data Acquisition and Desktop Study</b>					
Data collection and assessment (desktop only)	1. None identified.	N/A	Planning	Control potential deviations from the approved Prospecting Work Programme through the effective implementation of the data acquisition and desktop study.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
<b>Phase 2: Drilling</b>					
Site Access	2. Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	3. Soil compaction resulting from repeated use of access roads to drill sites.	Loss of soil resources	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMPr.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.
	4. Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of fauna	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of fauna	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	6. Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase	Control through the clear delineation of the prospecting area.	Comply with the requirements by SAHRA.  No damage may result on heritage and cultural significant sites.
Site establishment activities including:  (a) Vegetation clearing of drill pad area (b) Topsoil stripping and stockpiling (c) Drill pad compaction	7. Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
(d) Excavation and lining of drill water sump (e) Erection of temporary site office shaded area,	8. Soil disturbance and topsoil stockpiling resulting in soil compaction and	Loss of soil resources	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of a soil management programme in	Remain within the ambits of the Prospecting Work Programme and Environmental

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
potable ablution facilities and water storage tanks and core bay	erosion.			terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMPr.	Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
(f) Erection of fuel storage tank (g) Erection of safety barrier (h) Waste generation and management	9. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	Dust emissions	Construction Phase	Control to the implementation of dust suppression methods, when this is required. Dust suppression methods could include wet suppression.	Remain within the designated area demarcated for prospecting activities.  Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	10. Visual Impact affecting visual character and "sense of place".	Loss in aesthetics	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  No removal of vegetation outside of demarcated areas.
	10 Influx of persons (job seekers) to site as a result of increased activity	Increase in petty crimes	Construction Phase	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of	Maintain a 100% crime free area within the control of the prospecting

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	resulting in increased incidents of theft and opportunistic crime.			communication.	activities and applicant.
	11. Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks.	Comply with the requirements by SAHRA.  No damage may result on heritage and cultural significant sites.
Exploration drilling and core sample collection and storage including:  (a) Scout and delineation drilling (b) Drill maintenance and re-fuelling (c) Core sample collection and storage (d) Drill fluid collection, storage and evaporation (e) Waste generation and management	12. Water and soil pollution resulting from disposal of drill fluids.	Loss of water resources, loss of soil resources	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMPr.  Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	13. Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	Loss of soil resources	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMPr	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.
	14. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	Loss of water resources, loss of soil resources	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.
	15. Dust emissions from drilling and general site activities (including vehicle entrained dust)	Increase in dust emissions	Operational Phase	Control to the implementation of dust suppression methods, when this is required. Dust suppression methods could include wet suppression.	Remain within the designated area demarcated for prospecting activities.  Remain within the National Environmental Management: National Air Quality Standards (GN 1210: 2009)

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
					communities.
	16. Visual Impact affecting visual character and "sense of place"	Loss in aesthetic value	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of the conditions in the EMPr.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  No removal of vegetation outside of demarcated areas.
	17. Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Loss of fauna	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	18. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the limiting of the activities to the day time and the	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.



ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				implementation of an open and transparent channel of communication.	
	19. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Operational Phase	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Maintain a 100% crime free area within the control of the prospecting activities and applicant.
	20. Impact on the pans and associated ecosystems in the area.	Loss of sensitive environments, loss of fauna, loss of flora	Operational Phase	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
Removal of temporary infrastructure including:	21. Destruction and / or disturbance of on-site fauna.	Loss of sensitive	Decommissioning	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Work

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED
(a) Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay (b) Borehole capping  Drill pad rehabilitation including:		environments, loss of fauna, loss of flora		Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Programme and Environmental Authorisation.
(a) Ripping of drill pad and access road (b) Re-spreading of stockpiled topsoil (c) Re-vegetation	22. Dust emissions from decommissioning activities (including vehicle entrained dust).	Increase in dust emissions	Decommissioning	Control to the implementation of dust suppression methods, when this is required. Dust suppression methods could include wet suppression.	Remain within the designated area demarcated for prospecting activities.  Remain within the National Environmental Management: National Air Quality Standards (GN 1210: 2009) guidelines for rural communities.
	23. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Decommissioning	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	STANDARD TO BE ACHIEVED

				Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	
	24. Potential water and soil pollution resulting from hydrocarbon spills.	Loss of water resources, loss of soil resources	Decommissioning	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	25. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	Loss of soil resources	Decommissioning	Control through the clear delineation of the prospecting area.  Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.  Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMPr.	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

## f) Impact Management Actions

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

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
<b>Phase 1: Data Acquisition and Desktop Study</b>				
Data collection and assessment (desktop only)	1. None identified.	1. No mitigation proposed	N/A	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

### Phase 2: Drilling

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	Site establishment	<p>1. Site activities will be conducted during day only to avoid night time noise disturbances and night time collisions with fauna.</p> <p>2. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p>		

	3. Soil compaction	3. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts.  4. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.
	4. Vehicle traffic noise impact affecting cattle and / or wildlife.	5. Site activities will be conducted during day to avoid night time noise disturbances.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

<b>ACTIVITY</b> (whether listed or not listed)	<b>POTENTIAL IMPACT</b>	<b>MITIGATION TYPE</b>	<b>TIME PERIOD FOR IMPLEMENTATION</b>	<b>COMPLIANCE WITH STANDARDS</b>
	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	6. Access control procedures must be agreed on with farm owners and staff trained.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	6. Potential destruction of heritage resources.	7. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Concurrently with the completion of prospecting activities	Comply with the requirements by SAHRA.  No damage may result on heritage and cultural significant sites.
Site establishment activities including: (a) Vegetation clearing of drill pad area (b) Topsoil stripping and stockpiling	7. Destruction and / or disturbance of on-site fauna and flora.	8. The removal of vegetation within the drill pad area will be minimized.  9. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
(c) Drill pad compaction (d) Excavation and lining of drill water sump (e) Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay (f) Erection of fuel storage tank (g) Erection of safety barrier (h) Waste generation and management		10. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment.  11. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire.		
	8. Soil disturbance and topsoil stockpiling resulting in soil compaction and erosion.	12. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil.  13. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.
ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS

		<p>14. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>15. Vegetation removed through lower blade clearing will be mixed with topsoil to increase organic content and to preserve the seed bank in order to aid rehabilitation efforts.</p> <p>16. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>17. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p>		
	9. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	18. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed.	Concurrently with the completion of prospecting activities	Remain within the designated area demarcated for prospecting activities. Remain within the National

<b>ACTIVITY</b> (whether listed or not listed)	<b>POTENTIAL IMPACT</b>	<b>MITIGATION TYPE</b>	<b>TIME PERIOD FOR IMPLEMENTATION</b>	<b>COMPLIANCE WITH STANDARDS</b>
		19. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.		Environmental Management: National Air Quality Standards (GN 1210: 2009 guidelines for rural communities.

	10. Visual Impact affecting visual character and "sense of place".	20. The shaded office area, portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour. Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  No removal of vegetation outside of demarcated areas.
	11. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	21. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.		Maintain a 100% crime free area within the control of the prospecting activities and applicant.



ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		<p>22. The landowner (all private and state landowners) will be notified of unauthorised persons encountered on site.</p> <p>23. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p>		
	12. Potential destruction of heritage resources.	24. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Concurrently with the completion of prospecting activities	Comply with the requirements by SAHRA. No damage may result on heritage and cultural significant sites.
Exploration drilling and core sample collection and storage including:  (a) Scout and	13. Water and soil pollution resulting from disposal of drill fluids.	25. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.  Retain topsoil integrity for the reuse in rehabilitation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
delineation drilling (b) Drill maintenance and re-fuelling (c) Core sample collection and storage (d) Drill fluid collection, storage and evaporation Waste generation and management		26. The sump will be constructed to divert stormwater away and / or around the sump to avoid clean stormwater inflow.		
	14. Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	27. In the event that raise blade clearing is not undertaken, and the drill pad is cleared, topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3. 28. The topsoil stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. 29. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	<p>15. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.</p>	<p>30. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity.</p> <p>31. Oils and lubricant will be stored within secondary containment structures.</p> <p>32. Where practicable, vehicle maintenance will be undertaken off-site.</p> <p>33. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil.</p> <p>34. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop.</p>	<p>Concurrently with the completion of prospecting activities</p>	<p>Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.</p> <p>Retain topsoil integrity for the reuse in rehabilitation.</p>

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		<p>35. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified.</p> <p>36. A sufficient number of waste receptacles will be provided.</p> <p>37. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste).</p> <p>38. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.</p> <p>39. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>		

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	16. Dust emissions from drilling and general site activities (including vehicle entrained dust)	<p>40. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement.</p> <p>41. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p>	Concurrently with the completion of prospecting activities	<p>Remain within the designated area demarcated for prospecting activities.</p> <p>Remain within the National Environmental Management: National Air Quality Standards (GN 1210: 2009) guidelines for rural communities.</p>
	17. Visual Impact affecting visual character and "sense of place"	<p>42. Visual impact of structures will be mitigated through measures as included in Item 35.</p> <p>43. Visual dust dispersion will be mitigated through measures as included in Item 33.</p>	Concurrently with the completion of prospecting activities	<p>Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.</p> <p>No removal of vegetation outside of demarcated areas.</p>
	18. Vehicle traffic and drill noise impact affecting wildlife game farm animals.	44. Site activities will be conducted during the day only to avoid night time noise disturbances.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	19. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	45. Access control procedures must be agreed on with farm owners.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
	20. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	<p>46. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>47. The landowner (the Department of Rural Development and Land Reform) will be notified of unauthorised persons encountered on site.</p> <p>48. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p>	Concurrently with the completion of prospecting activities	Maintain a 100% crime free area within the control of the prospecting activities and applicant.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	21. Impact on the pans and associated ecosystems in the area.	49. The prospecting areas must be clearly demarcated. 50. No prospecting activities may be undertaken within the pan areas. 51. All site plans must indicate the presence of pans.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.
Removal of temporary infrastructure including:  (a) Removal of temporary site office shaded area, potable ablution faculties, water storage tanks and core bay (b) Borehole capping  Drill pad rehabilitation including:  (a) Ripping of drill pad	22. Destruction and / or disturbance of on-site fauna.	52. Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes.  53. Drill holes must be permanently capped as soon as is practicable	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
<p>and access road</p> <p>(b) Re-spreading of stockpiled topsoil</p> <p>(c) Re-vegetation</p>				
	<p>23. Dust emissions from decommissioning activities (including vehicle entrained dust).</p>	<p>54. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement.</p> <p>55. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p>	<p>Concurrently with the completion of prospecting activities</p>	<p>Remain within the designated area demarcated for prospecting activities.</p> <p>Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.</p>
	<p>24. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.</p>	<p>56. Access control procedures must be agreed on with farm owners and all staff trained.</p>	<p>Concurrently with the completion of prospecting activities</p>	<p>Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.</p>
	<p>25. Potential water and soil pollution resulting from hydrocarbon spills.</p>	<p>57. All fuel storage tanks will be emptied prior to removal.</p>	<p>Concurrently with the completion of prospecting activities</p>	<p>Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.</p>



ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		<p>58. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination.</p> <p>59. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>		
	<p>26. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.</p>	<p>60. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.</p> <p>61. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist.</p>	<p>Concurrently with the completion of prospecting activities</p>	<p>Remain within the ambits of the Prospecting Work Programme and Environmental Authorisation.</p>

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		<p>62. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding.</p> <p>63. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.</p>		

## **27 Financial Provision.**

### **(1) Determination of the amount of Financial Provision.**

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

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, drilling programme will be initiated. The location and extent drill sites can therefore not be determined at this stage.

The rehabilitation plan is developed on the basis that the rehabilitated areas are safe, stable, non-polluting and are able to support a self-sustaining ecosystem similar to surrounding natural environment. To ensure that the rehabilitation plan is aligned with the closure objective, a high-level risk assessment of the prospecting components has been undertaken to establish the potential risks associated therewith.

The closure objectives are to:

Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.

Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;

To establish rehabilitated area which is not subject to soil erosion which may result in the loss of soil, degradation of the environment and cause pollution of surface water resources; and

Restore disturbed area and re-vegetate these areas with grass species naturally occurring in the area to restore the ecological function of such areas as far as is practicable.

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

This Basic Assessment Report and Environmental Management Programme Report will be made available to each registered stakeholder for review and comment. All comments will be captured in the issues and response section and will be included into the final report.

#### **(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.**

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, an airborne / ground geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling will be tested by initial drilling. The location and extent of soil sampling and drill sites can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken.

Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities.

The only rehabilitation that will specifically be required is borehole capping and revegetation:

## 28 Borehole capping.

Drill holes must be permanently capped as soon as is practicable. See below that illustrate borehole capping procedure.

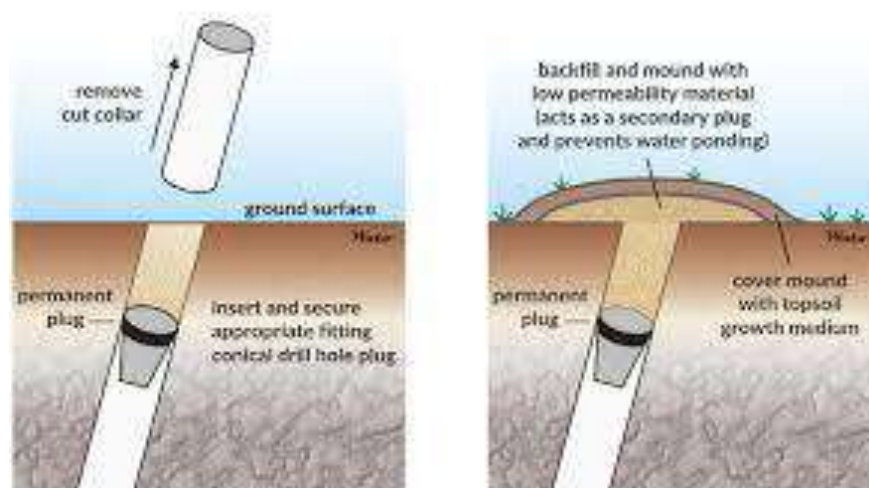


Figure 25: Illustration of borehole capping.

## 29 Re-vegetation.

It is recommended that a standard commercial fertilizer high in the standard elements is added to the soil before re-vegetation, at a rate of 10-20kg/ha (application rate to be confirmed based on input from a suitably qualified specialist). The fertilizer should be added

to the soil in a slow-release granular form. A suitably qualified ecologist will be appointed to determine the appropriate veld grass mix for hand seeding.

Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. An effective vegetation covers of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.

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

Due to the nature of the activities, the impacts will be very limited and of short duration. The Environmental Management Programme Report is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed Environmental Management Programme Report has been provided to address potential impacts associated with these activities.

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

The financial provision for the environmental rehabilitation and closure of any mine/prospecting and its associated operations forms an integral part of the MPRDA. Sections 41(1), 41(2), 41(3) and 45 of the MPRDA deal with the financial provision for rehabilitation and closure. During 2017 DMRE made updated rates available for the calculation of the closure costs, where contractor's costs are not available these are used in assessments.

The "Guideline Document for the Evaluation of Financial Provision made by the Mining Industry" was developed by the DMRE in January 2005, in order to empower the personnel at Regional DMRE offices to review the quantum determination for the rehabilitation and closure of mining sites.

With the determination of the quantum for closure it must be assumed that the infrastructure has no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMRE guidelines and is based, where possible.

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

The amount to finance the prospecting activities will be **R46624**. Financing will be sourced from the capital expenditure as planned by the company; this capital will come from the treasury of the company. As part of the Prospecting Work Programme, the applicant has provided the annual financial statement. The Mine's annual financial statement was also

submitted to the DMRE for confirmation that the company has available funding to implement this proposed project.

It should be noted that the current expenditure provided for in the Prospecting Work Programme does not include the calculated Financial Provision as included into this Basic Assessment Report, as these values were not available at the time of the submission of the Prospecting Work Programme.

The provision for closure, should be updated into the Prospecting Work Programme prior the decision by the DMRE should this decision be positive.

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

- g) Monitoring of Impact Management Actions
- h) Monitoring and reporting frequency
- i) Responsible persons
- j) Time period for implementing impact management actions
- k) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Phase1: Data Acquisition and Desktop Study	None identified.	None	N/A	N/A
Phase 2: Target Generation and Ground Truthing	Noise impacts resulting from site fly-overs affecting cattle and game farm animals	Adjacent landowners will be informed of the planned dates of the Airborne geophysics survey and a grievance mechanism will be made available.	Prospecting Manager	Once-off upfront consultation with affected parties. As required as grievances are received. 1. Consultation to be signed off by Environmental Management. 2. All grievances to be signed-off by Environmental Management.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				<ol style="list-style-type: none"> <li>3. All corrective action and close out of grievances to be signed-off by Environmental Management.</li> <li>4. Proof of consultation to be submitted to the Department of Mineral Resources and Energy prior to airborne survey is conducted.</li> <li>5. Record of grievances, corrective action taken and close out to be submitted to the Department of Mineral Resources and Energy at the end of the project phase.</li> </ol>
Phase 3: Ground Geophysics and Soil Sampling	All site activities to be undertaken must be communicated with directly affected landowners.	<p>As soon as the extent of site activities are known. These must be communicated with directly affected landowners. The following procedures must develop in conjunction with these landowners:</p> <ol style="list-style-type: none"> <li>1. Emergency Preparedness and</li> </ol>	Prospecting Manager	<ol style="list-style-type: none"> <li>1. Confirmation of the extent of site activities to be submitted to the Department of Mineral Resources and Energy prior to such activities been undertaken.</li> <li>2. Proof of consultation with directly affected landowners and the</li> </ol>



SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		<p>Response Plan; and</p> <p>2. Access control procedures and requirements.</p>		<p>outcome of such consultation to be submitted to the Department of Mineral Resources and Energy.</p> <p>3. Continuous monitoring of compliance with the access control procedure will be undertaken.</p>
Phase III: Exploratory Drilling	Visual inspection of soil erosion and / or compaction	All exposed areas, access roads, the drill pad and soil stockpiles must be monitored for erosion on a regular basis and specifically after rain events.	Prospecting Manager Contractor	<p>Weekly and after rain events</p> <p>1. Monthly monitoring reports to be signed-off by the Environmental Manager.</p> <p>2. Corrective action to be confirmed and signed-off by the Environmental Manager.</p> <p>3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.</p>
	Dust generated will be assessed through visual observation	If dust outfall is excessive and regarded to affect any sensitive receptors a monitoring programme must be initiated based on the input of a suitably qualified air quality specialist.	Prospecting Manager Contractor	On-going

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				<ol style="list-style-type: none"> <li>1. Monthly monitoring reports to be signed-off by the Environmental Manager.</li> <li>2. Corrective action to be confirmed and signed-off by the Environmental Manager.</li> <li>3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.</li> </ol>
	Visual inspection of biodiversity impacts and the occurrence of invader species	Visual inspection of clearing activities and other possible secondary impact on biodiversity will be undertaken. The introduction of alien invasive vegetation species will be determined.	Prospecting Manager Contractor	<p>Once-off during clearing activities</p> <p>Weekly inspection of secondary impacts</p> <ol style="list-style-type: none"> <li>1. Monthly monitoring reports to be signed-off by the Environmental Manager.</li> <li>2. Corrective action to be confirmed and signed-off by the Environmental Manager.</li> </ol>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	Visual inspection of pollution incidents, the integrity of secondary containment structures and waste management	<p>All secondary containment structure will be inspected on a regular basis to confirm the integrity thereof and to identify potential leaks.</p> <p>All spill incidents will be identified and corrective action taken in accordance with an established spill response procedure.</p> <p>Waste management practices will be monitored to prevent contamination and littering.</p>	Prospecting Manager Contractor	<p>3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.</p> <p>Daily</p> <ol style="list-style-type: none"> <li>1. Monthly monitoring reports to be signed-off by the Environmental Manager.</li> <li>2. Corrective action to be confirmed and signed-off by the Environmental Manager.</li> <li>3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.</li> <li>4. Incident reporting will be undertaken as required in terms of the relevant legislation including, but</li> </ol>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				<p>not limited to, the:</p> <ul style="list-style-type: none"> <li>a) Mineral and Petroleum Resources Development Act 28 of 2002; and</li> <li>b) National Water Act 36 of 1998.</li> </ul>
Post Closure Monitoring	Follow up inspections and monitoring of rehabilitation	<p>Inspection of all rehabilitated areas to assess whether any soil erosion is occurring and implement corrective action where required.</p> <p>Confirm that the set target of 45% cover for all re-vegetated areas have been achieved after a period of 6 months and re-seed where required</p> <p>Identify any areas of subsidence around drill holes and undertake additional backfilling if required.</p>	Prospecting Manager	<p>Monthly for a period of 6 months after rehabilitation activities are concluded.</p> <ol style="list-style-type: none"> <li>1. Monthly monitoring reports to be signed-off by the Environmental Manager.</li> <li>2. Corrective action to be confirmed and signed-off by the Environmental Manager.</li> <li>3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.</li> <li>4. Final impact and risk</li> </ol>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				assessment report for site closure to be submitted to the Department of Mineral Resources and Energy for approval.

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

Annual performance assessments must be undertaken on the EMPr. These reports must also include the assessment of the financial provision. The reports should be submitted to the DMRE.

**h) Environmental Awareness Plan**

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

An Environmental Awareness and Risk Assessment Schedule have been developed and is outline in Table 10 below The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re enforced.

**Table 2: Environmental Training and Awareness Schedule.**

Frequency	Time allocation	Objective
Induction (all staff and workers)	1 hour training on environmental awareness training as part of site induction	<ol style="list-style-type: none"> <li>1. Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety and community aspects.</li> <li>2. Establish a basic knowledge of the environmental legal framework and consequences of non-compliance.</li> <li>3. Clarify the content and required actions for the implementation of the Environmental Management Programme Report.</li> <li>4. Confirm the spatial extent of areas regarded as sensitive and clarify restrictions.</li> <li>5. Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents.</li> </ol>
Monthly Awareness Talks (all staff and workers)	30-minutes awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	Daily task based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily tool box talks.

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

As prescribed in Task / Issue Based Risk Assessments table must be undertaken with all worker involved in the specific task in order to establish an understanding of the risks associated with a specific task and the required mitigation and management measures.

### **31 Environmental Awareness Training Content – Induction Training.**

The following environmental awareness training will be provided to all staff who will be involved in prospecting activities.

- Description of the approved prospecting activities and content of the prospecting right;
- An overview of the applicable legislation and regulations as it relates to environmental, health, safety and community including (but not limited to):
  - General Environmental Legal Principles and Requirements
  - Air Quality Management
  - Water and Wastewater Management
  - Hazardous Substances
  - Non-Mining-Related Waste Management
  - The Appropriate Remediation Strategies & Deteriorated Water Resources
  - Biodiversity
  - Weeds and Invader Plants
  - Rehabilitation
  - Contractors and Tenants
  - Energy & Conservation
  - Heritage Resources
  - General Health and Safety Matters
  - Basic Conditions of Employment
  - Compensation for Occupational Injuries and Diseases
  - General Mine Health and Safety Matters
  - Smoking in the Workplace

- Noise & Hearing Conservation
- Handling, Storage and use of Hazardous Substances
- Weapons and Firearms
- Content and implementation of the approved Basic Assessment Report and Environmental Management Programme Report
  - Allocated responsibilities and functions
  - Management and Mitigation Measures
  - Identification of risks and requirements adaptation
- Sensitive environments and features
  - Description of environmentally sensitive areas and features
  - Prohibitions as it relates to activities in or in proximity to such areas
- Emergency Situations and Remediation
  - Methodology for the identify areas where accidents and emergency situations may occur, communities and individuals that may be impacted
  - An overview of the response procedures,
  - Equipment and resources
  - Designate of responsibilities
  - Communication, including communication with potentially Affected Communities
  - Training schedule to ensure effective response.

### **32 Development of procedures and checklists.**

The following procedures will be developed, and all staff will be adequately trained on the content and implementation thereof.

### **33 Emergency Preparedness and Response.**

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



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

### **34 Incident Reporting Procedure.**

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

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

### **35 Environmental and Social Audit Checklist.**

An environmental audit checklist will be established to include the environmental and social mitigation and management measures as developed and approved as part of the Environmental Management Programme Report. Non-conformances will be identified and corrective action taken where required.

#### **i) Specific information required by the Competent Authority**

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

No specific information was required by the Competent Authority.

### **36 UNDERTAKING**

The EAP herewith confirms

- a) The correctness of the information provided in the reports
- b) The inclusion of comments and inputs from stakeholders and I&APs;
- c) The inclusion of inputs and recommendations from the specialist reports where relevant; and

- d) That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein

---

Signature of the Environmental Assessment Practitioner:

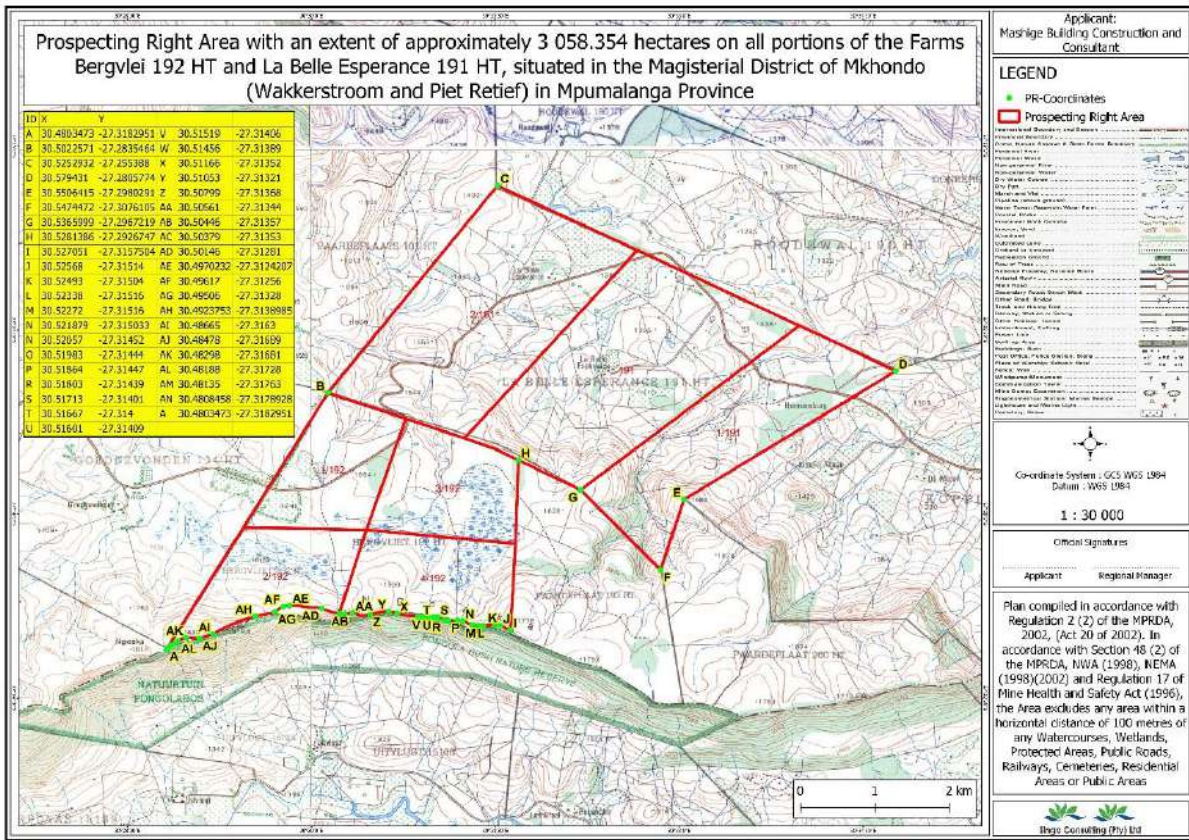
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Name of company:

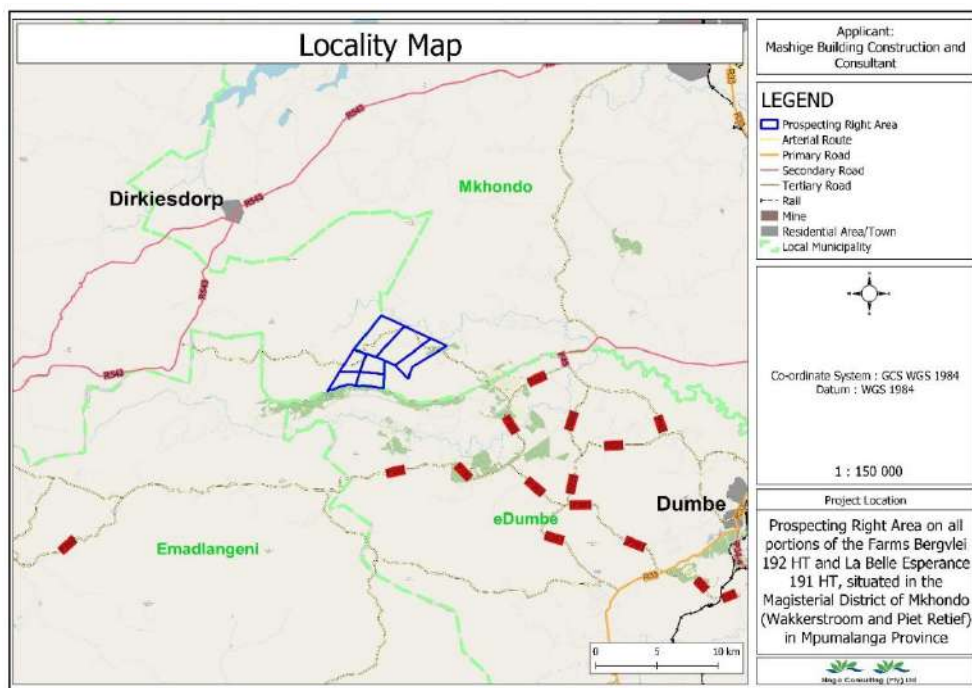
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Date:

# Appendix 1: Project Maps

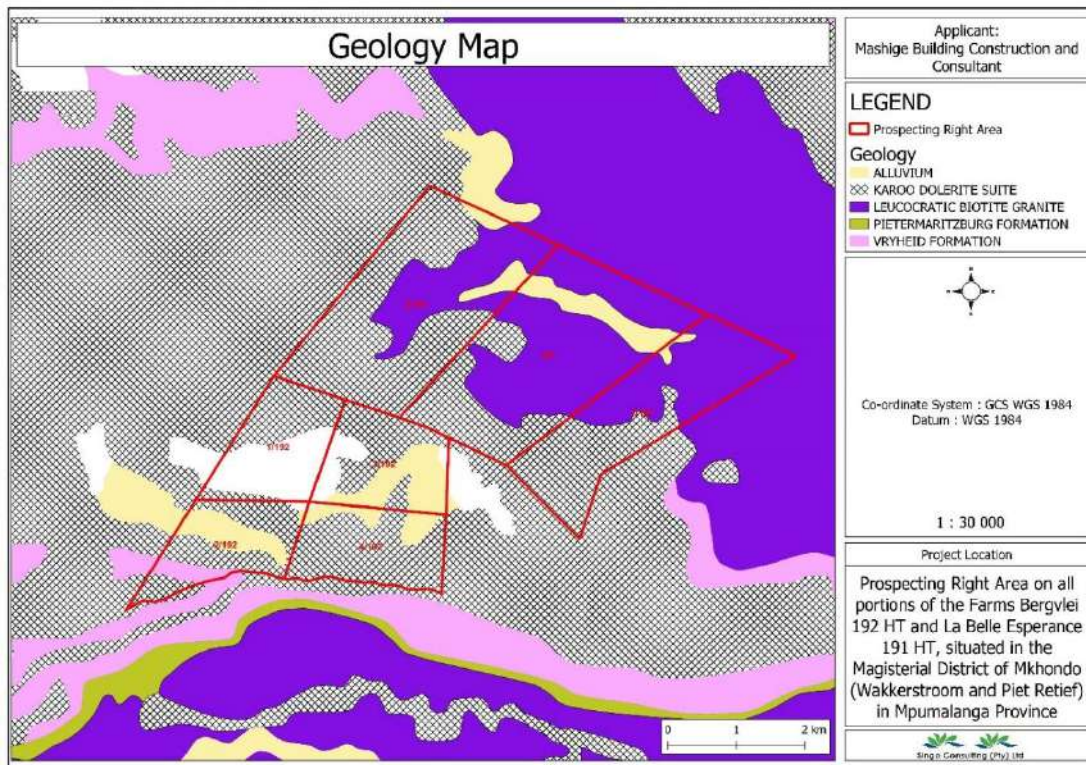


**Regulation Map**

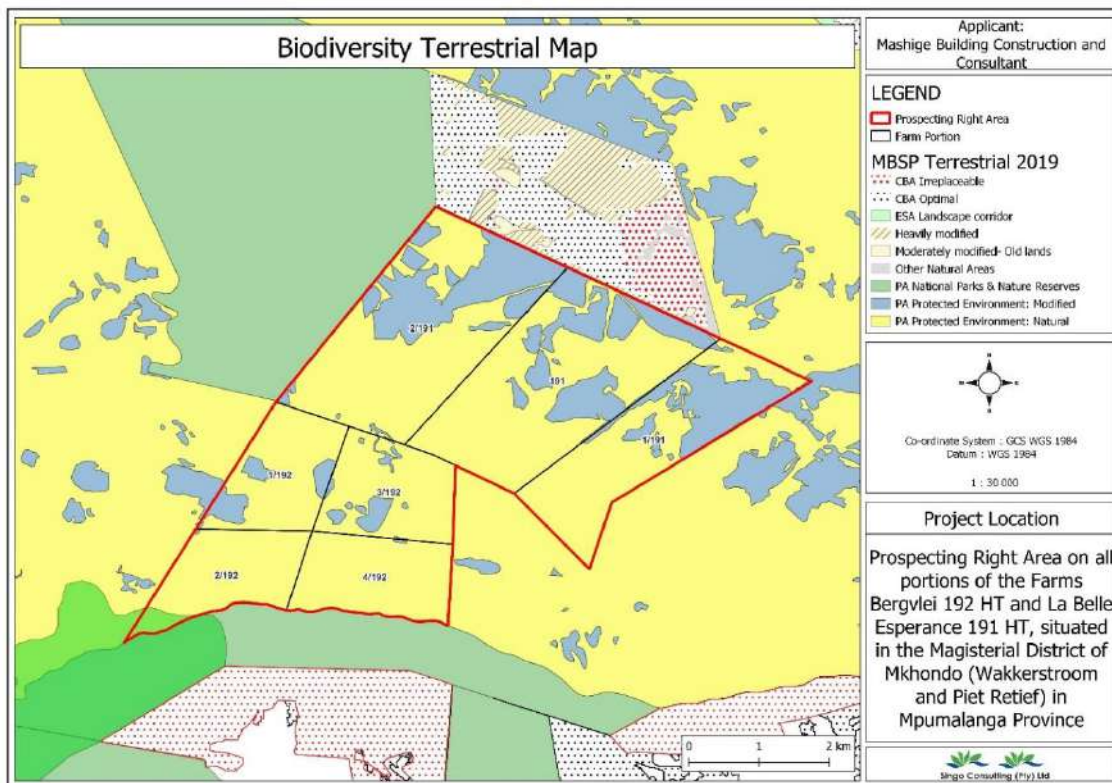


**Locality Map**



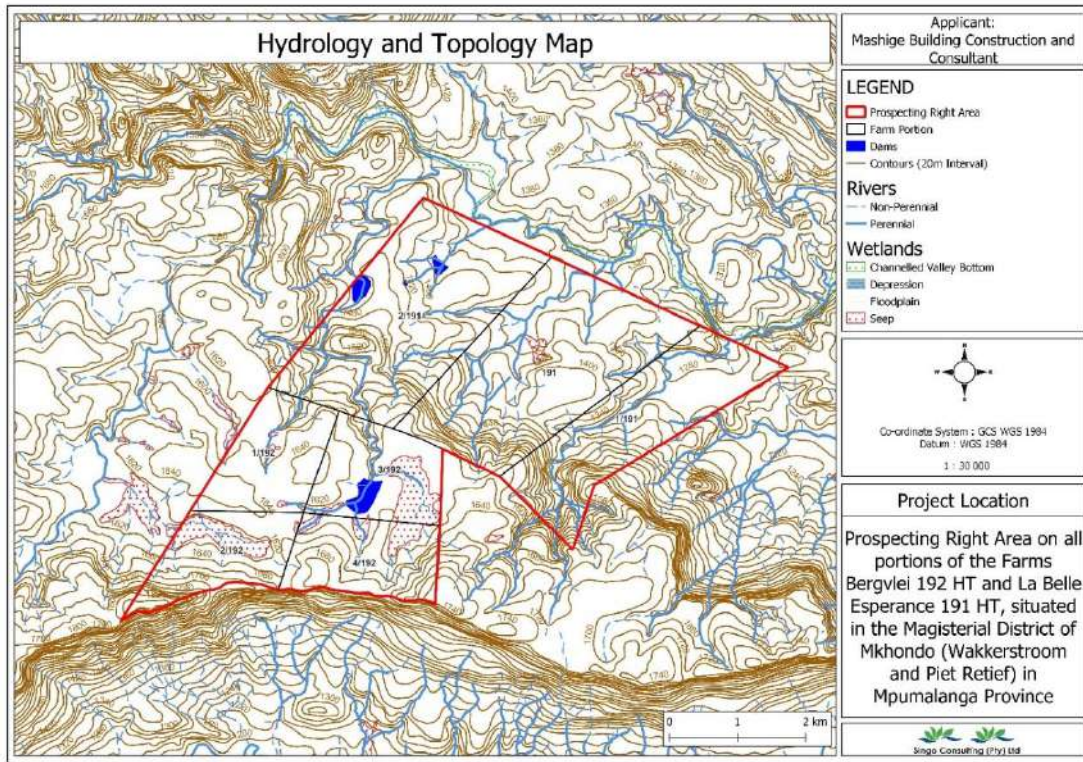


**Geology Map**

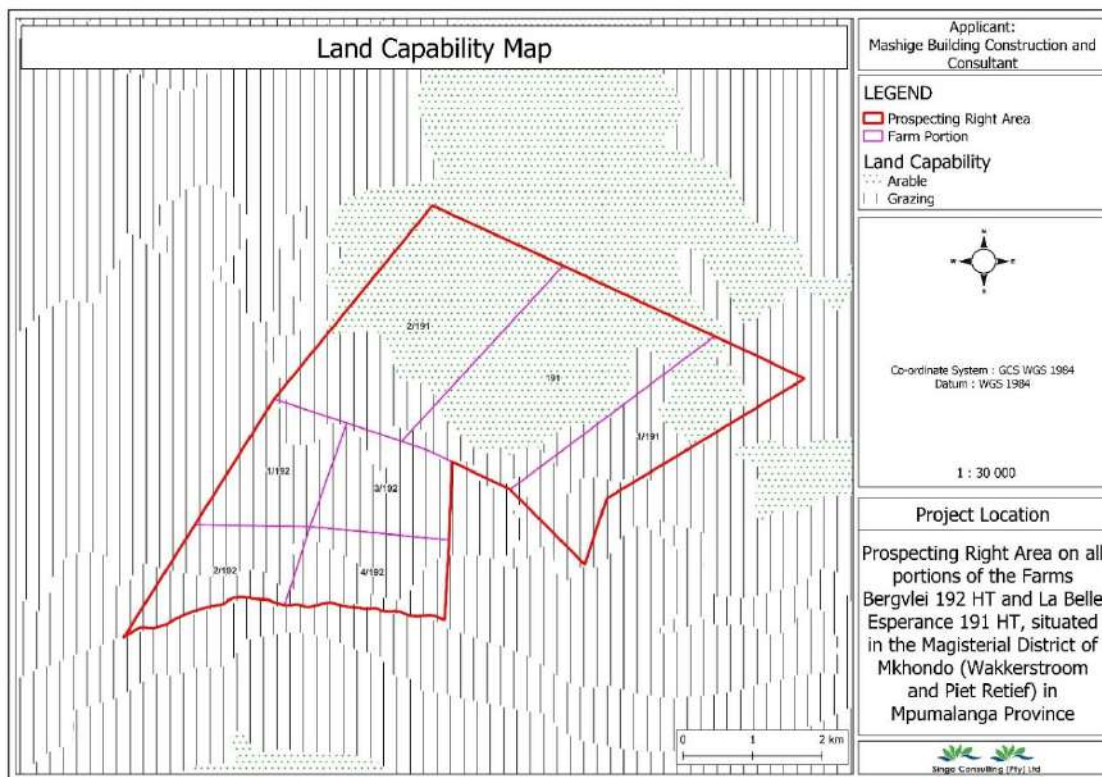


**Biodiversity Map**

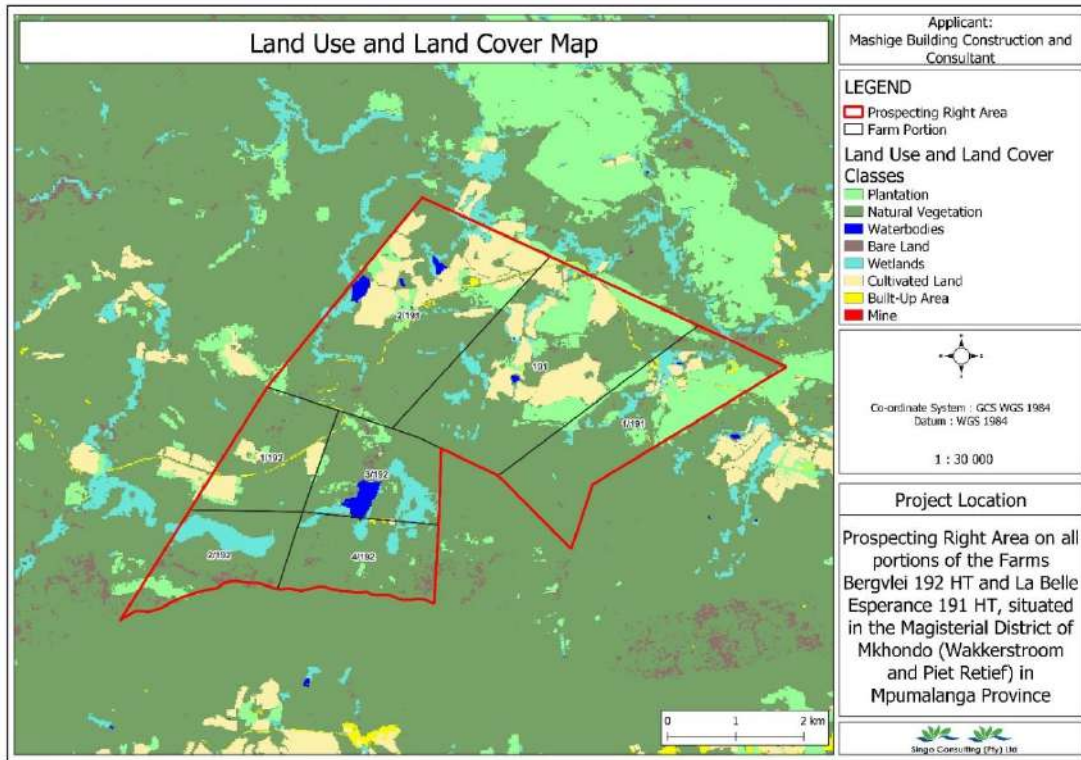




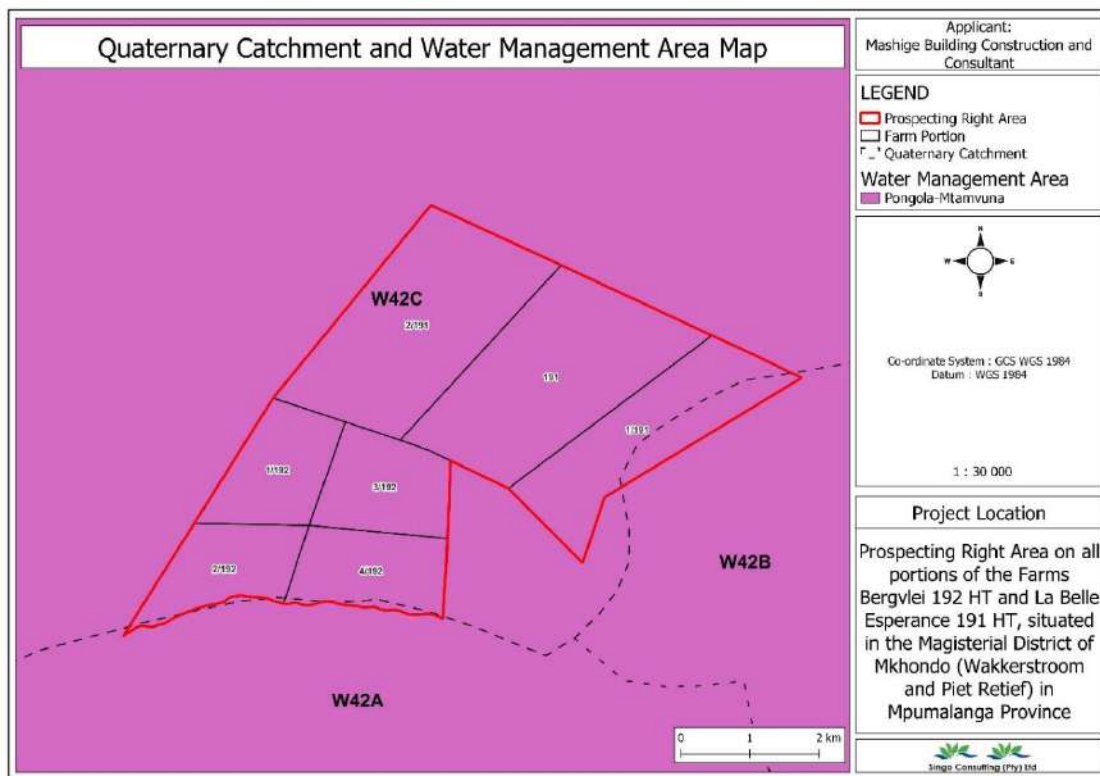
**Hydrology & Topology Map**



**Land Capability Map**



Land Use Map

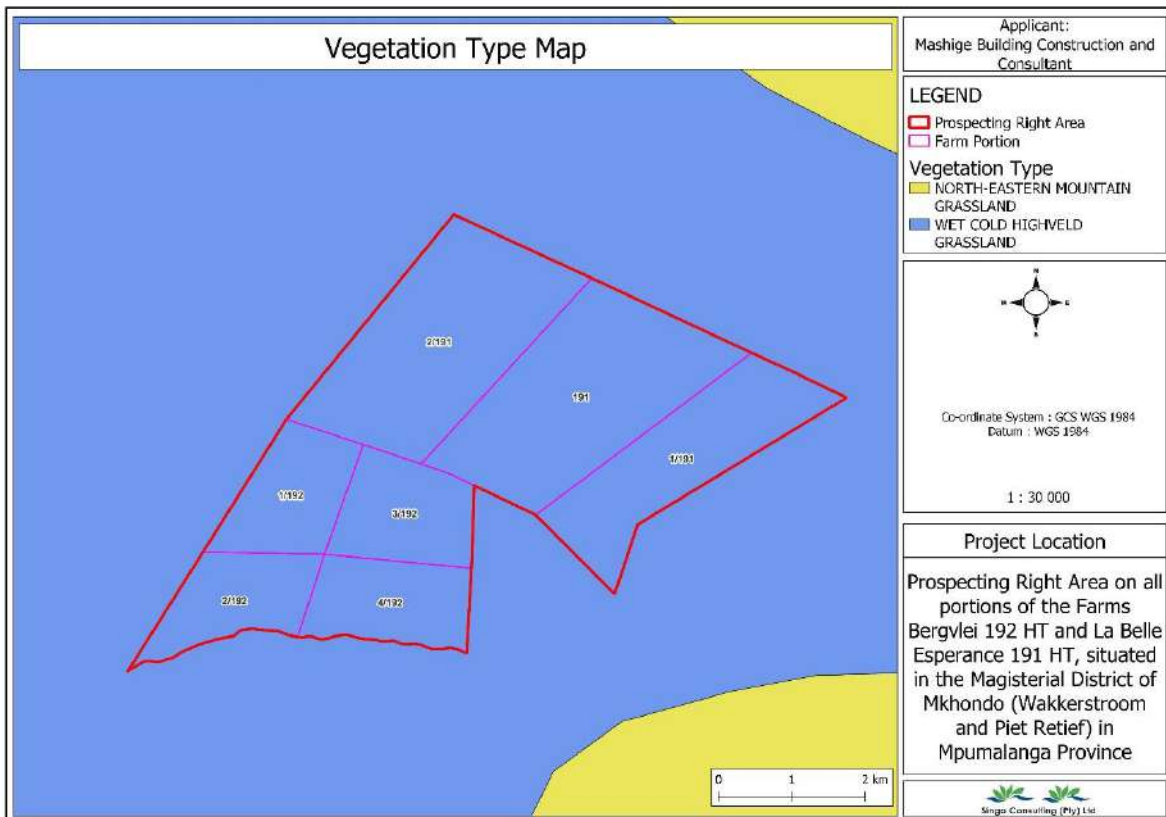


Quaternary Catchment Map

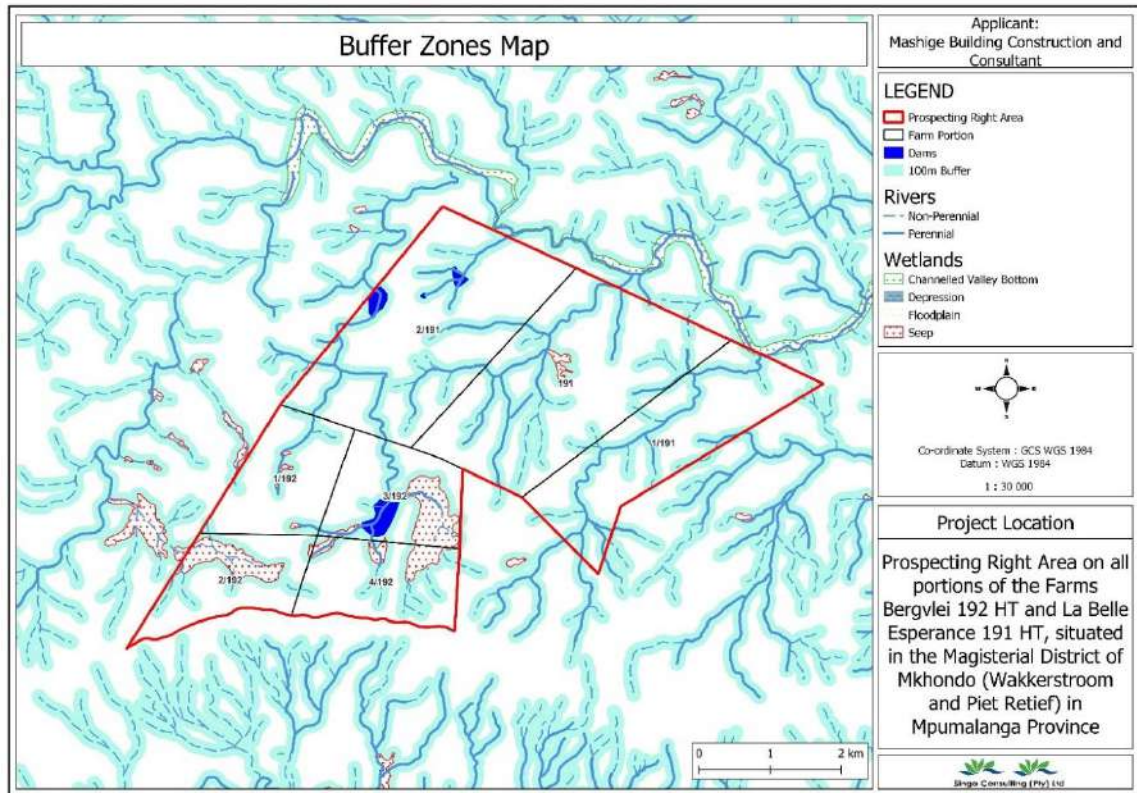




Soil Class Map

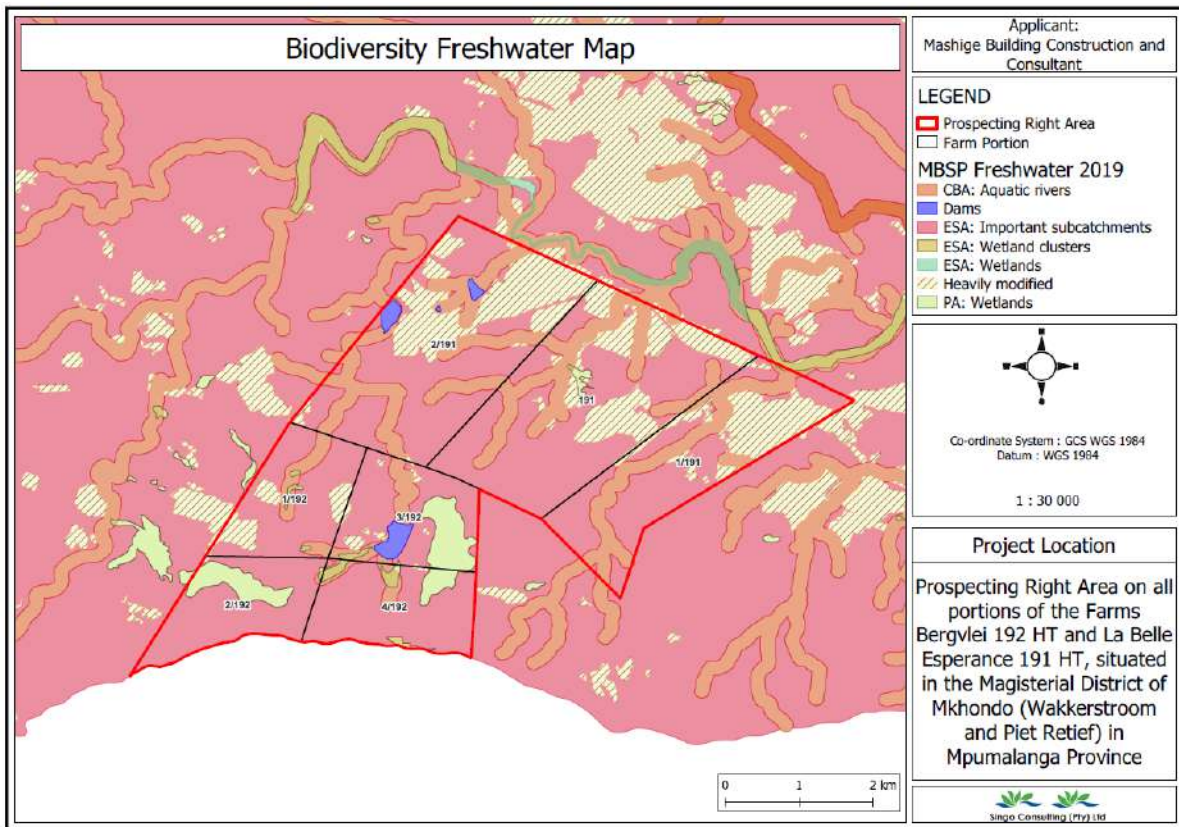


Vegetation Map

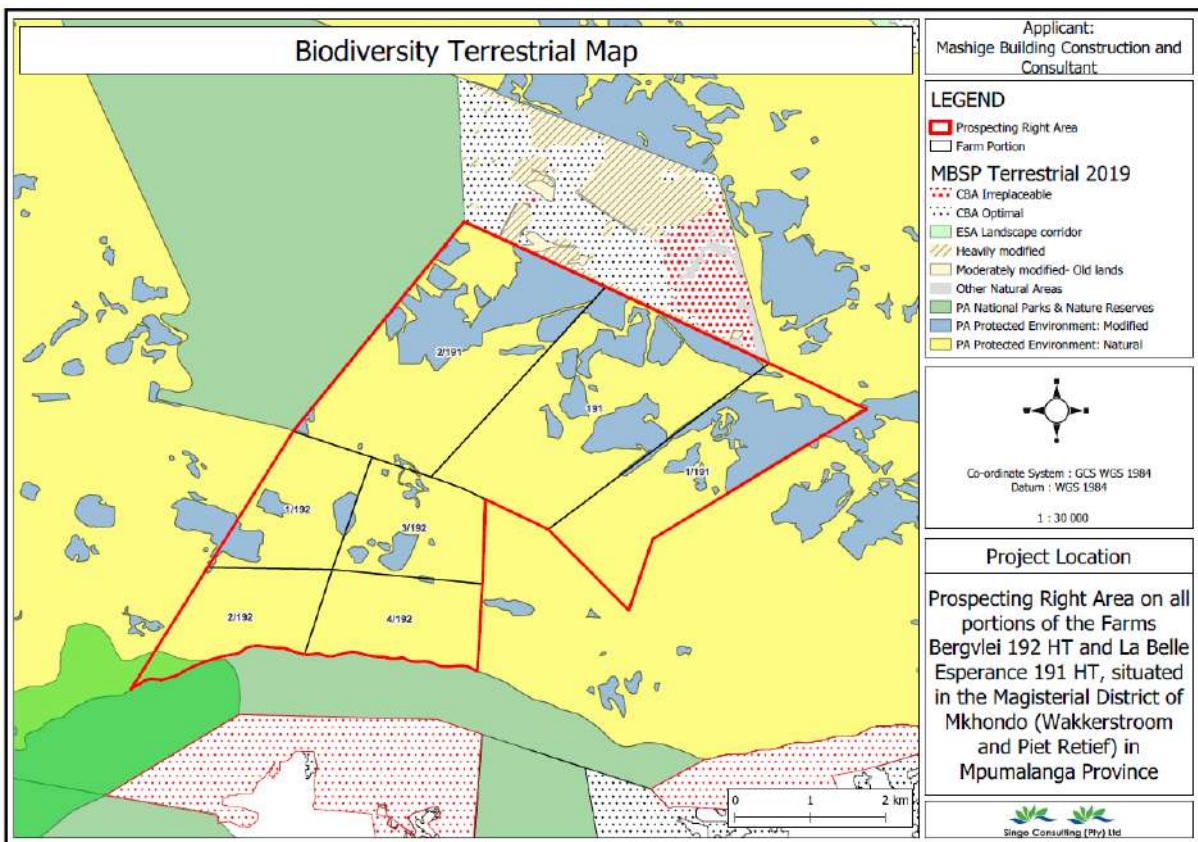


**Buffer Map**



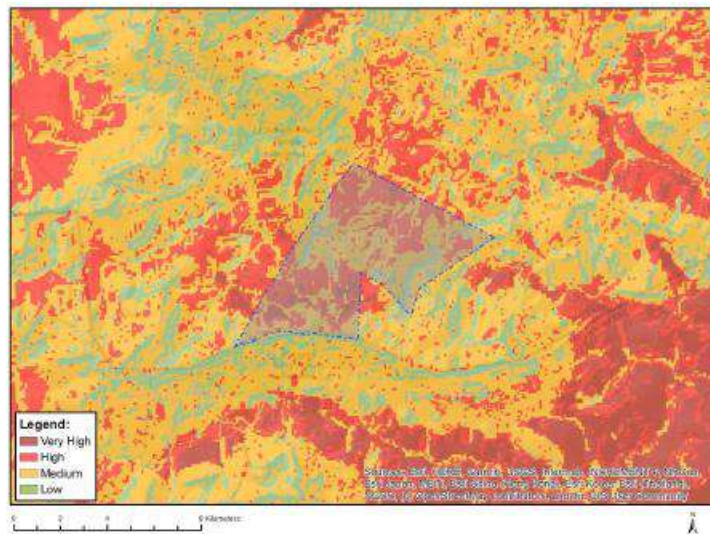


**Biodiversity Freshwater Map**



**Biodiversity Terrestrial Map**

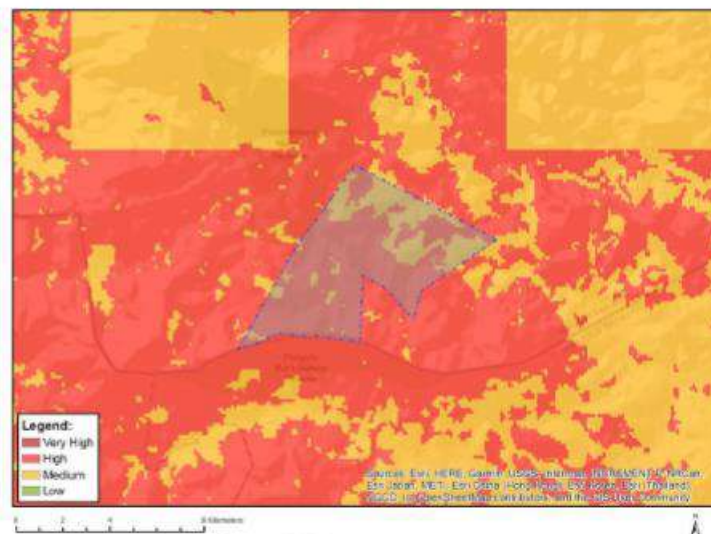
MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Map of relative agriculture theme sensitivity

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at [ejadatarerequests@sanbi.org.za](mailto:ejadatarerequests@sanbi.org.za) listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Map of relative animal species theme sensitivity







## Appendix 2: Background Information Document(BID)

# BACKGROUND INFORMATION DOCUMENT

Proposed Prospecting Right Application for coal on all portions of the farm Bergvlei 192 HT and La Belle Esperance 191 HT.

Magisterial District of Mkhondo (Wakkerstroom & Piet Retief); Mpumalanga Province

Prepared by:



### INTRODUCTION AND THE PURPOSE OF THIS DOCUMENT

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Consultant by Mashige Building Construction & Consultant to conduct Environmental Impact Assessment (EIA), Compile an Environmental Management Programme Report (EMPr) and undertake Public Participation Process (PPP). This is done for processes of acquiring environmental authorization for the proposed prospecting right for coal on farm Bergvlei 192 HT & La Belle Esperance 191 HT, in the Magisterial District of Mkhondo (Wakkerstroom & Piet Retief), Mpumalanga Province. **DMRE Ref: MP 30/5/1/1/2 (17338) PR.**

The Purpose of this Background Information Document (BID) is to provide a perfunctory description of the project and outline EIA processes to be followed and contributions from Interested and Affected Parties (I&APs) on the issues related to the project in question, allowing comments and concerns to be raised.

Results of the EIA through BAR & EMPr, both negative and positive will be submitted and made available to the relevant Departments such as the Department of Mineral Resources and Energy and if requested, Environmental Affairs, Water and Sanitation, Landowners and other interested stakeholders.

This Background Information Document therefore requests and invites I&APs to comment on the environmental, physical, social and economic impacts associated with the proposed Prospecting Activity. Be assured that your comments are of great value as they ensure that relevant issues are taken into consideration. Attached at the end of this document is a registration form, kindly complete it and send it back to Mr. Abel Mojapelo through given means of communication also attached here.

### PROJECT DESCRIPTION

Prospecting Right Application has been submitted for the prospecting of coal on the property mentioned above. This Prospecting Area, as seen in figure 1 below, is situated approximately 13.19 km Northwest of Dirkiesdorp.

Prospecting activities will be undertaken over a period of five (5) years and are designed in phases, each phase conditional on the success of the previous phase. Both Invasive and non-invasive methods will be implemented. Desktop study of the area has commenced, and this incorporates desktop geographical and geological mapping. This will be followed by geochemical and geotechnical surveys. In turn, this is followed by detailed geophysical studies and later, a detailed drilling, sampling, assaying and mineralogical study. Percussion drilling and Diamond drilling methods will be utilized to prospect coal. To ensure or minimize impacts on the receiving environment, all the drilling activities will be guided by the project's EMPr.

### REGULATORY FRAMEWORK

The proposed Prospecting activity is involved with some sort of physical alteration to accommodate for example drill rigs and site offices. Therefore, EIA process to be undertaken will be conducted in accordance with the National Environmental Management Act (Act 107 of 1998) and Environmental Impact Assessment regulations as amended (April 2017).

The activity is to prospect the existence and occurrence of coal therefore this will be conducted in accordance with Mineral and Petroleum Resources Development Act, (Act 28 of 2002). Other regulatory guidelines to be followed include National Water Act, 1998 (Act 36 of 1998), National Air Quality Standards (GN 1210: 2009) and National Dust Control Regulations (GN 827 of GG NO. 36974).

These all will accurately be followed to ensure that identified impacts are assessed and mitigated according to their significance so that the protection of the receiving environment and populations is met.



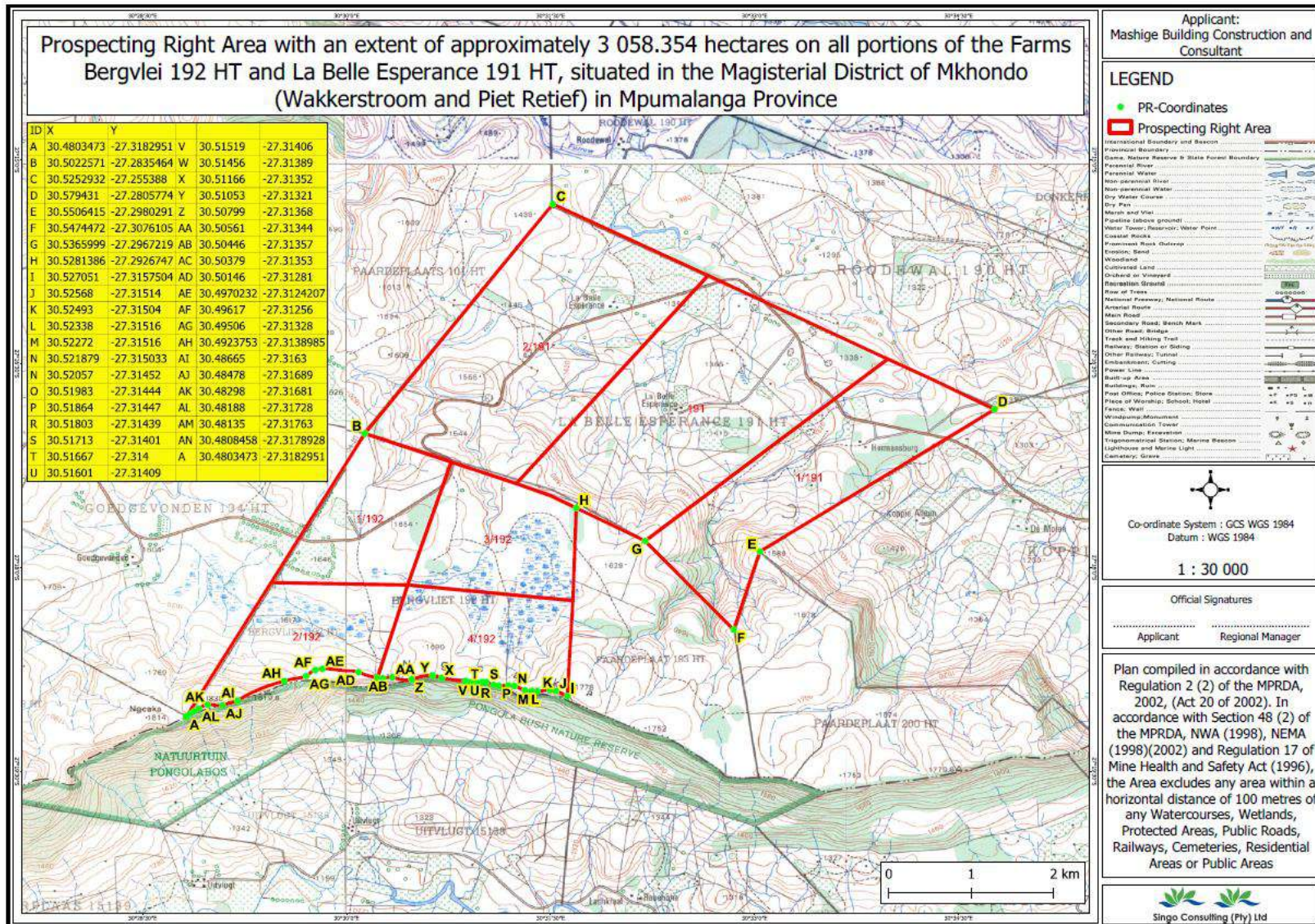


Figure 26: Regulation map of the proposed project.



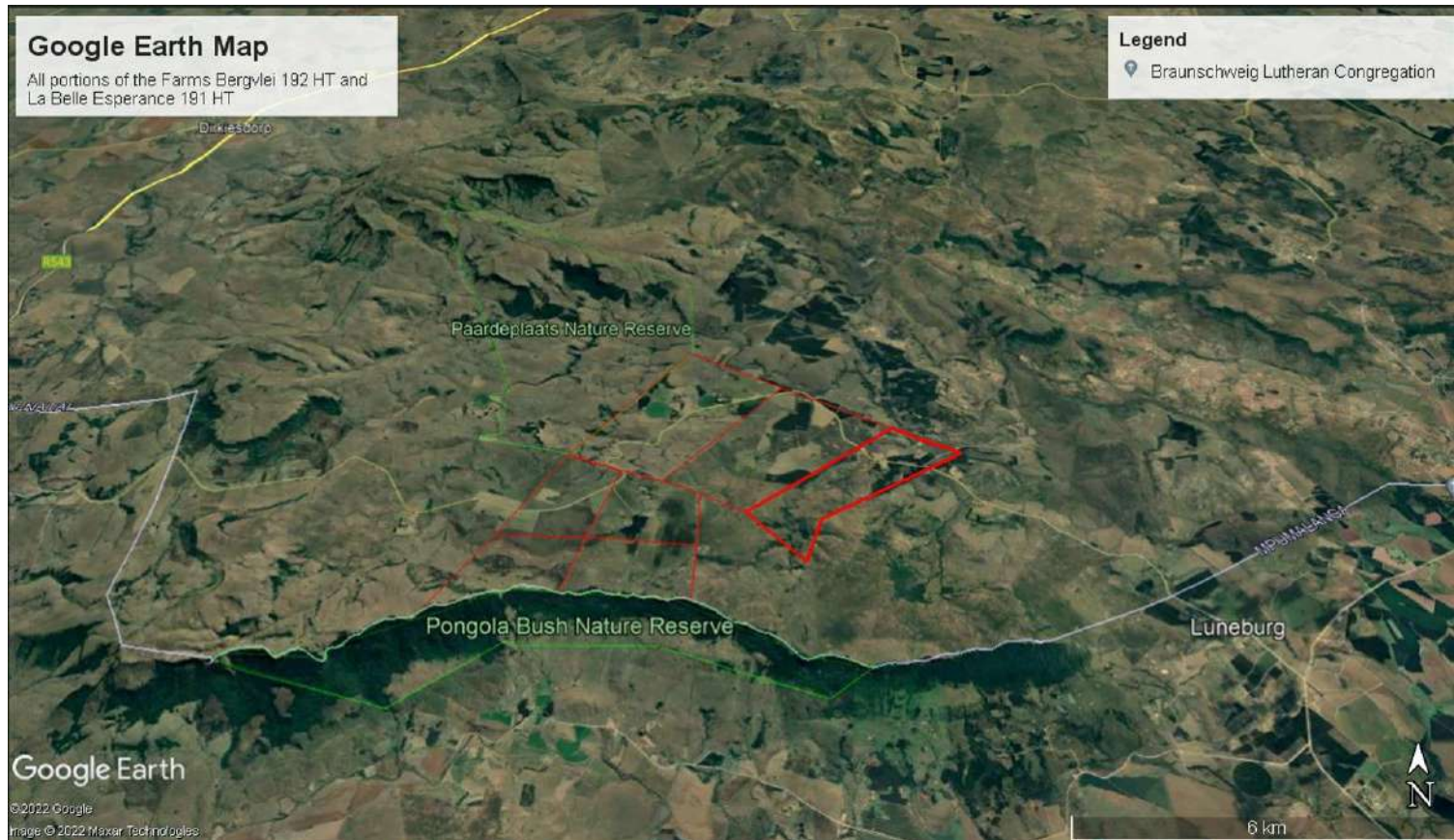


Figure 27: Google Earth View Map of the proposed area.

## **BASIC AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESSES**

These are planning and decision-making tools used in identifying potential environmental, economic and social consequences of a proposed activity prior the commencement of the activity.

These together with the public issues and concerns are to be identified sufficiently early so that they can be assessed and incorporated into the final reports when/if necessary.

These tools are regarded crucial because they are utilized in order to demonstrate to the relevant stakeholders about the potential impacts, which in turn leads to the prospecting application process being a success or declined.

## **PUBLIC PARTICIPATION PROCESS**

Public Participation remains a cornerstone of the Environmental Impact Assessment process. It ensures provision of relevant and enough information with openness and transparency. Public Participation process presents to I&APs, an opportunity to understand what the project is about, and affords them an opportunity to make valuable contributions towards the EIA process

I&APs can be any person, group of persons or organization interested in or affected by the proposed activity, and any organ of state that may have jurisdiction over any aspect of the activity.

The key objective of PPP is to afford the I&APs with an opportunity to comment and provide valuable inputs during the planning phase of the project.

For this specific proposed project, I&APs will be given a period of 30 days to comment and raise issues/concerns with regards to the BAR and EMPr which will be available at the **Mkhondo Local Municipality & Mkhondo Public Library** and via email upon request.

Kindly note the following dates:

- ❖ Announcement of the Prospecting Right Application: **20<sup>th</sup> May 2022**
- ❖ Stakeholder engagement and consultation: **23<sup>rd</sup> June 2022 – 19<sup>th</sup> July 2022**
- ❖ Review of Draft BAR & EMPr: **24<sup>th</sup> June 2022 – 19<sup>th</sup> July 2022**
- ❖ Submission of the BAR & EMPr: **25<sup>th</sup> July 2022**





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[admin@singoconsulting.co.za](mailto:admin@singoconsulting.co.za)

**REGISTRATION & COMMENT SHEET**

**Proposed Prospecting Right Application for coal within all portions of the farm Bergvlei 192 HT and La Belle Esperance 191 HT Situated in the Magestrial District of Mkhondo (Wakkerstroom & Piet Retief), Mpumalanga Province.**

**DMRE Ref: MP 30/5/1/1/2/(17338) PR**

Attention: **Abel Mojapelo**

Email: [abel@singoconsulting.co.za](mailto:abel@singoconsulting.co.za)

Date			
Title	Name	Surname	
Company			
Designation			
Address			
Tel No.		Fax No.	
E-mail		Cell No.	
I would like to receive my notifications be (mark with "X"):	Post <input type="checkbox"/>	E-mail: <input type="checkbox"/>	
		Fax: <input type="checkbox"/>	
<b>Please indicate why you would have an interest in the above-mentioned project.</b>			
<b>Please provide your comments and questions here:</b>			
<i>Please feel free to attach a separate document</i>			
<b>Please add any person you think may be interested and affected parties:</b>			
Full name		Company	
Address			
E-mail		Contact No.	

### **Appendix 3: EAPS CV and Qualifications**

(Due to POPI Act sensitive information will not be disclosed to the public)

## Appendix 4: Screening Report.

### SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED DEVELOPMENT FOOTPRINT ENVIRONMENTAL SENSITIVITY

EIA Reference number: New Application

Project name: All portions of the farms Bergvlei 192 HT and La Belle esperance 191 HT

Project title: All portions of the farms Bergvlei 192 HT and La Belle esperance 191 HT

Date screening report generated: 25/03/2022 01:16:16

Applicant: Mashige Building Construction and Consultant

Compiler: Singo Consulting (Pty) Ltd

Compiler signature: 

Application Category: Mining | Prospecting rights



**Singo Consulting (Pty) Ltd**

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## Proposed Project Location

### Orientation map 1: General location

General Orientation: All portions of the farms Bergvlei 192 HT and La Belle esperance 191 HT





Footprint	Latitude	Longitude
1	27°19'5.86S	30°28'49.25E
1	27°17'0.77S	30°30'8.12E
1	27°15'19.45	30°31'31.05E
1	27°16'50.08S	30°34'45.95E
1	27°17'52.91S	30°33'2.3E
1	27°18'27.45	30°32'50.81E
1	27°17'48.25	30°32'11.76E
1	27°17'33.63S	30°31'41.29E
1	27°18'56.75	30°31'37.38E
1	27°18'54.55	30°31'32.45E
1	27°18'54.15S	30°31'29.75E
1	27°18'54.57S	30°31'24.16E
1	27°18'54.57S	30°31'21.79E
1	27°18'54.12S	30°31'18.77E
1	27°18'52.27S	30°31'14.05E
1	27°18'51.98S	30°31'11.39E
1	27°18'52.09S	30°31'7.11E
1	27°18'51.85	30°31'4.91E
1	27°18'50.44S	30°31'1.66E
1	27°18'50.45	30°31'0.01E
1	27°18'50.73S	30°30'57.64E
1	27°18'50.62S	30°30'54.68E
1	27°18'50.01S	30°30'52.41E
1	27°18'48.67S	30°30'41.97E
1	27°18'47.55S	30°30'37.91E
1	27°18'49.25S	30°30'28.76E
1	27°18'48.39S	30°30'20.19E
1	27°18'48.85S	30°30'16.06E
1	27°18'48.71S	30°30'13.64E
1	27°18'46.12S	30°30'5.25E
1	27°18'44.71S	30°29'49.28E
1	27°18'45.21S	30°29'46.21E
1	27°18'47.81S	30°29'42.22E
1	27°18'50.03S	30°29'32.55E
1	27°18'58.68S	30°29'11.93E
1	27°19'0.85	30°29'5.21E
1	27°19'0.52S	30°28'58.72E
1	27°19'2.21S	30°28'54.76E
1	27°19'3.46S	30°28'52.86E
1	27°19'4.42S	30°28'51.05E
1	27°19'5.86S	30°28'49.25E

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No nearby wind or solar developments found.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

## Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmental sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

**Mining | Prospecting rights.**

### Relevant development incentives, restrictions, exclusions or prohibitions

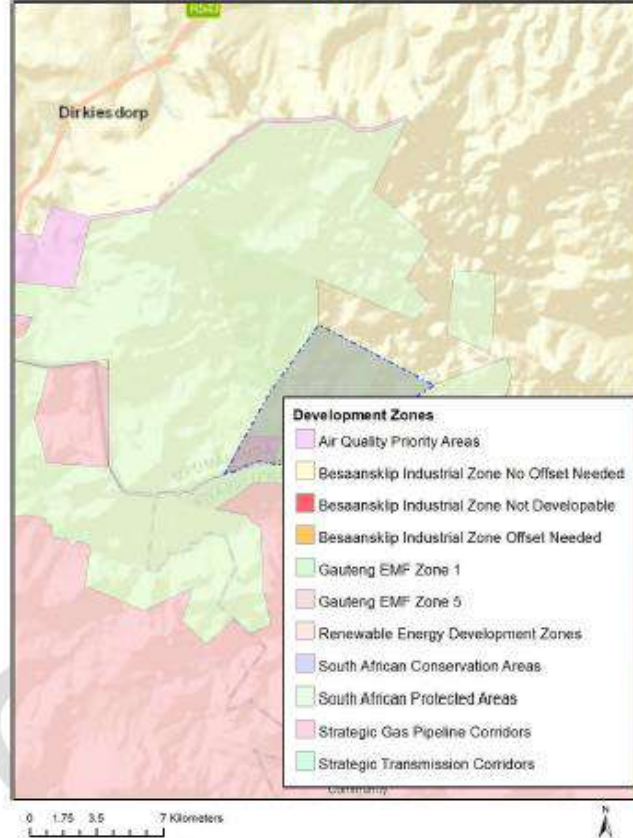
The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this footprint are indicated below.

Incentive, restriction or prohibition	Implication
Air Quality-Highveld Priority Area	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/HIGHVELD_PRIORITY_AREA_AQMP.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/HIGHVELD_PRIORITY_AREA_AQMP.pdf</a>
Strategic Gas Pipeline Corridors -Phase 3: Richards Bay to Gauteng	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_GAS.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_GAS.pdf</a>
South African Protected Areas	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SAPAD_OR_2021_Q3_Metadata.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SAPAD_OR_2021_Q3_Metadata.pdf</a>



Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

Project Location: All portions of the farms Bergvlei 192 HT and La Belle esperance 191 HT



#### Proposed Development Area Environmental Sensitivity

The following summary of the development footprint environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
-------	-----------------------	------------------	--------------------	-----------------

Agriculture Theme	X			
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme			X	
Defence Theme				X
Paleontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

#### Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

N o	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf</a>
2	Archaeological and Cultural Heritage Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
3	Paleontology Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
4	Terrestrial Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf</a>
5	Aquatic Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf</a>

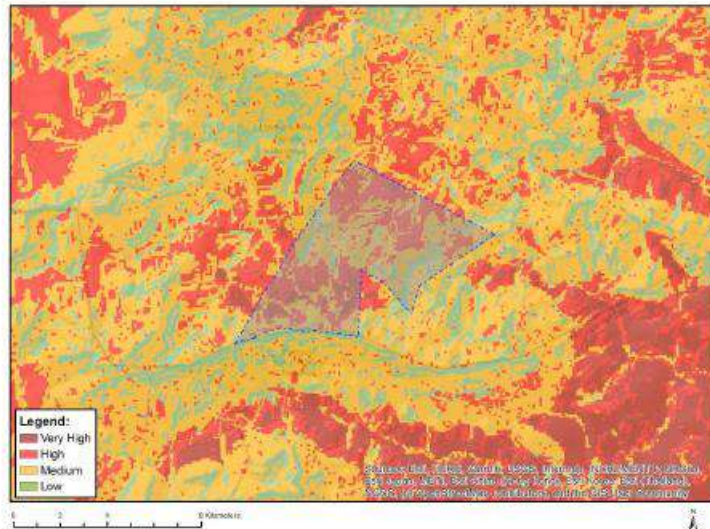
6	Noise Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted%20Noise%20Impacts%20Assessment%20Protocol.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Noise Impacts Assessment Protocol.pdf</a>
7	Radioactivity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted%20General%20Requirement%20Assessment%20Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
8	Plant Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted%20Plant%20Species%20Assessment%20Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Plant Species Assessment Protocols.pdf</a>
9	Animal Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted%20Animal%20Species%20Assessment%20Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Animal Species Assessment Protocols.pdf</a>

OFFICIAL

## Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed footprint for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

### MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



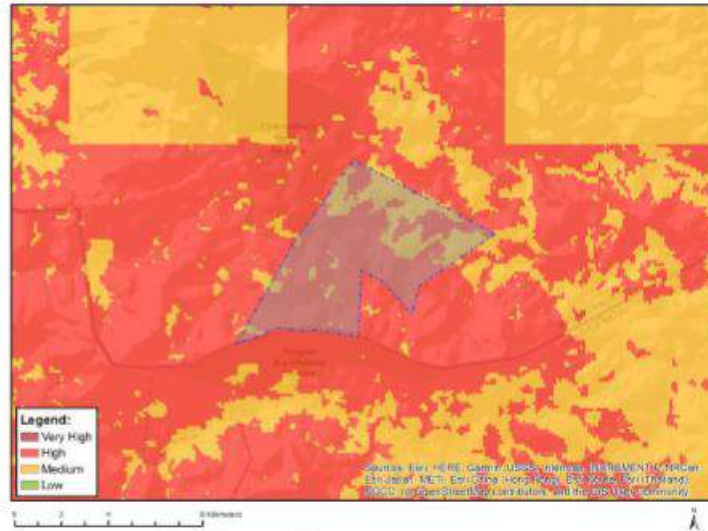
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

#### Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Land capability;11. High/12. High-Very high/13. High-Very high/14. Very high/15. Very high

Very High	Annual Crop Cultivation / Planted Pastures Rotation; Land capability; 11. High/12. High-Very high/13. High-Very high/14. Very high/15. Very high
Very High	Horticulture / Viticulture; Land capability; 06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Horticulture / Viticulture; Land capability; 09. Moderate-High/10. Moderate-High
Very High	Pivot Irrigation; Land capability; 09. Moderate-High/10. Moderate-High

#### MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at [eiadatarequests@sanbi.org.za](mailto:eiadatarequests@sanbi.org.za) listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

#### Sensitivity Features:

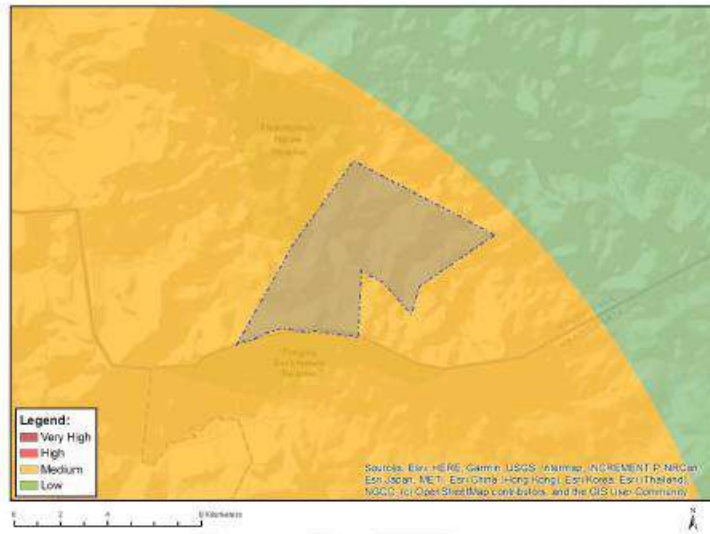
Sensitivity	Feature(s)
High	Aves-Sylvia nigricapillus
High	Aves-Sagittarius serpentarius
High	Aves-Neotis denhami
High	Sensitive species 2
High	Aves-Geronticus calvus
High	Aves-Grus carunculata
High	Aves-Circus ranivorus







MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

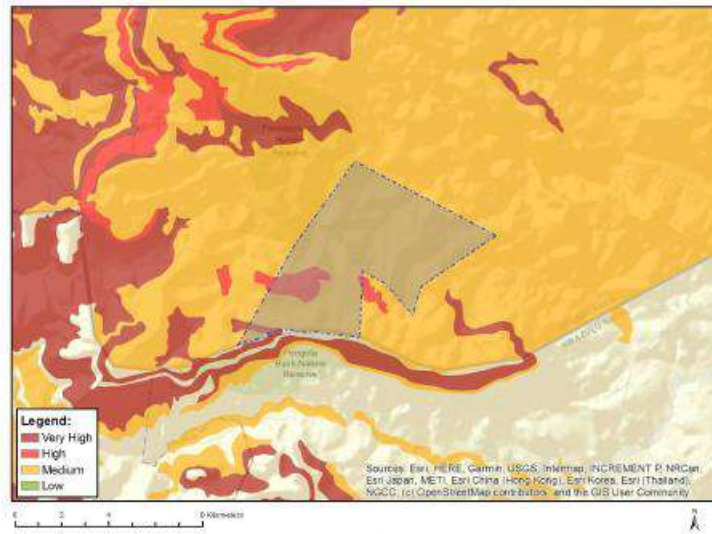
Sensitivity Features:

Sensitivity	Feature(s)
Medium	Between 15 and 35 km from a civil aviation radar





MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

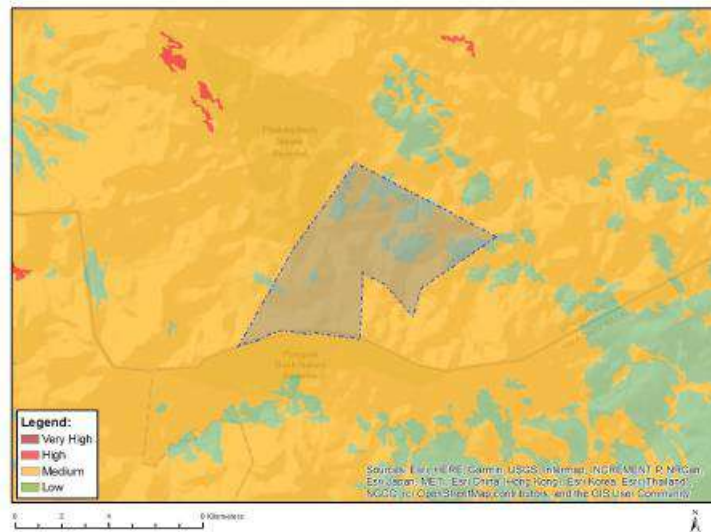


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

## MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at [eiadatarequests@sanbi.org.za](mailto:eiadatarequests@sanbi.org.za) listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

### Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	<i>Faurea macnaughtonii</i>
Medium	<i>Ocotea bullata</i>
Medium	Sensitive species 1252
Medium	<i>Ocotea kenyensis</i>
Medium	<i>Bowkeria citrina</i>
Medium	<i>Dierama erectum</i>
Medium	<i>Dracosciadium italaie</i>
Medium	Sensitive species 571
Medium	<i>Lotononis amajubica</i>
Medium	Sensitive species 41
Medium	<i>Gymnosporia devenishii</i>
Medium	Sensitive species 691



Very High	Pongola Bush Nature Reserve
Very High	KwaMandlangampisi Protected Environment

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## **Appendix 5: Impact Management Outcomes.**

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
Whether listed or not, e.g. excavations, blasting stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams/boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control berms, roads, pipelines, power lines, conveyors, etc.	Including the potential impacts for cumulative impacts, e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.		In which impact is anticipated e.g. construction, commissioning, operational, decommissioning, closure, post-closure.	Modify, remedy, control or stop through e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g. modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Planning and Project Management	EMPr	Project Management	Planning	A finalized EMPr must address all authorization conditions stipulated by the DEA (and other commenting authorities). EMPr must encompass all environmental impact mitigation measures as identified in the final BAR.	MPRDA & NEMA
	Appointment of Environmental Officer	Project Management	Planning	The Mashige Building construction and Consultant environmental geologist will serve as the Environmental Officer during construction, given the short duration of construction and the low Mashige Building construction and consultant environmental geologist will be responsible for monitoring the compliance of the construction workers and employees on site with the EMPr and ensure their co-operation.	MPRDA & NEMA
	Permits and Permissions		Planning	Mkhondo Local Municipality must ensure that all licensing, permits or certificates required for the project are obtained and in place prior to the commencing of any construction activities on	MPRDA & NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				site.	
	Emergency Response Planning	Safety and health personnel on site	Planning	Plan all emergency responses including: <ul style="list-style-type: none"> <li>• Response procedures to fires, explosions, or any accidents that will require rapid medical responses; and</li> <li>• Responses to community and stakeholder concerns and communication procedures with potentially affected parties (I&amp;AP).</li> </ul>	MPRDA & NEMA
	Project Schedule	Undertaking the project in a timeous manner	Planning	Plan and develop a construction sequence to alleviate noise generation during the construction phase.	N/A
	Method statement	Project Management	Planning	Ensure that a method statement has been compiled and submitted to the Site/Construction manager.	N/A
	Grievances	Project Management	Planning	Develop grievance mechanisms for the recording and management of complaints and grievances specifically including (but not limited to) grievances from those living in the area.	N/A
	Records and Administration	Project Management	Planning	Ensure the following are up to date and available on site: <ul style="list-style-type: none"> <li>• A complaint registers.</li> <li>• An approved method statements.</li> <li>• Copies of the EMPr.</li> <li>• Environmental Permits and authorizations.</li> <li>• Copies of weekly checklists, compliance reports, incidence reports and corrective action reports.</li> <li>• Photographs of areas of concern (photos of non-compliance areas as well corrective action).</li> </ul>	



Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<ul style="list-style-type: none"> <li>Attendance registers of environmental awareness training.</li> </ul>	
	Recruitment of Labour	Project Management	Planning	<ul style="list-style-type: none"> <li>Where possible, the contractor must make use of local labour in support of the local economy.</li> <li>Advertise employment opportunities adequately, so as not to limit application opportunities.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)
<b>PRE-DRILLING/EXPLORATION</b>					
	Site establishment	Project Management	Planning	<ul style="list-style-type: none"> <li>The Contractor must, in agreement with the Construction Manager, decide upon an area for the location of a construction camp. The construction camp should be properly demarcated and fenced, and be adequately sized, with enough space for site offices, construction vehicles, equipment, material and waste storage areas</li> <li>The construction camp must be located in an area with minimal damage or disturbance to the environment.</li> <li>Establish 'NO-GO' areas- where no construction personnel, equipment/machinery or vehicles are permitted. Any identified Environmental Sensitive or important areas should be designated as 'NO-GO' areas.</li> </ul>	
	Site Housekeeping	Project	Planning	<ul style="list-style-type: none"> <li>The construction camp should always be kept</li> </ul>	

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		Management		clean and orderly.	
	Ablution Facilities	Project Management	Planning	<ul style="list-style-type: none"> <li>Enough toilet facilities should be provided near construction camp. The toilets should be properly covered and ventilated and should contain hand washing facilities.</li> <li>Portable toilets should be properly secured to the grounds to avoid toppling in the case of a wind/storm event.</li> <li>Ensure that all toilets function properly and are in a hygienic state. The toilets should be cleaned and emptied regularly.</li> <li>Ensure that there are no spillages when toilets get cleaned and emptied.</li> <li>Urination on site should be strictly prohibited.</li> </ul>	
<b>Site establishment activities (-ve):</b> <ul style="list-style-type: none"> <li>Vegetation clearance</li> <li>Topsoil stripping &amp; stockpiling</li> <li>Drill pad compaction</li> <li>Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage</li> <li>Vehicle movements</li> </ul> Waste management	Cultural and heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction/ set-up	<ul style="list-style-type: none"> <li>Environmental Permits and authorizations.</li> <li>Copies of weekly checklists, compliance reports, incidence reports and corrective action reports.</li> </ul>	Heritage Act
	Noise	Noise Generation	Construction/ set-up	<ul style="list-style-type: none"> <li>Photographs of areas of concern (photos of non-compliance areas as well corrective action).</li> </ul>	SANS 10103

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Visual	Visual intrusion	Construction/ set-up	<ul style="list-style-type: none"> <li>Attendance registers of environmental awareness training.</li> </ul>	N/A
	Traffic	Increase in traffic volumes near the drilling site	Construction/ set-up	<ul style="list-style-type: none"> <li>Traffic signs to be put around the site to notify motorist of the activities</li> <li>Construction vehicles to make trips on/off site only when necessary</li> <li>Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	National Traffic Act Regulations
	Signage	Traffic volumes, safety	Construction/ set-up	<ul style="list-style-type: none"> <li>The construction management needs to communicate the commencement and duration of construction activities to the community.</li> <li>Clear signage needs to be put up to make and keep the community awareness of construction activities to prevent any hazardous occurrences.</li> <li>Provide adequate safety warning signage on the roads.</li> </ul>	National Traffic Act Regulations
	Dust fall	Dust fall and nuisance from activities	Construction/ set-up	<ul style="list-style-type: none"> <li>Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	GN R. 827 (NEMAQA)
	Soil and vegetation	The potential impact of the	Construction/ set-up	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to</li> </ul>	NEMBA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.		<p>the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad.</p> <ul style="list-style-type: none"> <li>• Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>• Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> </ul>	
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Construction/ set-up	<ul style="list-style-type: none"> <li>• Environmental awareness training sessions should be part of the workers' induction and site workshops; and</li> <li>• If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of an animal specialist</li> </ul>	NEMBA
	Social	Friction between local residents/land owners and construction personnel	Construction/ set-up	<ul style="list-style-type: none"> <li>• All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>• All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the</li> </ul>	NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<ul style="list-style-type: none"> <li>• prospecting activities in the area;</li> <li>• There will always be a strict requirement to treat residents with respect and courtesy.</li> </ul>	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	<ul style="list-style-type: none"> <li>• No mitigation measures required.</li> </ul>	NEMA
	Storage and Disposal of Waste	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices	Construction/ set-up	<ul style="list-style-type: none"> <li>• Litter generated by construction workers must be collected in containers that are clearly labelled and disposed of weekly at registered waste disposal sites.</li> <li>• Enough weather- and vermin- proof bins should be placed on site for the disposal of solid waste. Littering on site should be strictly prohibited. The burning of waste on site should also be prohibited.</li> <li>• All waste generated from construction activities (building rubble, solid and liquid waste etc.), should be disposed of as frequently at an appropriately licensed refuse facility.</li> <li>• Minimize waste generation, e.g. by providing re-usable items and refillable containers (e.g. for drinking water) and adopt a 'cradle to grave' responsibility for wastes.</li> <li>• Comply with legal requirements for waste management and pollution control and employ "good housekeeping" and monitoring</li> </ul>	National Waste Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				practices.	
	Hazardous Waste	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices.	Construction/ set-up	<ul style="list-style-type: none"> <li>Any hazardous waste that may be generated should be separated from general waste and stored in clearly marked and properly sealed secondary containers.</li> <li>Any hazardous waste generated should be disposed of accordance with the Hazardous Chemical Substances Regulations, 1995 (Regulation 15).</li> </ul>	National Waste Act
	Spills and Leaks	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices.	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>Any equipment that is leaking should be temporarily decommissioned and removed from the construction site to a surface with an impermeable surface and waste water collection system.</li> <li>Spill response kits must be readily available and accessible to all personnel on site.</li> </ul>	National Waste Act
	PPE			<ul style="list-style-type: none"> <li>Always Ensure that all persons on site use Personal Protective Equipment (PPE) , this including safety boots, safety vests, protective masks etc.</li> </ul>	Employment Act
	Illegal Fires			<ul style="list-style-type: none"> <li>Ensure that no fires are ignited on site unless required for construction purposes, in which case the EC should designate areas for the fires. The designated areas should be as far as possible from vegetation.</li> </ul>	NEMA
	Erosion	The properties of the receiving environment and ensuring that the ground	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities.</li> <li>All topsoil stockpiles (if any) must be</li> </ul>	NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		is not susceptible to erosion beyond that which can be rehabilitated.		protected against wind, erosion and seeds, i.e. by use of shade cloth or netting. <ul style="list-style-type: none"> <li>Topsoil stockpiles should not exceed 2 m in height.</li> </ul>	
<b>PRE-DRILLING/EXPLORATION</b>					
<b>Exploration drilling (ve)</b> <ul style="list-style-type: none"> <li>Drilling</li> <li>Drill maintenance and refueling</li> <li>Core sample collection and storage</li> <li>Vehicle movements</li> </ul> Waste generation and management	Noise	Noise generation	Operations	<ul style="list-style-type: none"> <li>Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays from 08h00 – 17h00 and no activities on Sundays and public holidays.</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition.</li> <li>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	Heritage Act
	Visual	Visual intrusions	Operations	<ul style="list-style-type: none"> <li>The drilling rig and other visually prominent items on the site will be in consultation with the landowner;</li> <li>Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	SANS 10103

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Traffic	Increase in traffic volumes near the drilling site	Operations	<ul style="list-style-type: none"> <li>Traffic signs to be put around the site to notify motorists of the activities</li> <li>Construction vehicles to make trips on/off site only when necessary</li> <li>Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	N/A
	Dust fall	Dust fall and nuisance from activities	Operations	<ul style="list-style-type: none"> <li>Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, to be maintained between drill sites and 100m from dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	National Traffic Act Regulations
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re vegetated with locally indigenous species as soon as possible.</li> </ul>	GN R. 827 (NEMAQA)
	Animal life	Animal life will be affected in the immediate vicinity of the	Operations	<ul style="list-style-type: none"> <li>Measures implemented during site establishment should apply in this phase as well.</li> </ul>	NEMBA



Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.			
	Social	Friction between residents/land owners and construction personnel	Operations	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the prospecting activities in the area;</li> <li>There will always be a strict requirement to treat residents with respect and courtesy.</li> </ul>	NEMBA
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	<ul style="list-style-type: none"> <li>No mitigation measures required.</li> </ul>	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)
<b>DECOMMISSIONING AND REHABILITATION</b>					
Rehabilitation of the drill sites and surroundings	Removal of construction structures	Ensuring the receiving environment is	Rehabilitation	<ul style="list-style-type: none"> <li>Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing,</li> </ul>	NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		not impacted on any further, by dismantling machinery and equipment appropriately.		temporary services, fixtures and any other temporary works; and <ul style="list-style-type: none"> <li>• Ensure that all access roads utilized during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction.</li> </ul>	
	Waste and Rubble Removal	Visual aspects by preventing any further pollution.	Rehabilitation	<ul style="list-style-type: none"> <li>• Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates.</li> <li>• Load and haul excess spoil and inert rubble to fill in borrow pits / dongas or to dump sites indicated / approved by an environmental control specialist</li> <li>• Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site.</li> </ul>	National Waste Act
	Solid and Hazardous Waste			<ul style="list-style-type: none"> <li>• Store hazardous waste as indicated in the approved Environmental Management Programme Report.</li> <li>• Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site.</li> <li>• Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner.</li> <li>• Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment.</li> <li>• Dispose of all visible remains of excess</li> </ul>	National Waste Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				material when exiting the site.	
	Erosion protection		Rehabilitation	<ul style="list-style-type: none"> <li>• Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site.</li> <li>• Retain shrubbery and grass species wherever possible.</li> <li>• Perform regular monitoring and maintenance of erosion control measures.</li> </ul>	NEMA

## Appendix 6: Financial Provision

Applicant:   
 Evaluator: **Abel Mojapelo**

### CALCULATION OF THE QUANTUM

Ref No.: **MP30/5/1/1/2/ 17388 PR**  
 Date: **17-Jun-22**

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	6333,69	49	0,02	1	6207,0162
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,2	1	27024,84
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
<b>Sub Total 1</b>							<b>33231,8562</b>
1	Preliminary and General		3987,822744		<b>weighting factor 2</b>		3987,822744
2	Contingencies			3323,18562	<b>1</b>		3323,18562
<b>Subtotal 2</b>							<b>40542,86</b>
<b>VAT (15%)</b>							<b>6081,43</b>
<b>Grand Total</b>							<b>46624</b>

Singed: Abel Mojapelo  
 Date: 17/06/2022



