

BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Prospecting Right Application for coal on portion of Portion 35 of the farm Modderfontein 236 IR, situated in the Delmas Magisterial District under Victor Khanye Local Municipality, Mpumalanga Province.

DIRE Ref No.: MP 30/5/1/1/2/17275 PR

PREPARED FOR



HLUBI PROPERTIES (PTY) LTD
House No.28, 3rd Street, Delmas
Mpumalanga
2210

Contact Person: Mr N L Mgwenya
Tel: +27 13 665 1341
Email: cobra.koena@gmail.com

PREPARED BY



Office No. 870, 5 Balalaika Street, Tasbet Park Ext 2,
eMalahleni (Witbank), 1040
Tel.: +27 13 692 0041
Fax: +27 86 514 4103
E-mail: admin@singoconsulting.co.za

COMPETENT AUTHORITY



Department of Mineral Resources & Energy, Saveways
Crescent Centre, Mandela Drive, eMalahleni, 1035

DRAFT REPORT | 2022



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).

NAME OF APPLICANT: Hlubi Properties (Pty) Ltd



Contact Person: Mr N L Mgwenya

Tel: +27 13 665 1341

Email: cobra.koena@gmail.com

Physical Address: House No.28, 3rd Street, Delmas

Mpumalanga

2210

FILE REFERENCE NUMBER SAMRAD: MP 30/5/1/1/2/ 17275 PR

IMPORTANT NOTICE

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

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

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application conforms to the requirements of the EIA Regulations, any protocol or minimum information requirements relevant to the application as identified and gazetted by the Minister in a government notice or instruction or guidance provided by the competent authority to the submission of application.

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) identify residual risks that need to be managed and monitored.

DOCUMENT CONTROL			
Document Title	Basic Assessment Report and Environmental Management Programme report for Coal on portion of Portion 35 of the farm Modderfontein 236 IR, situated in the Magisterial District of Delmas, Mpumalanga Province DMRE REF: MP 30/5/1/1/2 (17275) PR.		
Version	Version 1:	Draft Basic Assessment Report and Environmental Management Programme (24 July 2022 – 23 August 2022)	
QUALITY CONTROL			
	Compiled By	Reviewed By	Distribution
Name	B Moholola	Dr NK Singo	DMRE Submission
Designation	EAP Intern	Principal EAP	

DISCLAIMER

The opinion expressed in this and associated reports are based on the information provided by Hlubi Properties (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Hlubi Properties (Pty) Ltd.

Singo Consulting acts as an advisor to Hlubi Properties (Pty) Ltd and exercises all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

Except where expressly stated, Singo Consulting has not verified the validity, accuracy or comprehensiveness of any information supplied for its reports. Singo Consulting shall not be held liable for any errors or omissions in the information given or any consequential loss resulting from commercial decisions or acts arising from them.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by Hlubi Properties (Pty) Ltd or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Singo Consulting is both complete and accurate. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

These views do not generally refer to circumstances and features that may occur after the date of this study, which were not previously known to Singo Consulting (Pty) Ltd or had the opportunity to assess.

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ABBREVIATIONS

CA	Competent Authority
CBA	Critical Biodiversity Area
DAFF	Department of Agriculture, Forestry and Fisheries
DEFF	Department of Environmental, Forestry and Fisheries
DMRE	Department of Mineral Resources & Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPR	Environmental Management Programme report
ESA	Ecological Support Area
ESM	Environmental Site Manager
GDP	Gross Domestic Product
GN	Government Notice
GIS	Geographic Information System
GPS	Global Positioning System
GVA	Gross Value Added
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
Mamsl	Meters above mean sea level
MHSA	Mine Health and Safety Act (Act No. 29 of 1996) [as amended]
MPRDA	Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (as amended)
NEMA	National Environmental Management Act, 1998 (Act no 107 of 1998) (as amended)
NEMAQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004) (as amended)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

NEMWA	National Environmental Management: Waste Act (Act No. 59 of 2008) (as amended)
NHRA	National Heritage Resource Act, 1999 (Act No. 25 of 1999)
NVFFA	National Veld and Forest Fire Act (Act No. 101 of 1998)
NWA	National Water Act, 1998 (Act No. 36 of 1998) (as amended)
PM	Public Meeting
PPE	Personal Protective Equipment
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANS	South African National Standards
SAWS	South African Weather Service
SDF	Spatial Development Framework
SLP	Social and Labour Plan
SM	Site Manager
VAC	Visual Absorption Capacity

PART A:

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1 INTRODUCTION

Singo Consulting (Pty) Ltd on behalf of Hlubi Properties (Pty) Ltd submitted an application for a Prospecting Right subject to Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an application for an Environmental Authorisation in terms to Chapter 6 of GNR 982 enacted under the National Environmental Management Act (Act 107 of 1998) (NEMA) for coal.

The proposed project will aim to ascertain if economically viable mineral deposits exist within the application area. In order to undertake the Proposed prospecting activities, Hlubi Properties (Pty) Ltd will require a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002). The Applicant is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report and Environmental Management Programme report (BAR & EMPr).

Singo Consulting (Pty) Ltd has been appointed by Hlubi Properties (Pty) Ltd to manage the Environmental Authorisation process by conducting Environmental Impact Assessment, Public Participation for the proposed project and to compile the Basic Assessment Report and Environmental Management Programme report in support of the Prospecting Right application which in turn will be submitted to the Department of Mineral Resources and Energy for adjudication. This BAR & EMPr has been designed to meet the specifications as set out in the NEMA's 2014 EIA Regulations. Feedback received from stakeholders will form basis of this BAR & EMPr.

Locality Description: The proposed Prospecting Right Application covers portion of Portion 35 of the farm Modderfontein 236 IR encircling a total of 113.417 ha. The proposed project area is situated under the jurisdiction of the Victor Khanye Local Municipality under the Magisterial District of Delmas. The project area is adjacent west to Rietkol AH, approximately 1.2 Km east south of EnviroServe Holfontein Landfill and approximately 323 m south west of AFGRI Poultry

Trial Facility. It can be accessed from Delmas via the R50 which then connects to the R555 thus leading into a secondary road named, Main Rd. Alternatively the proposed project area may be accessed just after the off ramp from the N12 into a gravel road called Main Road. The proposed project area is intersected by the N12.

1.1 Details of the Environmental Assessment Practitioner

Singo Consulting (Pty) Ltd was appointed by Hlubi Properties (Pty) Ltd as an independent EAP to compile this report. The contact details of the consultants who compiled this report are as follows:

Table 1: Details of the EAP that prepared the Report

Name of the Practitioner	Boitumelo Moholola
Designation	EAP Intern
Tel No.	+27 13 692 0041
Cell No.	+27 71 130 9956
Fax No.	+27 86 515 4103
Email	boitumelo@singoconsulting.co.za

Table 2: Details of the EAP who reviewed the Report

Name of the Practitioner	NK Singo
Designation	Principal EAP
Tel No.	+27 13 692 0041
Cell No.	+27 78 2727 839
Fax No.	+27 86 515 4103
Email	kenneth@singoconsulting.co.za

1.2 Qualifications of the EAP

Please refer to attached appendix for CV of the EAP.

Summary of EAP's Past Experience

In the year 2008, Singo Consulting (Pty) Ltd was established as an Independent Consulting Company focused to create opportunities within the Mining and Environmental Industry. With time, Singo Consulting (Pty) Ltd has diversified its services, providing high value Geological, Hydrological, Environmental, Cleaning and Rehabilitation specialized services to clients across a range of industries that are primarily natural resource based.

The company aims to be a consulting firm that communicates sound environmental services solutions. Singo Consulting (Pty) Ltd takes pride in the fact that it holds no equity in any project which in turn permits it to offer clients objective support on crucial issues.

For carried out Environmental Impact Assessments, request from consultant.

2 Locality of the overall Activity

Table 3: Location of the Overall Activity

Farm Name:	Portion of Portion 35, Modderfontein 236 IR
Application area (Ha)	113.417
Magisterial district:	Delmas
Distance and direction from nearest town	Approximately 15 Km West of Delmas
21 digit Surveyor General Code for the Farm	T0IR00000000023600035
Locality map	See Figure 1 & 2 below

3 Locality map

(show nearest town, scale not smaller than 1:250000)

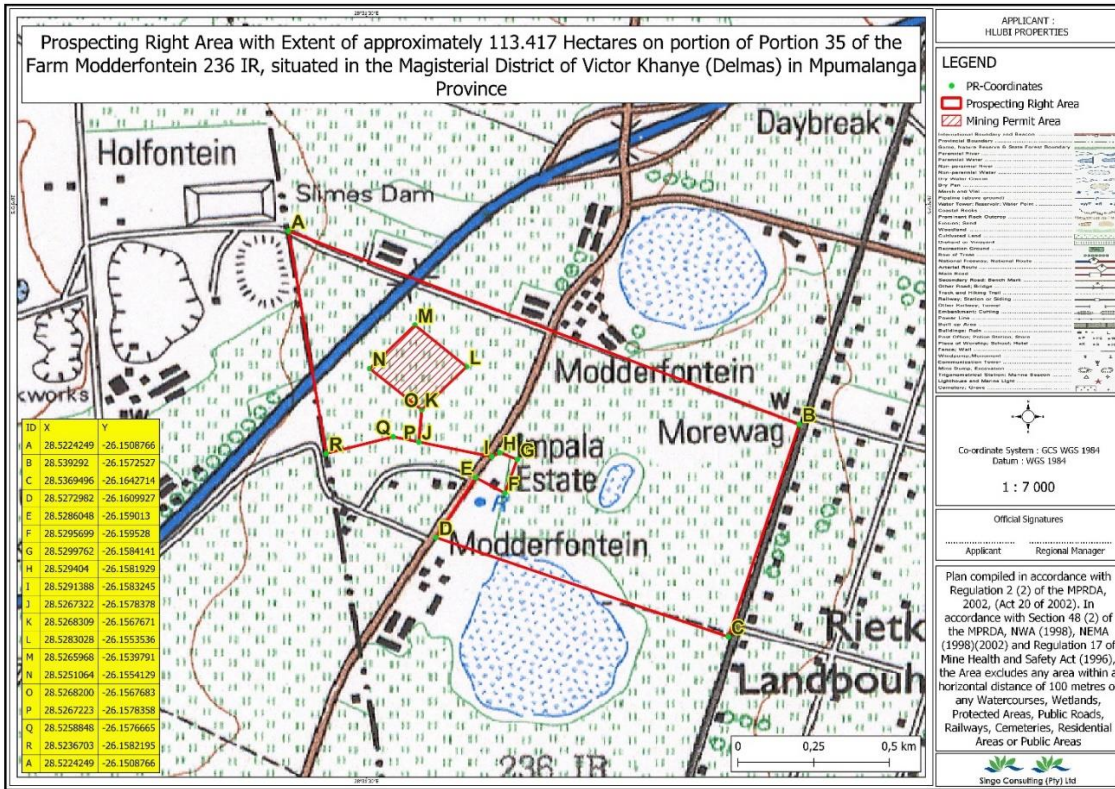


Figure 1: Regulation 2.2 map of the proposed project area (Singo Consulting (Pty) Ltd, 2022)

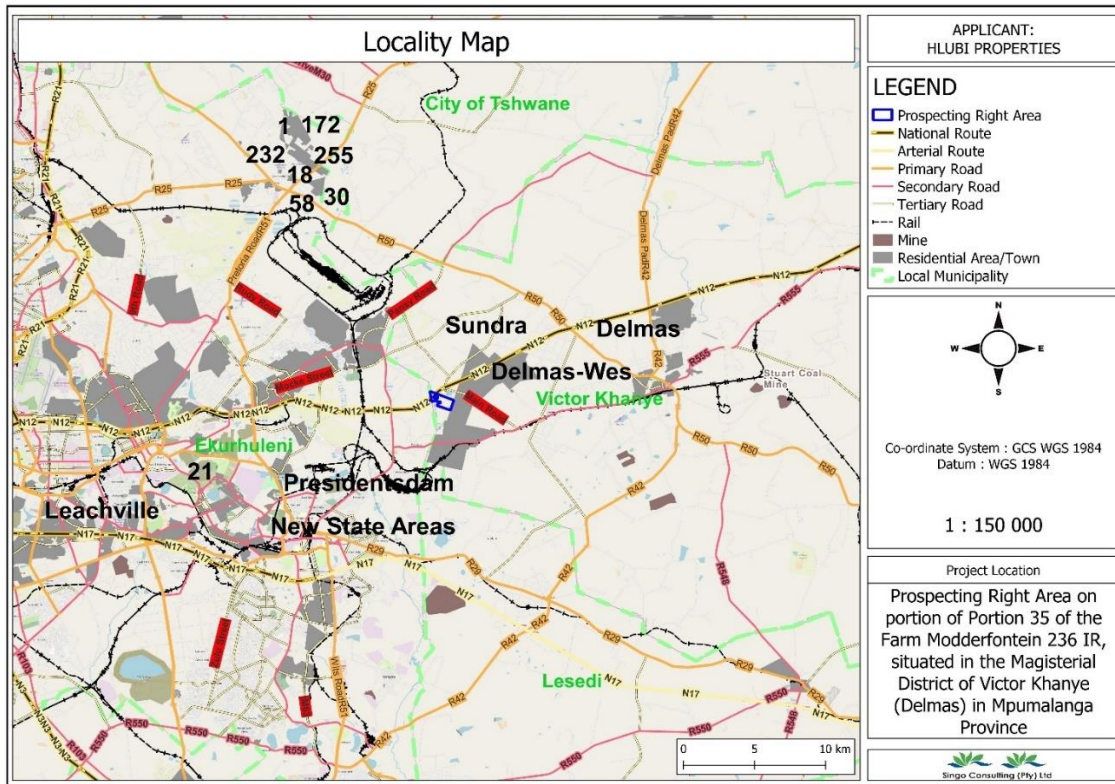


Figure 2: Locality of the proposed project area (Singo Consulting (Pty) Ltd, 2022)

As seen on the above map, the project area is within Victor Khanye Local Municipality near a major town known as Delmas. The proposed project is located within Mpumalanga Province and is near the border of Gauteng Province. The site may be reached from Delmas via the R50, which links to the R555 and leads to Main Rd, a secondary road. Alternatively, the intended project location can be reached soon after exiting the N12 onto Main Road, a dirt road. The N12 runs through the proposed project area. The surrounding area is used for agricultural purposes such as maize farming and poultry farming.

4 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.)

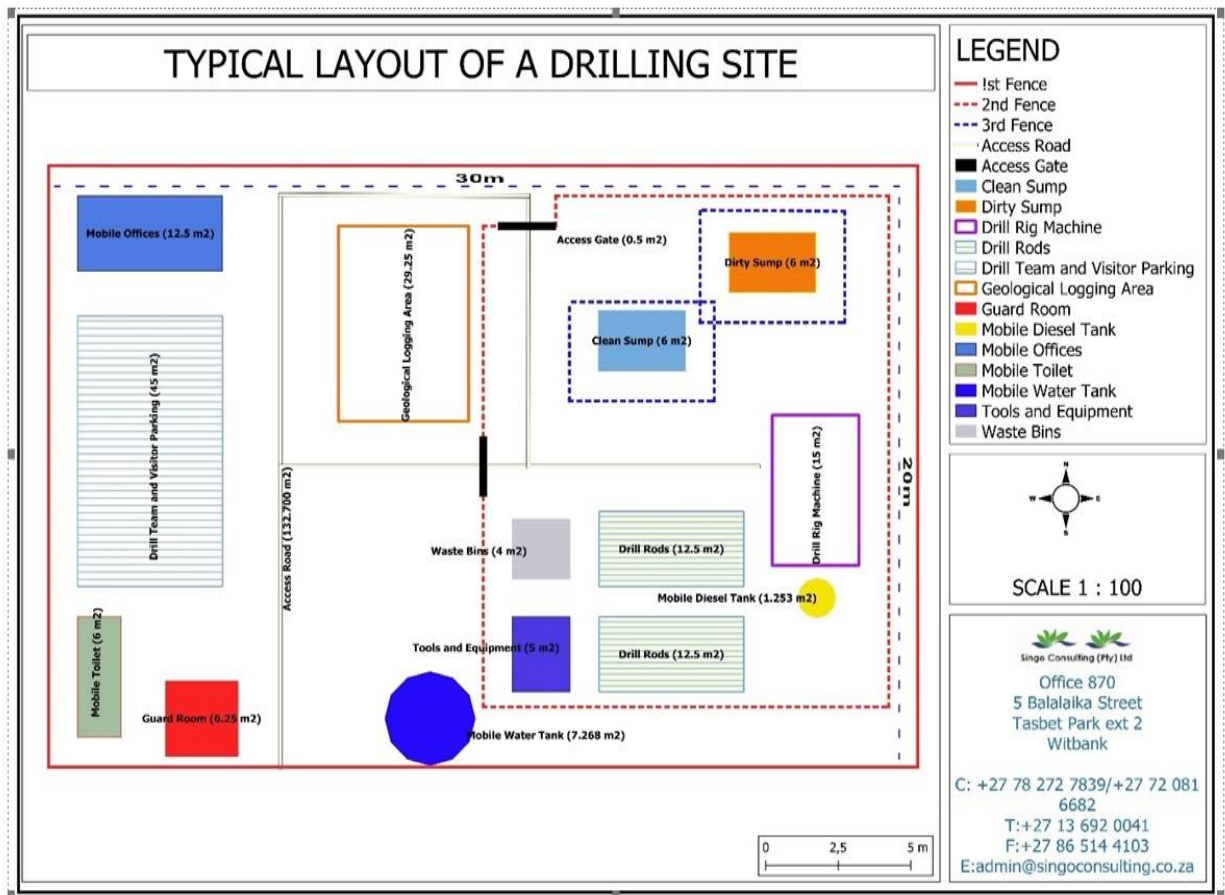


Figure 3: Typical Layout of a drill site (Singo Consulting (Pty) Ltd, 2021)

4.1 Listed and specified activities

Table 4: Listed and specified activities

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc. 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.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE GNR 517, June 2021	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
Prospecting Area	113.417 ha	X	GNR 517 Listing Notice 1, Activity 20.	Not required
Vegetation clearing	- 600m ² * 15= 9000m ² - 0.9 ha		Not Listed	
Drilling	0.9 ha		Not Listed	
Site Camp	600m ²		Not Listed	
Temporary road creation	300m ²	X	GNR 517, Listing Notice 1 Activity 56	

Drilling method	Diamond core drilling
Number of boreholes	15
Depth of boreholes	110m
Duration of drilling	A borehole takes roughly about 2 days to complete; 15 will take at least 30 days.
Demarcated working area	0.9 ha for all 15 drilling sites
Total area to be disturbed	0.9 ha

4.2 Description of the activities to be undertaken

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

Activities for the prospecting of Hlubi Properties (Pty) Ltd will be done in three phases. The Proposed Prospecting area is depicted by Figure 1-2 above clearly showing the areas of interest.

A total number of proposed boreholes to be drilled for the operation is fifteen (15). Vegetation will be cleared at each drilling site and progressing rehabilitation will take place after each drill site. The total vegetation clearing for the overall activities is 0.9 ha. The Proposed project area will be accessed through the currently existing roads and **only** where necessary and with the agreement of the landowner will new access roads be constructed. Access within the farm will be communicated with the respective Landowner.

As part of the proposed Prospecting Work Program (PWP), both non-invasive and invasive prospecting activities will be conducted. The framework will adopt a staggered strategy, where the work program for prospecting is split into several sequential phases.

There will be a brief period at the end of each phase to compile and review outcomes. The findings will decide not only whether prospecting progresses but also how it will proceed. The applicant will only take action over the next prospecting phase once satisfied with the results obtained in the previous phases. Moreover, if need arises, smaller, non-core parts of the prospecting work program will be undertaken. A detailed descriptive of the invasive and non-invasive activities planned is presented below.

Phase 1 (Non-invasive)

Desktop study: All historical geological data (including assays and mineralogy) will be gathered and evaluated. This will include assessments of any existing mining operations in the area, boreholes and any relevant data from any institution that may have done work in and around that that specific area. As part of this phase, remote sensing studies will be carried out to prepare for the implementation of subsequent phases.

Preliminary field work: This allows the implementation of survey grids for geological and structural mapping as well as geophysical surveys. Following these activities, proposed drill sites for the drilling program will be pegged. At the end of this phase, a preliminary report with updated maps will be produced.

Geophysics: In smaller areas, a hand-held instrument is used to search for ore underground. In larger areas, an instrument is mounted on an aircraft, which is then used to survey the area for ore targets. The procedure is non-invasive.

Phase 2: Invasive

Field mapping: This is the verification of on-site field lithology based on the geological map and geophysical data. This includes ground mapping of geological features, including rock outcrops, lithological contact zones, geological structural features, surface depressions and vegetation types. This may include collecting data from outcrops for analysis, as the outcrop also indicates what can be found underground.

Site establishment:

This is the mobilisation of all project equipment to the site or a nearby location in order to conduct efficient prospecting. There is very little environmental impact with regards to this. Rehabilitation will take place progressively per drill site. Site Establishment includes

- **Ablution:** Portable chemical toilets
- **Temporary office area:** A temporary site office shaded area will be erected at the drill site. This will be used for daily project administration.
- **Accommodation:** No accommodation for staff and workers will be provided on-site; Workers will be transported to and from the prospecting site on a daily basis. Night security staff will be employed once equipment has been established on site.
- **Storage of dangerous goods:** During the drilling activities there will be no storage of diesel fuel, oil and lubricants on site. Trucks and other mobile transports will utilise the nearby filling station. Significant amount of diesel will be transported to site for the drill rig machine on a daily basis for the duration of the prospecting activities.



Figure 4: Typical example of mobile toilets to be adopted



Figure 5: Typical example of Gazebo as a usage for temporary offices/shaded Area.



Figure 6: Typical example of portable diesel storage tank

Drilling:

A core drilling program will be carried out, which will be informed by the results of the previous phased approach and will aid in the identification of areas to be drilled. To evaluate the area, logging and sampling of the borehole core will be performed. The drill core samples will be sent to an accredited laboratory for analysis and determination of the average mineral content.

At least fifteen holes will be drilled during this phase. The drill bit size is NQ (76.7 mm in diameter) and will drill to an average depth of 110 m, which will cover an area of 0.9 ha at any given drilling time (total area of disturbed area per drilled borehole).

Pre-feasibility studies:

Geological modelling of gathered existing geological data and prospecting data will be performed, if the results warrant it.

Phase 3:

Closure & rehabilitation: This includes progressive rehabilitation and closing borehole openings, re-vegetating, returning soil stockpiles, and removing any prospecting-related waste. This will restore the area to as good or better condition than it was before prospecting began.

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5 POLICY & LEGISLATIVE CONTEXT

Table 5: 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
National Environmental Management Act (No. 107 of 1998) (NEMA):	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. The application was lodged at the DMRE
Minerals and Petroleum Resources Development Act (No.28 of 2002) (MPRDA): In support of the Prospecting Right Application submitted by Hlubi Properties (Pty) Ltd, the applicant is required to conduct a NEMA BAR process in terms of Section 5A and Chapter 16 of the MPRDA.	This entire report is prepared as part of the Prospecting Right Application under the MPRDA, section 16(2).	The application is for a prospecting right and therefore all regulations pertaining to the application process of a prospecting right and environmental management are applicable to this application. The application was accepted on the 5th of May 2022 . DMRE REF: MP 30/5/1/1/2/ 17275 PR
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.	No Water Use License has been applied for this prospecting project.	No water use license is required for this Application. The water required will be bought from the municipality or licensed water supplier that sells potable water or treated industrial water for which a water sale agreement will be drawn and agreed upon before work commences. Appropriate dust extractions /suppression

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		equipment will be a condition imposed on the drill contractor for their drill rigs.
The National Environmental Management: Biodiversity Act (Act No. 10 of 2004 – NEMBA) Section 57 and 87	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.
Victor Khanye Local Municipality Integrated Development Plan (IDP) Strategic Development Framework (SDF)	Needs and Desirability, socio-economic needs. Land use	Incorporated in Section 6 and 9.1 of this BAR. The applicant acknowledges the need to maximize economic benefit from mining, industrial, business, agricultural and tourism development in the area and promote a climate for economic development in line with the municipal development frameworks.
Municipality By-Laws: Waste Management by-law Act 59 of 2008, Air Quality Management By-law Act 39 of 2004, Noise control by-law, Spatial Planning and Land Use Management act no 16 of 2013 (SPLUMA).	Environmental Management measures awareness plan	Best practice guidelines will be followed for any by-law's management and the development of the mine environmental and other legislative management.
Constitution of South Africa, Specifically, everyone has the right:	BAR & EMPr	Prospecting activities will only proceed after effective consultation. All activities will be

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<p>a) to an environment that is not harmful to their health or wellbeing; and</p> <p>b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that</p> <p>i) prevent pollution and ecological degradation;</p> <p>ii) promote conservation; and</p> <p>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>		<p>conducted in a manner that does not violate the Constitution of the Republic of South Africa.</p>
<p>National Heritage Resources Act, 1999</p>	<p>Management measures</p>	<p>Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and SAHRA notified in order for an investigation and evaluation of the find(s) to take place.</p>

6 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).

Modern life is unimaginable without electricity. It lights houses, buildings, and streets; provides domestic and industrial heat; and powers most equipment and machinery used in homes, offices and factories. Coal is the most abundant source of electricity worldwide, currently providing more than 36% of global electricity. Coal-fired power plants provide affordable, reliable and constant power that is available on demand to meet energy consumption

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needs. As much of the world lacks access to modern, clean energy, coal is still essential to alleviating worldwide energy poverty (www.smenet.org).

The applicant has identified this opportunity upon portion of Portion 35 of the farm Modderfontein 236 IR which is privately owned by Namutoni Boerdery (Pty) Ltd. Based on the location of the proposed site, prospecting is favoured and most likely to yield positive feedback. The activities taking place are crop farming and poultry farming. Drill sites will be aimed at minimising the impacts of the drilling activities on the current land uses.

Table 6: Need and desirability considerations

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?	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. The land use is not associated with prospecting.
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?	Should a mining right be applied for and be approved in future, the integrity of the existing environmental management priorities of the area may be compromised, and a full Environmental Impact Assessment must then be conducted to determine the sustainability of the mining activities. The proposed project has the potential to have a positive impact on the socio-economic conditions of the local communities involved as well as for gathering information about the geographical layout of the area. Should the results of the prospecting show that feasible reserves are present to mine, a mining right may be approved.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	According to the IDP (2021/2022), the unemployment rate of economically active population in Delmas as of 2016 was 21.6% according to Census. High unemployed is also due to the influx of job seekers into the municipal area. The Covid-19 pandemic has resulted to further job losses. The Hlubi Properties (Pty) Ltd prospecting will yield positive impact on the socio-economic conditions especially if it graduates to mining, by creating more

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		<p>jobs and providing developments to the local communities.</p> <p>In the last few years whilst Community Services has increased and Mining as an employer has grown and now contributes 12, 7%.</p>
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?	All infrastructure for services and capacity will be temporary and will be provided for the proposed prospecting/drilling activities. Temporary Infrastructure includes i.e Mobile toilets, temporary shaded area (in a form of Gazebo). Drilling mechanisms to be employed will be of diamond core drilling. 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 mining sector is a significant contributor to the National GDP as well as a massive employer of people. This project will contribute to the National Development Plan of eradicating poverty/unemployment. Chapter 6 of the National Development Plan highlights an "inclusive rural economy" and the objectives of this plan are to create jobs in mining and industry and activating rural economies through service to small and micro mining.
PART II: DESIRABILITY		
7.	Is the development the best practicable environmental option for this land/site?	The project area lies on heavily modified land. The activities currently present on site have already had an impact on environmental management. The disturbed areas (drill sites) will be rehabilitated immediately after prospecting activities.
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?	The approval of this prospecting application will not compromise the integrity of the existing environmental management priorities of the area provided that sensitive areas are avoided and the mitigation measures as recommended in this report and in the EMPr are implemented.

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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?	The integrity of the existing environmental management priorities for the area will not be compromised by this development.
10.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	The coalfield lithology comprises sediments of the Dwyka and Vryheid Formations of the coal-bearing Eccca Group, Karoo Supergroup thus providing the ideal geological formation for the presence of the mineral applied for. The current infrastructure suffices for the process of prospecting. The planned drilling activities does not need any new infrastructure.
11.	How will the activity of the land use associated with the activity being applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	As far as the Basic Assessment on the area of question, there is no known heritage or cultural significance. Should the standings change, the relevant authority will be notified immediately and information will be included into the BAR & EMPr.
12.	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>The impacts on well-being, following mitigation, will be as follows:</p> <ul style="list-style-type: none"> • Visual: Medium to low • Dust: Low • Noise: Low • Vibrations: Low <p>Strict adherence to the recommendations & mitigation measures identified will be ensured.</p>
13.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	The mining industry in Mpumalanga 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. The applied commodities contribute significantly towards the Municipal's GDP.
14.	Will the proposed land use result in unacceptable cumulative impacts?	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.

7 MOTIVATION OF THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE

The geology is the primary driver in determining the location of prospecting and mining. After due consideration and conducting background and desktop studies, in the western Witbank Coalfield, the No. 2 Seam Sequence tends to be much more variable in nature than it is in the central part. This is mainly due to the irregular nature of the Transvaal Supergroup (Malmani Group) dolomite floor. The Dwyka Group outcrops in the area around Delmas and is also well known from borehole core, which show the succession to be between 0 and 10 m in thickness. The base of the No. 2 Seam Sequence is usually formed by poorly sorted matrix rich diamictites, with angular to rounded basement clasts, set in a matrix of fine- to medium-grained sandstone, which may be highly carbonaceous in places. Maximum clasts sizes documented by the authors are in the region of 30 cm. According to Le Blanc Smith (1980a) the Dwyka Group diamictites may in turn be overlain by a succession up to 36 m thick of mudstone and siltstone, which grades upwards to sandstone and conglomerate that form the floor of the No. 1 Seam or its carbonaceous mudstone equivalent. (see **Figure 7** for the project geology).

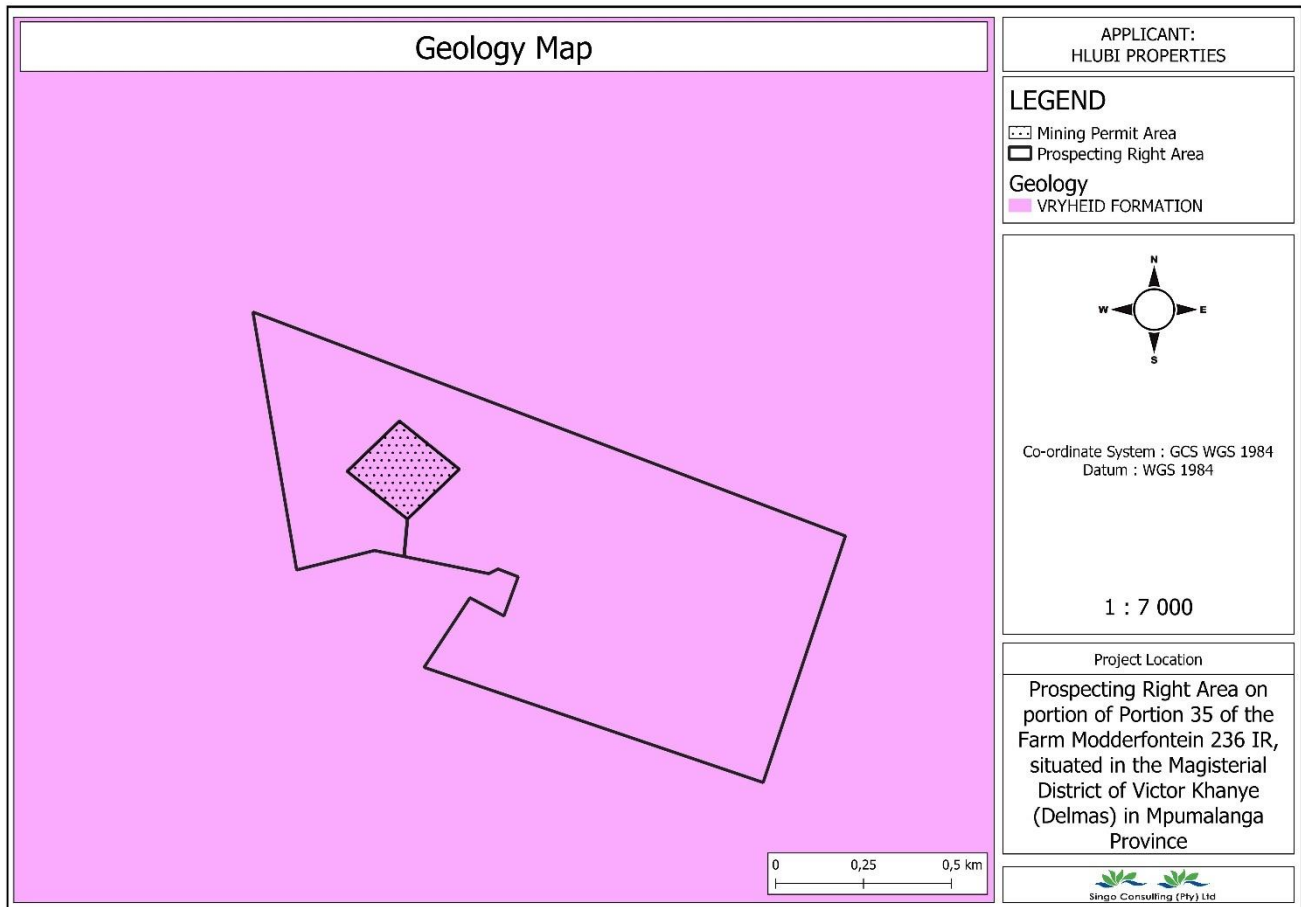


Figure 7: Geological map (Singo Consulting (Pty) Ltd, 2022)

8 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.)

8.1 Details of all alternatives considered

(With reference to the site plan provided 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)

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

The prospecting Right application directly affects portion of Portion 35 of the farm Modderfontein 236 IR. The development footprint encircles 113.417 ha. The mining area can be reached by an existing access road from the regional road R 555 from Delmas joined by a road named main road leading to the Katboschfontein road and a gravel road to the project area or alternatively by the offramp from the N12 into the main road then Katboschfontein road to the project area. No new road infrastructure needs to be constructed.

8.1.2 The type of activity to be undertaken

No bulk sampling work will be carried out during this prospecting program. Invasive prospecting activities such as drilling as well as non-invasive activities will be conducted during prospecting due to the unavailability of extensive historical borehole datasets.

8.1.3 Design or Layout

No permanent structures will be constructed since exploration is temporary in nature. Landowners will be consulted duly for access and usage of the existing access roads.

- Portable ablution facilities will be used.
- It is planned to use one drill rig for all 15 drill holes.
- Rehabilitation will closely be controlled and supervision will be focussed.
- No changes to the layout are considered, however, the holes can be orientated to match the shape of the good quality of resource with the geophysical survey information.
- Buffer zones will apply to all the sensitive areas on site

8.1.4 Technology Alternatives

The technology chosen is deemed effective for exploring deposits of this type, resource definition and evaluation. This is inclusive of the non-invasive and invasive technology. The non-invasive includes desktop studies, geological file mapping and geophysical survey whilst invasive includes the prospecting boreholes for resource estimation. Prospecting will be done in interrelated phases. Alternatives will be considered once the preceding phase necessitate reasonable changes and adaptations.

8.1.5 The operational aspects of the activity

A prospecting period of five years has been applied for. No permanent services including water supply, electricity, or sewerage facilities are required. All infrastructure to be developed will be mobile and temporary including portable toilets and water tanks.

8.1.6 The option of not implementing the activity

Not implementing the prospecting activities will result in a loss of information of mineral reserves present on the study area. Should economically feasible reserves exist on the study area and the applicant cannot prospect, the opportunity to utilise the reserves for future coal mining will be lost, i.e. the minerals will be sterilised and resultant socio-economic benefits will be lost. The proposed prospecting activities have the potential to have a negative impact on the ecological environment as well as the social environment of the area. These impacts, however, can potentially be prevented, minimised, mitigated and managed to low and very low levels, as shown through the impact assessment.

8.2 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)

The Public Participation is the basis of any EIA process. The Public Participation Process (PPP) seeks to provide the opportunity for all stakeholders including potential players and all applicable I&APs, state departments, state bodies and the competent authority (CA) to register so that they can raise concerns, contribute to local knowledge, comment on the Draft

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Basic Assessment Report (DBAR) & Environmental Management Programme report (EMPr) but most importantly provide suggestions for enhanced benefits. Comments received during the Public Participation Process are incorporated into the Final BAR & EMPr to be submitted to the competent authority being the Department of Mineral Resources & Energy for adjudication.

Defining Stakeholders

The term public can be taken to mean any individual or group in society, including the government and business sector. Who or what is included in the "public" depends very much on activities under consideration. The term "stakeholder" helps clarify the meaning of "public" in the context of development activities.

A stakeholder is any person, group or institution that has an interest in an activity, project or program. This includes both intended beneficiaries and intermediaries, those positively affected, and those involved and/or those who are generally excluded from the decision-making process.

Stakeholders can usefully be categorized in five main types:

- Directly affected people (who live or work where the project will be located)
- indirectly affected people (who live nearby or use resources from the project area)
- public sector agencies (ministries, provincial or local government, government mandated mass organizations)
- private developers (private companies with a direct investment in the project) and their subcontractors and financiers
- others (donors, NGOs with a stake in the project, external advisors, the business sector).

Objectives of the Public Participation

- Main objectives for involving the public are:
 - the identification of key issues of concern to the public, addressing public perceptions,
 - the provision of local expertise and knowledge,
 - the identification of possible alternatives/options,
 - ensuring that affected groups are involved at the very beginning of project design, and
 - the critical review of documentation.

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The separation of these objectives is somewhat artificial as the achievement of one will often depend upon the achievement of another.

Identification of Interested and Affected Parties

Interested and Affected Parties Identification Procedure

The Interested & Affected Parties for this particular project were identified through e-mail media communications. Other means of Identification & notification adopted was through the print media (in a form of newspaper) and placement of notices in public spaces.

Newspaper Advertisements

Newspaper advertising is used to target particular demographics that are traditionally much harder to reach through other media such as the internet and other social networks. A newspaper advertisement was published on the 24th of June 2022 in the *Streeknuus/news* to notify all the Interested & Affected Parties of the proposed development. See **Figure 8** for the published newspaper Advertisement.

NEWS
STREEK

Group Branch Manager
Linda Pretorius
linda@carton.co.za
20 Sydney Road,
Ravenswood, Boksburg

NEWS ROOM

Editor
Wilma van Huizen
wilma@carton.co.za

Sub-Editor
Anja Masethem
anja@carton.co.za

Journalists

Delmas
Thia Bertha
thia@carton.co.za

Bronkhorstspuit
Zeldine Fouie
zeldine@carton.co.za

Editor-in-Chief
Greater Jhb
Maretha Lombard
maretha@carton.co.za

Sales Manager
Carlene du Toit
carlene@carton.co.za

Sales Consultant
Judith Tate
judith@carton.co.za

Production Manager
Taybah Shaik
010 971 3375
taybah@carton.co.za

Classified Manager
Eagan Govender
010 971 3357
eagan@carton.co.za

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Press Council

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abc



Die gekaapte diesel-tenkwa waar dit op die N12-hoofweg, digby die R42, Delmas/Bronkhorstspuit-afrit, deur lede van die polisie afgetrek is. Foto: Verskaf

Polisie vind gekaapte diesel-tenkwa terug

'n Diesel-tenkwa wat glo by Sonkzies raby Bronkhorstspuit gekaap is, is teruggevind en 'n verdagte is in hegtenis geneem.

Volgens kaptein Carla Hartley, media-woordvoerder van die Delmas Polisie, is die Delmas-tak gekontak omtrent 'n gekaapte tenkwa wat op die N12-hoofweg beweeg het.

Lede van die Spring Polisie en die Ekuhumbeni Metropolisie (EMPD) het aan die soektog na die gekaapte voertuig op Woensdagoggend, 15 Junie deelgeneem.

Goete samewerking tussen

opspringsmaatskappy het daartoe gelei dat die tenkwa op die N12-hoogweg digby die R42, Bronkhorstspuit / Delmas-afrit van die pad afgetrek is.

Slegs een insittende, die bestuurder, is in die diesel-tenkwa gevind.

Die man, 'n Mosambiekse burger (40), is op die toneel in hegtenis geneem omdat hy moontlik verbind kan word met die kaping van die tenkwa vroeër die dag op Bronkhorstspuit.

Die man sou op Vrydag, 17 Junie in die Delmas Distrikhoof verskyn het op 'n

Burglaries and robberies are rife in Bronkies

According to the Bronkhorstspuit Police, a number of burglaries (housebreakings) and robberies have been reported in their policing precinct.

"These burglaries happen mostly during the day in areas such as Erasmus, Cultura Park, Bronkhorstbaai and Zithobeni," said Const Cathrine Ramovha, communication officer for the Bronkhorstspuit Police.

According to Ramovha, criminals specifically target houses where no one is at home and zoom in on valuable items such as plasma television sets, laptops, cell phones and other valuables.

Ramovha further told Streeknuus that there is apparently a white Mercedes Benz roaming the streets during the day.

"It is suspected that the occupants could be the ones committing these crimes."

"The police, therefore, plead with residents to be alert and on the lookout."

"If they do come across such a suspicious-looking vehicle, take down the registration number and immediately report it to the police."

The Bronkhorstspuit Police also urged residents to be alert and vigilant when leaving their homes.

"Please also profile your domestic workers and gardeners."

The Bronkhorstspuit

Police provided some tips to homeowners to help reduce their chances of becoming a victim of these criminals:

- Get to know your neighbours.
- Post or pamphlets that have been left at the gate for a long period is a sure sign that nobody is at home. Ask someone to keep an eye on your property and remove post and newspapers at the gate.
- Curtains should be closed in the evening to prevent people from observing the activities inside your home.
- Never leave contractors or workers unattended at your home.
- Do not leave your garage, front or back door open; it serves as an invitation to burglars.
- Conduct a thorough back-ground check before employing anyone (permanent or casual workers). Request their identity documents and make a copy for safekeeping. Check their references and do a security clearance at the police.
- Never leave keys in a lock.
- Do not leave any laundry or tools outside.
- Residents must also play their part in helping the police in the fight against crime by forming a neighbourhood watch group and the police about any suspicious activities.

Contact the Bronkhorstspuit Police on 013 932 9222 / 013 932 9246.

Mense in taxi beroof ryloper

'n Niksvermoedende ryloper is opaterdag, 18 Junie op Ellof met 'n byl gedreig en van sy besittings roof.

Die ryloper het omtreks 14:45 Spoorweglaan duimgegooi vir 'n saamrygeleentheid.

Volgens 'n mediaverklaring van kaptein Linky Ockoen, inspekteurvoerder van die Delmas Polisie, het 'n wit Toyota Quantum met sowat ses sitstenters by die slagoffer gestop.

Na 'n paar minute se ry, het een in die insittendes, gewapen met 'n byl, glo die ryloper bevestig, 'n kep afgedruk en hom beveil in stil te bring.

Die ander het die agter deur oopgemaak en hom van sy stroom en koertant beroof.

Die ryloper is hierna in uitleraar van Sandra afgetaai aar 'n verbyganger hom te help genel het en na die Suidra buse geneem het.

Die slagoffer het toe saam met die polisie in die rigting van Springs gery.

Dienselide Quantum-bussie is gewaar.

'n Hoëspoed-jaagtog het gevolg waarna die bussie uiteindelik in Etwatwa tot stilstand gedwing is.

Die insittendes van die taxi het gevlug, maar een vrou is in hegtenis geneem.

Die polisie sal wat die inhegtenisname goedm het, is later ingelig van 'n klaer by die Etwatwa Polisie wat glo 'n kapingsslagoffer is.

Met die saamkoms by die Suidra Polisie-stasie, is by eger deur die slagoffer uitgedoen as die bestuurder van die Quantum waarin hy (die slagoffer) vroeër beroof is.

Die bestuurder van die Quantum is toe ook in hegtenis geneem.

NOTICE OF PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION

ISIDULU
Izinto zembo yokulandela iingelo Lesicelo sikaKhulu umhlaba ngokufutshela Wezombini phansi kanye Necimbini nophethili (MPRDA) (Umthetho 28 ka 2002) ngokuthola Amahlakhe kwinyaniso yananyaniso 35 yohlati **Modderfontein 236 IR**, ngaphakathi kwe Mantsi 'YeSondra saseDelmas, eMpumalanga.

ESIMO SONGIPHUMULA NOLWAZA LINDONO MANTSIANA HALL APPLICATION

Ngokufutshela kanye kanye izinto ngokufutshela Wezombini phansi kanye Necimbini nophethili (MPRDA) (Umthetho 28 ka 2002) kanye nenginyaniso ye-EA 2014, akhoke ngaphantsi kwesiziso sikaKhulu kweMantshi 236 IR, ngaphakathi kwe Mantsi 'YeSondra saseDelmas, eMpumalanga.

Ukuthi i-Hlubi Properties (Pty) Ltd ihlala isiziso selingelo lokuthola umhlaba ngokufutshela phansi kanye lesicelo esithile ngokufutshela (DMRE Ref: MP 30/5/1/2/17275 PR).

Njengenginyaniso ye-EA, ikakhulukazi ingubo yokubamba iqhaza kumphakathi kule projekthi akhokezwayo, Amanzambu Athintekayo namantshiseloko (APs) ayinyaniso akhokezwayo futhi alithethi ngonyaniso nomoya ukhokezwayo nomoya akhokezwayo kufuneka iyo ukhokezwayo eminyaniso iminyaniso yokufutshela eminyaniso ngonyaniso.

Umphakathi ubophe futhi umanyaniso ubhale ubhale futhi uqhakale ngokuthola izinto zokuthola okuzokuthola kanye ne-EMPs. Umhlaba ngokufutshela-EMPs uzokutholwa ukuthi ubophe kwezi thintekayo ezintathu ezi-30 zikhulama kuzibala nge-Sondo ngq-24 July 2022 kuya ku-Lwesibili ngq-23 August. Lo mhlabo uzokutholwa eDelmas Public Library (Car Sarel Cilliers & Van Riebeeck) kanye nekhosi eHambani uma izidlo ezivela kwi-Singo Consulting (Pty) Ltd kuzithethwa iminyaniso ngokubamba eminyaniso ngonyaniso.

Ukuthola eminyaniso iminyaniso nomoya akhokezwayo ngokufutshela Enantshiseloko sase Etwatwa, sizethu.

Singo Consulting (Pty) Ltd
Office No. 370, 5 Batafaka Street, Izobon Park Est. 2, eMakhehane (Witbank), 1040
Tel: +27 13 692 0041
Cell: +27 13 110 9956
Fax: +27 13 614 4103
Email: bo@singoconsulting.co.za
Email (Alt): admin@singoconsulting.co.za

HLUBI KOENA
Physical address: House No. 28, 3rd Street, Delmas, Mpumalanga, 2210
Contact person: Mr W L Mgwenya
Tel: +27 13 665 1341
Email: cobra.koena@gmail.com

ONS WINKEL
KOM SNUFFEL OF SKENK IN ONS WINKEL IN MAAK 'N VERSKIL IN DIE GEMEENSKAP
Spesiale aanbiedinge kan op ons Facebookblad gesien word. Gaan gerus na Ons Winkel Bronkhorstspuit Lanhamstraat 44, Bronkhorstspuit
WWW.ONSWINKEL.CO.ZA
NET VAN LOGGERENBERG 083 453 9829

Tutela
Tweedehandse Winkel
Kom snuffel rond in die winkel of skenk kiere, skoene en meer...
Maak 'n verskil in die gemeenskap
Hiv Sessa Street en Vierdelaan, Delmas
Weekdae 9:00 - 12:00 en 13:00 - 15:00
Vrydae van 9:00 tot 13:00
084 588 2316

MOST PRIVATE VACCINATION SITES
ASSIST REGISTERED NON-MEDICAL AID PATIENTS
0800 029 999

Partners: Caxton Local Media, Citizen, African Media Entertainment, Department of Health and Monitoring

Figure 8: Newspaper Advertisement (Streeknuus, 24 June 2022)

Draft Basic Assessment Report and Environmental Management Programme Report

Public Space Notices

Site notices were placed around the farm boundaries, adjacent community, the Victor Khanye Local Municipality and Delmas Public Library as another means of notifying any person/s who would be Interested & Affected by the proposed development. Refer to **photo 1** for proof of notice placement.



Draft Basic Assessment Report and Environmental Management Programme Report



Draft Basic Assessment Report and Environmental Management Programme Report

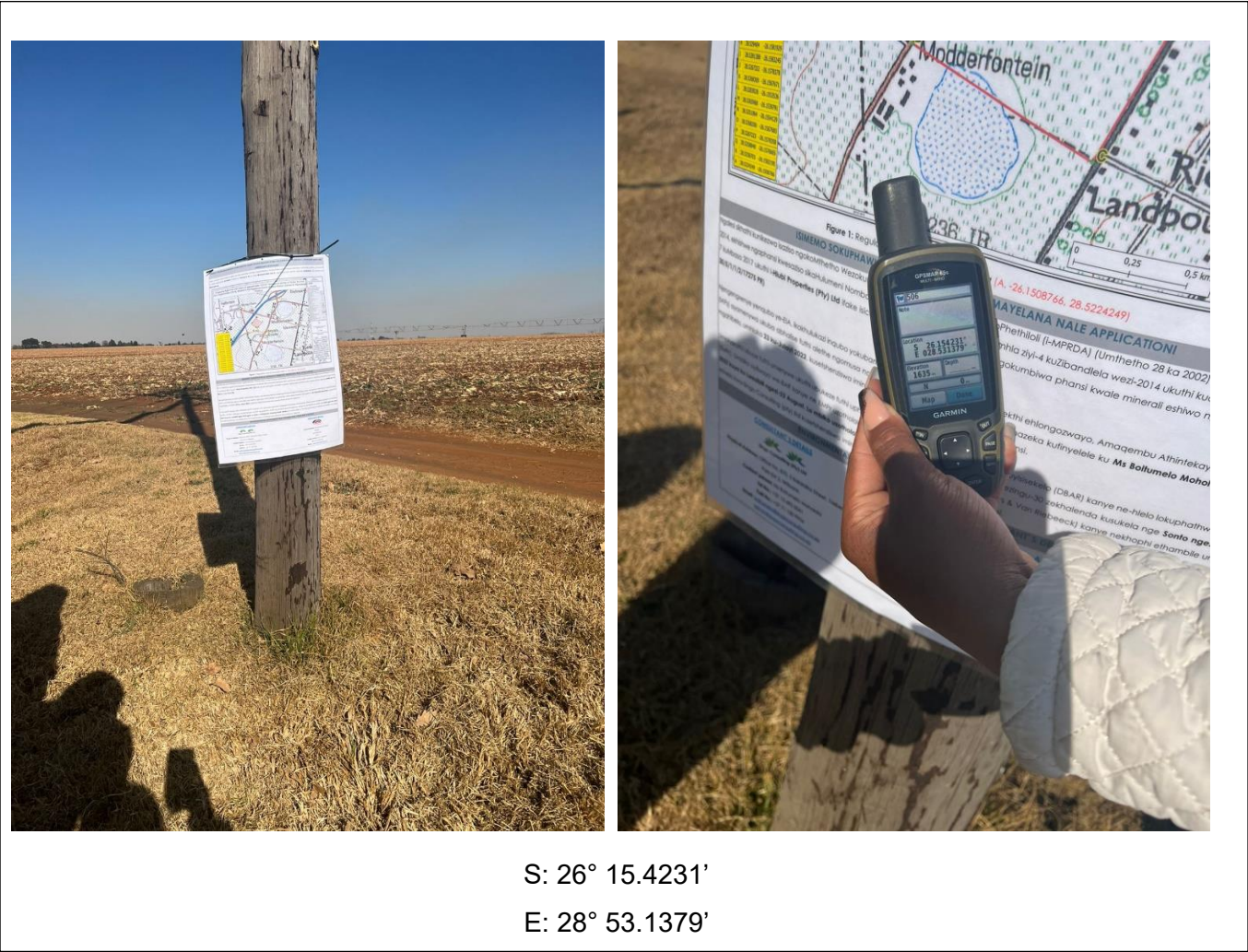


Photo 1: Site notice placement (Singo Consulting (Pty) Ltd, 2022)

Draft Basic Assessment Report and Environmental Management Programme Report

Table 7: Windeed Search Results

Deeds Office Property
IR, MODDERFONTEIN, 236, 35, MPUMALANGA

Lexis® WinDeed



This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

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.

**** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.**

SEARCH CRITERIA			
Search Date	2022/06/20 10:43	Farm Number	236
Reference	-	Registration Division	IR
Report Print Date	2022/06/20 10:44	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	Deeds Office

PROPERTY INFORMATION			
Property Type	FARM	Diagram Deed Number	T019832/953
Farm Name	MODDERFONTEIN	Local Authority	DELMAS/BOTLENG TLC
Farm Number	236	Province	MPUMALANGA
Registration Division	IR	Remaining Extent	YES
Portion Number	35 (REMAINING EXTENT)	Extent	117.4015H
Previous Description	PTN9-LG590/65	LPI Code	T0IR00000000023600035
Suburb / Town**	2KM NORTH OF RIETKOL	Co-ordinates (Lat/Long)**	-26.157561 / 28.527173

OWNER INFORMATION (1)			
NAMUTONI BOERDERY PTY LTD			Owner 1 of 1
Company Type**	COMPANY	Document	T7106/2005
Registration Number	200002361807	Microfilm / Scanned Date	-
Name	NAMUTONI BOERDERY PTY LTD	Purchase Price (R)	2 200 000
Multiple Owners**	NO	Purchase Date	2004/08/10
Multiple Properties**	NO	Registration Date	2005/01/19
Share (%)	-		

DISCLAIMER
This report contains information provided to LNRM by content providers and LNRM cannot control the accuracy of the data nor the timely accessibility. LNRM will not be held liable for any claims based on reliance of the search information provided. This report is subject to the terms and conditions of LexisNexis Risk Management Agreement. LexisNexis Risk Management (Pty) Ltd is a registered credit bureau (NCRCB26).



0861 946 333
windeed.support@lexisnexis.co.za
search.windeed.co.za | www.windeed.co.za

Namutoni Boerdery Pty) Ltd was identified as the landowner of portion of Portion 35 of the Farm Modderffontein 236 IR but when we got to site Daybreak was identified as lawful land occupiers, Daybreak was consulted via email.

Draft Basic Assessment Report (BAR) and Environmental Management Programme report (EMPr)

The Draft BAR and EMPr will be released for a period of 30 days from 24th July 2022 to 23rd August 2022.

Copies of the Draft BAR and EMPr will be submitted to organs of state and relevant authorities that have requested it i.e. Mpumalanga Tourism Parks Agency (MTPA), Department of Agriculture, Land Reform and Rural Development (DALRRD), South African National Roads Agency Ltd (SANRAL) & Department of Water and Sanitation (DWS). Additionally, copies will be placed at the Delmas Public Library & another copy submitted at the Victor Khanye Local Municipality. Electronic copies will be made available upon request from Singo Consulting (Pty) Ltd via email; Dropbox link; Google drive; WeTransfer, etc.

Consultation and Correspondence with I & Ap's and Stakeholders

All comments received from I&APs and organs of state and responses sent will be included in the final BAR and EMPr.

IDENTIFICATION OF I&AP'S

LIST OF AUTHORITIES IDENTIFIED AND I&AP'S

Names of I & AP's	Organisation	
	Day break	
	Day break	
	Eskom	
	Department of Agriculture, Land Reform & Rural Development	
	Department of Rural Development and Land Reform	
SANRAL	SANRAL	
	TRANSNET	
	Mpumalanga Tourism & Parks Agency (MTPA)	
	Victor Khanye Local Municipality- Air Quality	

	Nkangala District Municipality	
	Biodiversity Mainstreaming EIA: Department of Forestry, Fisheries and the Environment	
	Department of Water and Sanitation	


Summary of issues raised by I&APs

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




Table 8: Summary of issues raised


Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
<u>AFFECTED PARTIES</u>				
Landowner/s				
Namutoni Boerdery (Pty) Ltd	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged
Lawful occupier/s of the land				

Daybreak Farm	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
Landowners or lawful occupiers on adjacent properties					
Afgri	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
Municipality					
 <p>Victor Khanye Local Municipality</p> <p>Victor Khanye Local Municipality</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	

 <p>NKANGALA DISTRICT MUNICIPALITY</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
<p>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS</p>					
 <p>SANRAL SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD Reg. No. 1999/00954/30</p> <p>SANRAL System</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	

 <p>Mpumalanga Region</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
Communities					
Sundra	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • One on one consultation 	
Tiki line	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • One on one consultation 	

Rietkol AH	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • One on one consultation 	
Dept. Land Affairs					
 <p>COMMISSION ON RESTITUTION OF LAND RIGHTS Department of Rural Development and Land Reform</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
Dept. Environmental Affairs					
 <p>forestry, fisheries and the environment Department: Forestry, Fisheries and the Environment REPUBLIC OF SOUTH AFRICA</p>	X		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
Other Competent Authorities affected					
 <p>MPUMALANGA PROVINCIAL GOVERNMENT</p>					

 <p>Mpumalanga TOURISM AND PARKS AGENCY</p>	x		No Issues raised Yet	<ul style="list-style-type: none"> • Newspaper published • Site notices plugged • Email sent 	
<u>OTHER AFFECTED PARTIES</u>					
<u>INTERESTED PARTIES</u>					

NB: Due to POPI Act, no personal information can be shared.

9 THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

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

9.1 BASELINE ENVIRONMENT

Socio Economic Context

The proposed Prospecting Project is located within the Magisterial District of Delmas under the jurisdiction of the Victor Khanye Local Municipality, situated within the Nkangala District Municipality. See **Figure 9** for ease of reference.

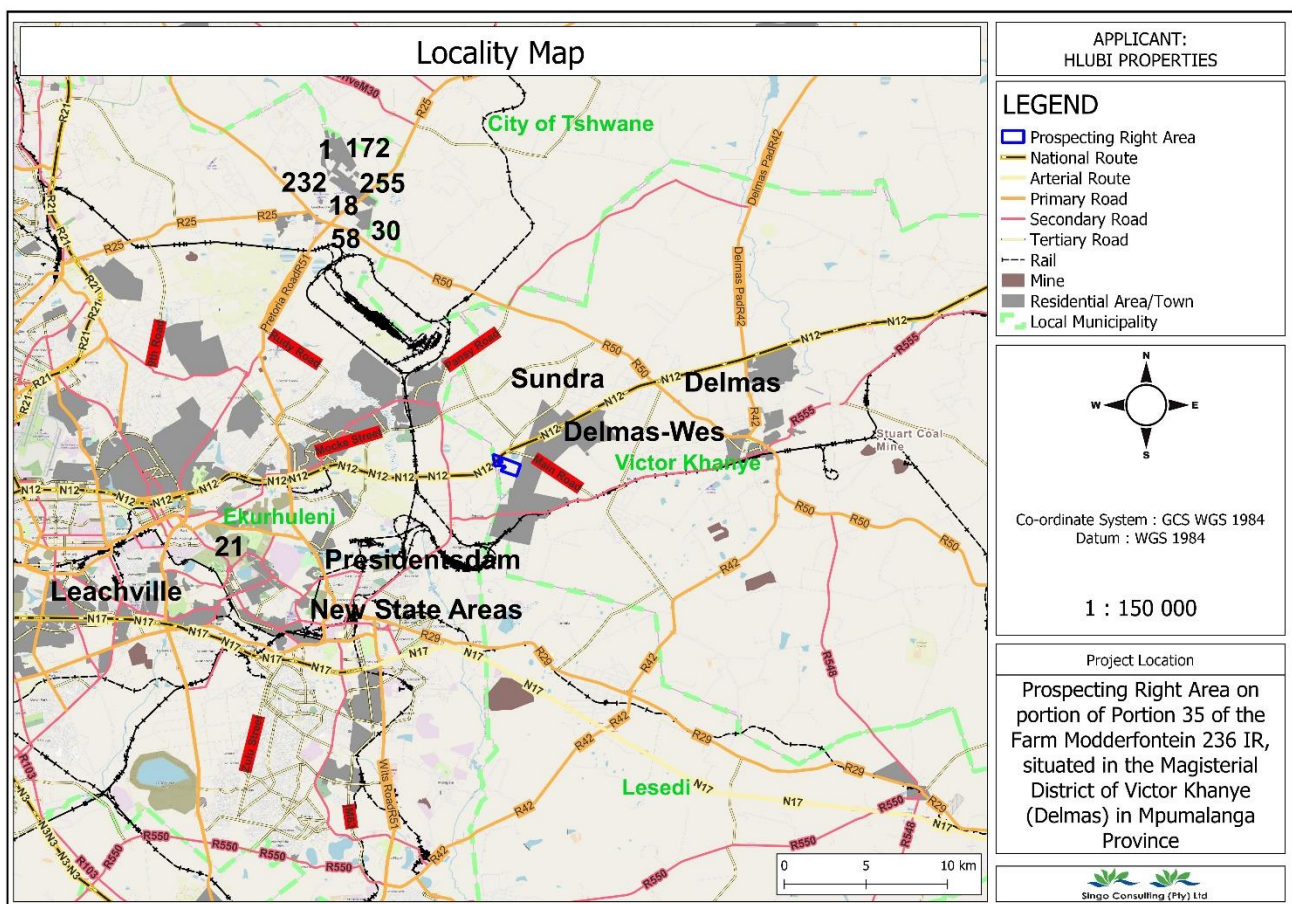


Figure 9: Project location (Singo Consulting (Pty) Ltd, 2022)

Reference to the following section has been made from (2021/2022) Final Integrated Development Plan of Victor Khanye Local Municipality.

Municipal Administration Units and Wards

The Victor Khanye Local Municipality comprises of 9 Wards and a total population of approximately 84 151 (CS 2016). The municipality has an area of approximately 1 568 km² and includes the following major un-established urban areas or towns:

Table 9: Main places within the municipal area (2011/2016 Census)

No.	Places	Population size
1.	Delmas	3 496
2.	Botleng	30 793
3.	Sundra	3 252
4.	Eloff	1 391
5.	Remainder of the Municipality	17 275

Demographic Profile and Density

The below table provides data of the indicator according to Stats SA (2011 Census and 2016 Community Survey - CS).

Table 10: Municipal population size and growth trend (Victor Khanye LM encircled in red)

Local municipal area	Population		Average annual population growth	Projected 2030 numbers
	2011 (Census)	2016 (CS)	2011-2016	
Mbombela	588794	622158	1.3%	745 475
Bushbuckridge	541248	548760	0.3%	572 263
Emalaheni	395466	455228	3.2%	707 530
Nkomazi	393030	410907	1.0%	472 327
Govan Mbeki	294538	340091	3.3%	535 796
Thembisile Hani	310458	333331	1.6%	416 282
Steve Tshwete	229831	278749	4.4%	509 355
Dr JS Moroka	249705	246016	-0.3%	235 882
Mkhondo	171982	189036	2.1%	252 874
Chief Albert Luthuli	186010	187630	0.2%	192 952
Msukaligwa	149377	164608	2.2%	223 236
Lekwa	115662	123419	1.5%	152 022
Thaba Chweu	98 387	101895	0.8%	113 920
Dr Pixley Ka Isaka Seme	83235	85395	0.6%	92 855
Victor Khanye	75 452	84 151	2.5%	118 903
Umjindi	67 156	71 211	1.3%	85 326
Emakhazeni	47 216	48 149	0.4%	50 917
Dipaleseng	42 390	45 232	1.5%	55 715
Mpumalanga	4 039939	4 335964	1.6%	5 533629

Source: DEDT

Population & Household Growth

The Municipality had a population of 75 452 in 2011. This figure sprung to 84 151 at an average growth rate of 2.5% per annum. It is predicted that the by 2030 population growth is estimated to stand at 118 903 given the historic population growth per annum, indicative of the migration of labour attracted to the area as a result of the potential for economic growth and resultant job opportunity. The municipality has the 3rd smallest population in Mpumalanga province and 5.8% of total population of Nkangala District Municipality.

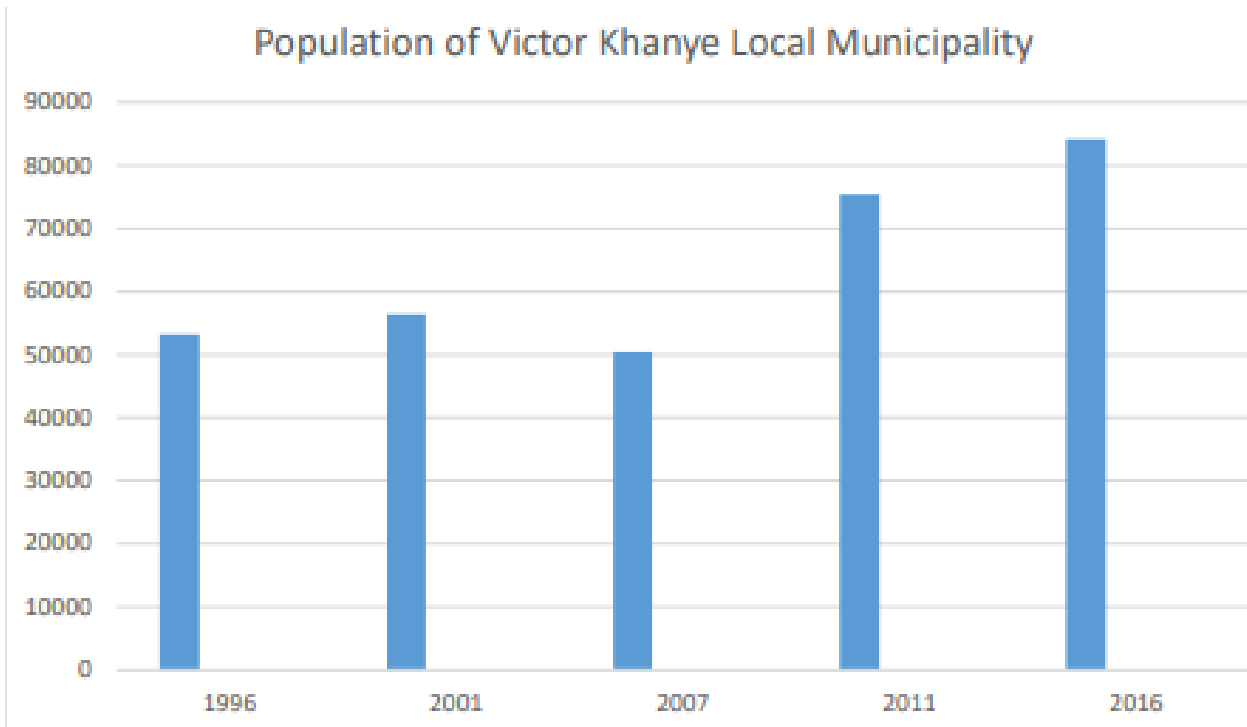


Figure 10: Population from 1996 to 2016

Education indicators

Victor Khanye grade 12 pass rate decreased from 26.7% in 2011 to 26.0% in 2016. In addition, the percentage of people aged 20+ within the municipal area decreased from 11.8% in 2011 to 10.7% in 2016. Furthermore, there was yet a decrease of people who received higher education. Higher education was recorded at 7.7% in 2011 and 5.4% in 2016. The overall educational performance of the municipal area has decreased.

Highest Educational Level (All Ages)

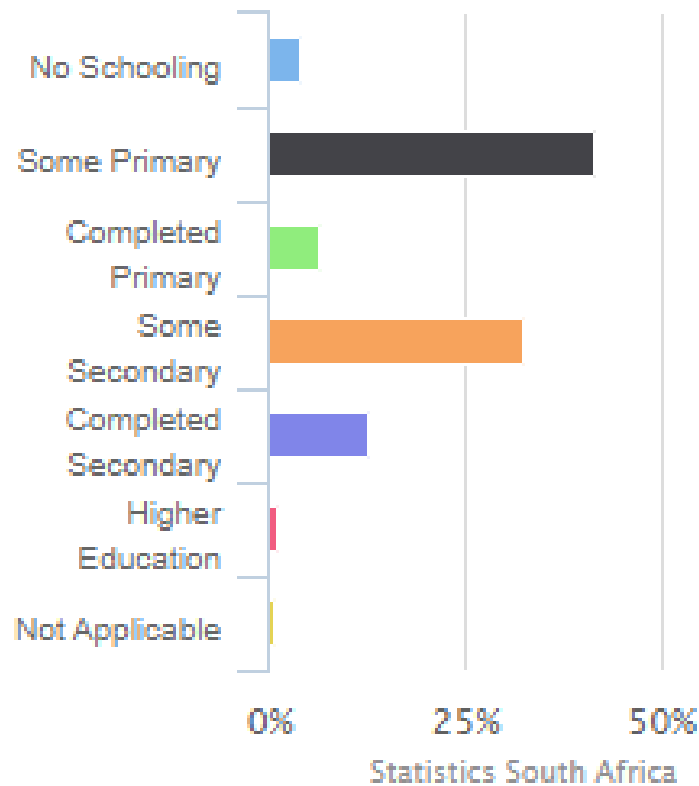


Figure 11: highest educational level for all ages (Source: Stats SA)

Matriculates wrote the year-end exam, which reflects an upward trend and attributed to Victor Khanye Local Municipality being ranked in 5th place in the province. However, this improved pass rate was not reflected in the university admission rate with only 26, 2% of scholars seeking to further their education status. When these statistics are compared with the unemployment statistics the assumption can be made that a high percentage of job seekers do not have the minimum education entry level.

Unfortunately, these job seekers will be restricted to unskilled manual work where the main employer in this sector of employment, namely Agriculture, is receding as a leading employer. This poses a huge problem within the communities as the dependency syndrome increases and criminal activities increase.

Unemployment and Employment

Unemployment level has been reduced from 28.2 to 21.6 in terms of Global insight figures this reduction is as a result of an increase in investments in our local economy. The employment situation is expected to improve over the medium term with additional jobs expected in the mining sector. The latest statistic reflects that the employment level in the Victor Khanye Local Municipality is currently at 28, 9%. Based on the 2016 definition of Economically Active Population (EAP) of 30,415 the unemployment rate is reflected at 21.6, this represents an overall gain in employment compared to 2011.

This figure is high when we consider the economic activity in the area, but obviously impacted by the migration influx of job seekers. Leading industries in employment comprise of Trade (18, 7%), Agriculture (18, 2%) and Community Services contributing (14, 3%). However, the former two sectors are experiencing a decline in employment in the last few years whilst Community Services has increased and Mining as an employer has grown and now contributes 12, 7%.

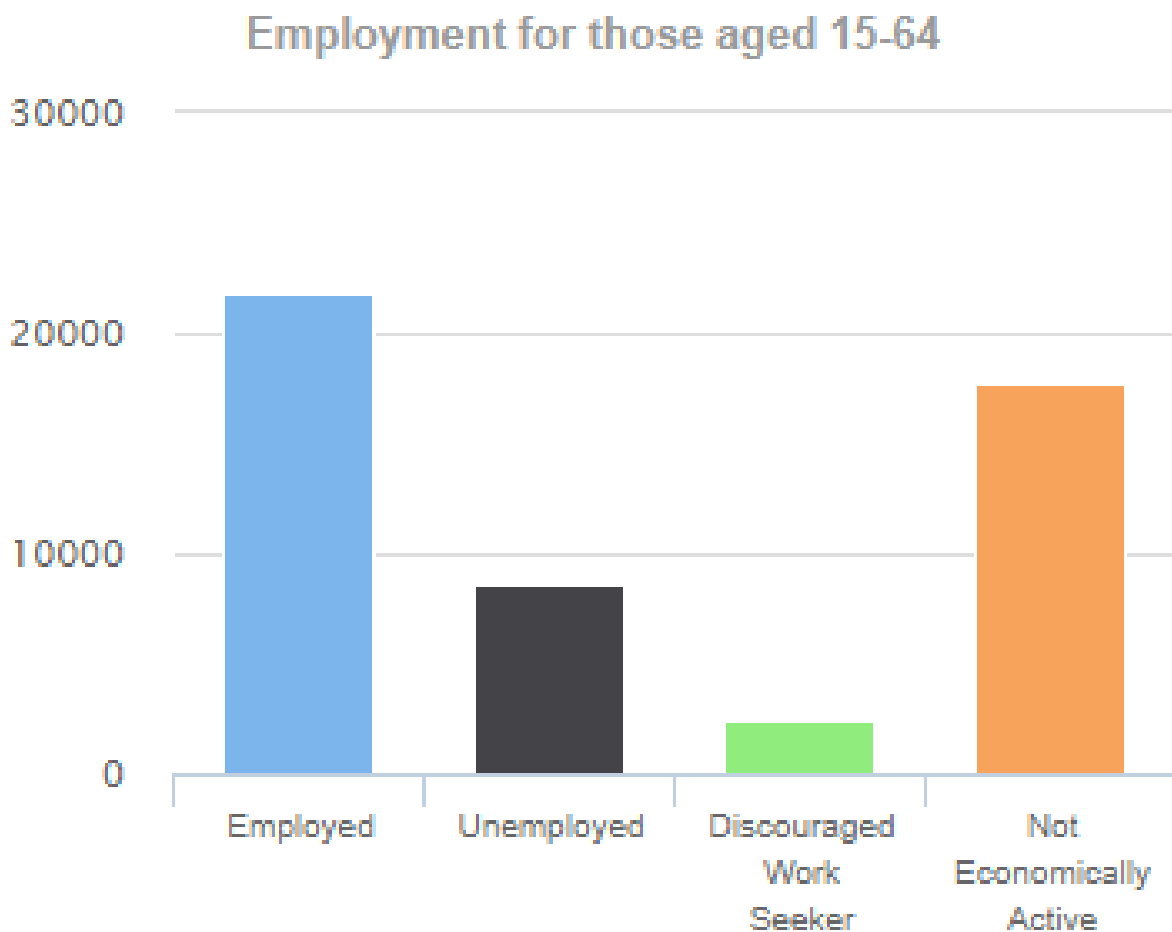


Figure 12: Employment of municipal area (Source: Stats SA)

Leading challenges facing the Municipality

According to the 2016 CS (Community Survey) of Stats SA, the 5 leading challenges facing the municipality as perceived by households in the municipal area the following:

- Lack of safe and reliable water supply.
- Lack of/inadequate employment opportunities (correlate with poverty driver information of the CS).
- Inadequate roads.
- Water and sanitation services.
- Inadequate/lack of housing.

Conclusively

The municipality has been under strain as a result of the influx of job seekers and high unemployment rate, and it faces challenges in accommodating the area's potential educated young people due to a lack of economic opportunities. COVID-19 had a negative impact as well, as it caused many people to lose their jobs, significantly contributing to the unemployment rate. Although no local job opportunities are expected during the prospecting phase, confirmation of a viable mineral resource and the potential establishment of a mine may help address the challenges currently facing the communities most affected by the proposed project.

GEOLOGY

Karoo Supergroup

The proposed project area follows under the main Karoo supergroup, under Eccca group. The sedimentary part of the Karoo Supergroup is subdivided into four main lithostratigraphic units, which from the base up are the Dwyka, Eccca, Beaufort and Stormberg (Molteno, Elliot and Clarens formations) groups (Johnson et al., 1996; SACS, 1980;). These are capped by some 1.4 8 km of basaltic lavas of the Drakensberg Group (Johnson et al., 1996; Veevers et al., 1994), the extrusion of which is related to the break-up of Gondwana (Cox, 1992). The basement to the Karoo Supergroup fill in both the MKB and in the northern basins is heterogeneous (Bordy et al., 2004a; Hancox, 1998; Rutherford, 2009) and this heterogeneity plays a significant control on the nature of the fill, particularly during the early phases of the deposition of the Karoo Supergroup.

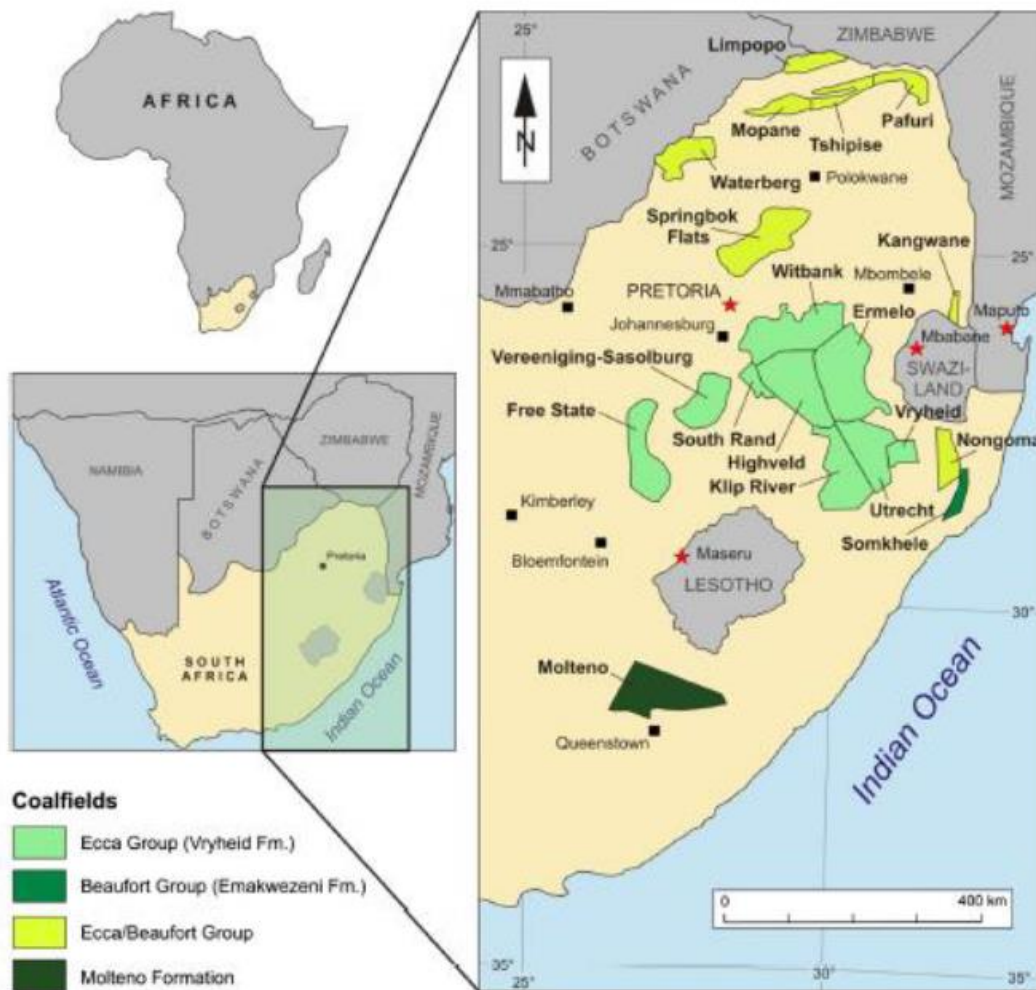


Figure 13: Coal field of South Africa (adopted from Hancox and Gotz, 2014).

Dwyka Group

The rocks of the Dwyka Group in South Africa are amongst the most important glaciogenic deposits from Gondwana. This Group is named for exposures along the Dwyka River east of Laingsburg and forms the basal succession of the Karoo Supergroup. Dwyka Group strata are mostly contained within bedrock valleys incised into Archean to lower Palaeozoic bedrock (Visser, 1990; Visser and Kingsley, 1982; Von Brunn, 1996). The lithologies in the areas underlying the coalfields of South Africa consist of a heterolithic arrangement of massive and stratified polymictic diamictites, conglomerates, sandstones and drop stone-bearing varved mudstones. The easily identifiable lithologies form a good marker below the coal bearing Eccca Group. In the distal sector of the MKB these sedimentary strata accumulated largely as ground moraine associated with continental ice sheets and is generally composed of basal lodgement and supraglacial tills. These deposits are generally massive, but crude horizontal bedding occurs in places towards the top (Tankard et al., 1982).

Ecca Group

In the 1970s a number of studies (Cadle, 1974; Hobday, 1973, 1978; Mathew, 1974; Van Vuuren and Cole, 1979) showed that the Ecca Group could be subdivided into several informal units based on the cyclic nature of the sedimentary fills. In 1980 the South African Committee for Stratigraphy (SACS, 1980) introduced a formal lithostratigraphic nomenclature for the Ecca Group in the northern, distal sector of the MKB, which replaced the previously used informal Lower, Middle and Upper subdivisions with the Pietermaritzburg Shale Formation, the Vryheid Formation and the Volksrust Shale Formation.

Witbank Coalfield

The Witbank Coalfield is elongated over 180 km in a west to east direction, it is not surprising that the basement to the Karoo Supergroup succession is varied. From west to east the basement rocks include metasedimentary, metavolcanic and dolomitic rocks of the Neoproterozoic Transvaal Supergroup, metasedimentary and metavolcanic rocks of the Palaeoproterozoic Waterberg Group and BIC age intrusives (felsites and granites) (Fig. 10).

The changing nature of the basement plays a major role in the nature of the palaeotopography created. For example, in the far east of the Witbank Coalfield, where dolomites of the Transvaal Supergroup form the basement, abnormally thick coals filling karst

topography is known. A similar but more extreme case is documented at the Syferfontein Colliery in the West Rand outlier (Stuart-Williams,1986). In some areas close to the north-western basin margin, the stratigraphic column is reduced to only 80 m. It was also the focus of much

of the academic research, including the works of Cairncross (1979) in the Van Dykes Drift area, Le Blanc Smith and Eriksson (1979) to the west of Witbank, and Holland et al. (1989) to the east of Witbank. Cadle and Cairncross (1993) described a sandy bedload dominated system with lateral accretion surfaces from the southern part of the central sector. More recently it has been covered in the regional geological model of Grodner (2002) and Grodner and Cairncross (2006) and various Competent Persons' Reports available on various companies' websites (Goldschmidt et al., 2010a).

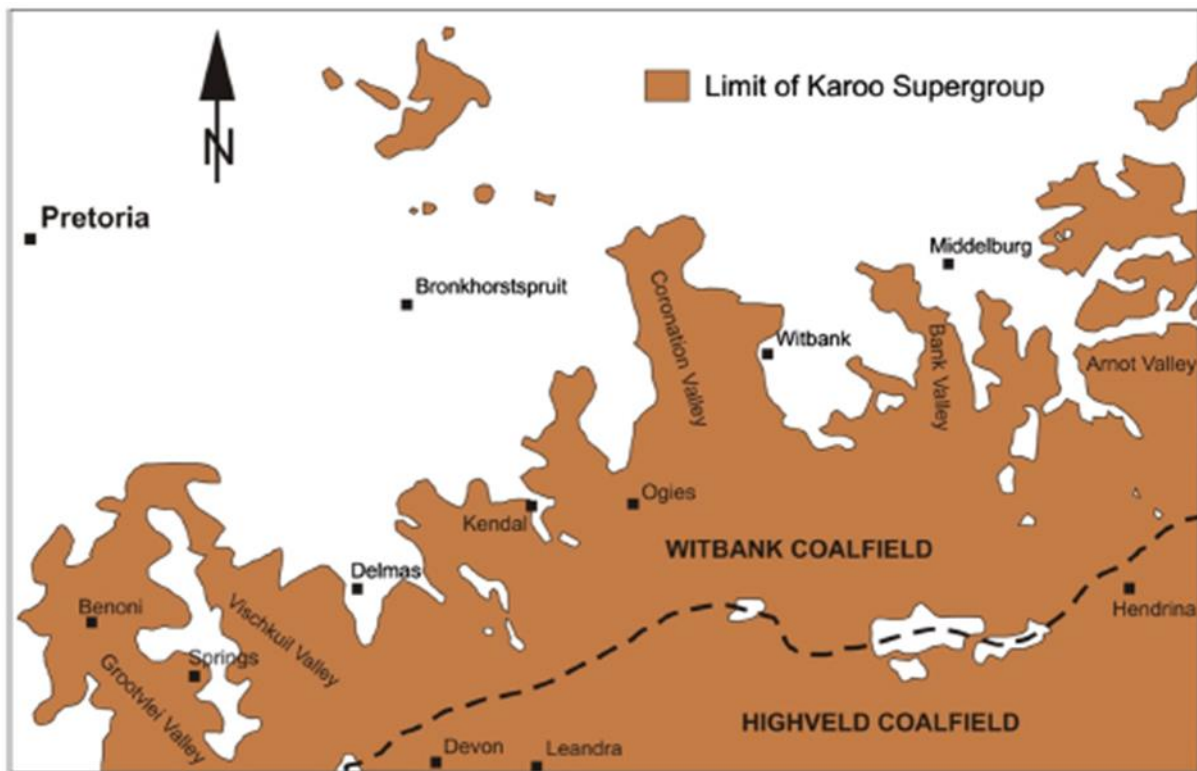


Figure 14: Geographic extent of Witbank Coalfield

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.

The No. 2 Seam Sequence (Figure 4) includes the succession from the top of the basement to the top of the No. 2 Seam, which may be up to a maximum development of 60 m in places (Le Blanc Smith, 1980a). It incorporates the rocks of the Dwyka Group, as well as the overlying No. 1 and No. 2 coal seams. It should be noted that we accept that the Dwyka has separate Group status, but that it is described as the basal part of the No. 2 Seam Sequence. The thickness of the Dwyka Group in the Witbank Coalfield also varies considerably dependant on the nature of the underlying topography. It ranges from being thin or absent over the most prominent pre-Karoo topographic highs, to over 25 m thick in the central part of the Witbank Coalfield (Le Blanc Smith and Eriksson, 1979) to 30 m thick (Glasspool, 2003) in the deeper palaeo valleys. Le Blanc Smith and Eriksson (1979) note that the fill consists of poorly sorted matrix rich diamictites, laminated sandstones and siltstones, stratified pebbly mudstones and cross-stratified conglomerates.

In the western Witbank Coalfield, the No. 2 Seam Sequence tends to be much more variable in nature than it is in the central part. This is mainly due to the irregular nature of the Transvaal Supergroup (Malmani Group) dolomite floor. The Dwyka Group outcrops in the area around Delmas and is also well known from borehole core, which show the succession to be between 0 and 10 m in thickness. The base of the No. 2 Seam Sequence is usually formed by poorly sorted matrix rich diamictites, with angular to rounded basement clasts, set in a matrix of fine- to medium-grained sandstone, which may be highly carbonaceous in places. Maximum clasts sizes documented by the authors are in the region of 30 cm. According to Le Blanc Smith (1980a) the Dwyka Group diamictites may in turn be overlain by a succession up to 36 m thick of mudstone and siltstone, which grades upwards to sandstone and conglomerate that form the floor of the No. 1 Seam or its carbonaceous mudstone equivalent.

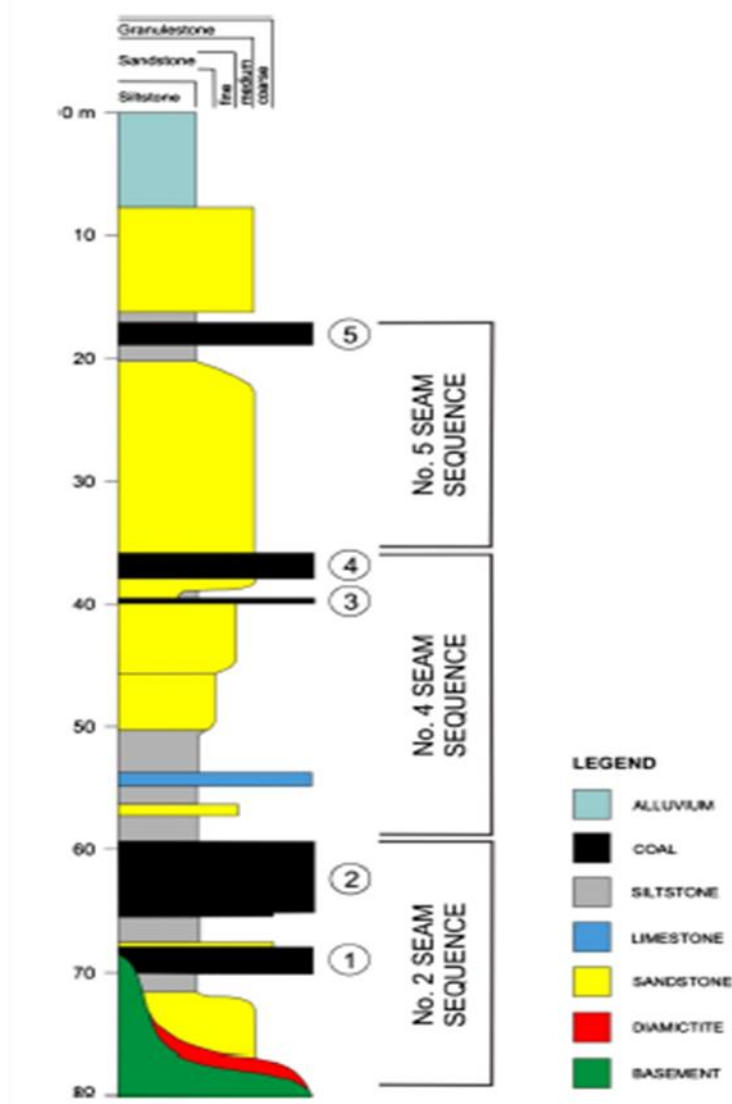


Figure 15: The stratigraphy of the Witbank coal field under Vryheid formation.

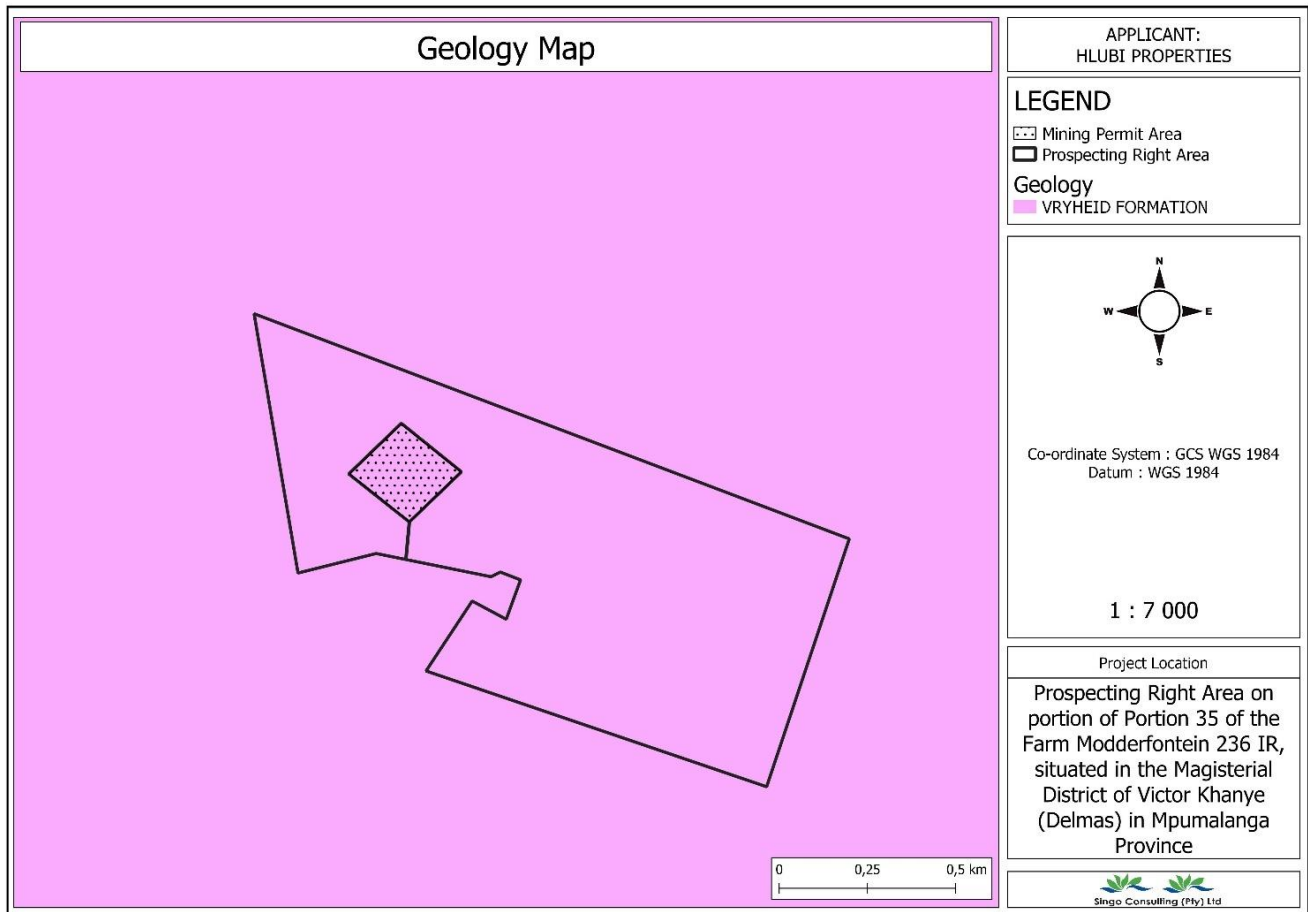


Figure 16: Geology of the application area (Singo Consulting (Pty) Ltd, 2022)

SOILS

From a basic study that was conducted in house, a map in **Figure 17** was produced. This map shows that majority of the prospecting right area is covered with red or yellow structureless soils with a plinthic horizon while a small fraction is covered with freely drained structureless soils.

Freely drained, structureless soils

The soil classes in the proposed area can be described 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.

Red apedal soils

These soils have a structure that is weaker than moderate blocky or prismatic in the moist state, if structure is borderline, CEC (NH₄OAc, pH7) per kg soil is less than 11cmol (+)/kg soil. These soils are non-calcareous in any part of the horizon which occurs within 1500mm of the soil surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. It does not have alluvial or aeolian stratifications.

The B horizons that have uniform colours, falling within the range defined as red and that in the moist state, lack well-formed peds other than porous micro-aggregates, qualify as red apedal. The concept of these macroscopically weakly structured or structureless materials embraces that kind of weathering that takes place in a well-drained oxidizing environment to produce coatings of iron oxides on individual soil particles (hence the diagnostic red colours) and clay minerals dominated by non-swelling 1:1 type.

Yellow apedal soil

This horizon does not have grey colours in the dry state as defined for the E horizon. Although colour must be substantially uniform, some variability is permitted, for example mottles or concretions which are insufficient to qualify the horizon as a diagnostic plinthic B, faunal reworking may also result in acceptable colour variegations. It is non-calcareous within any part of the horizon which occurs within 1500mm of the surface but may contain infrequent,

discrete, relict lime nodules in a non-calcareous soil matrix. Does not have alluvial or aeolian stratifications., directly underlies a diagnostic topsoil horizon or an E horizon. Yellow- brown apedal B horizons occur over approximately the same climatic spread as their red counterparts and so are also very widely distributed throughout the country. They may be found on all types of parent material.

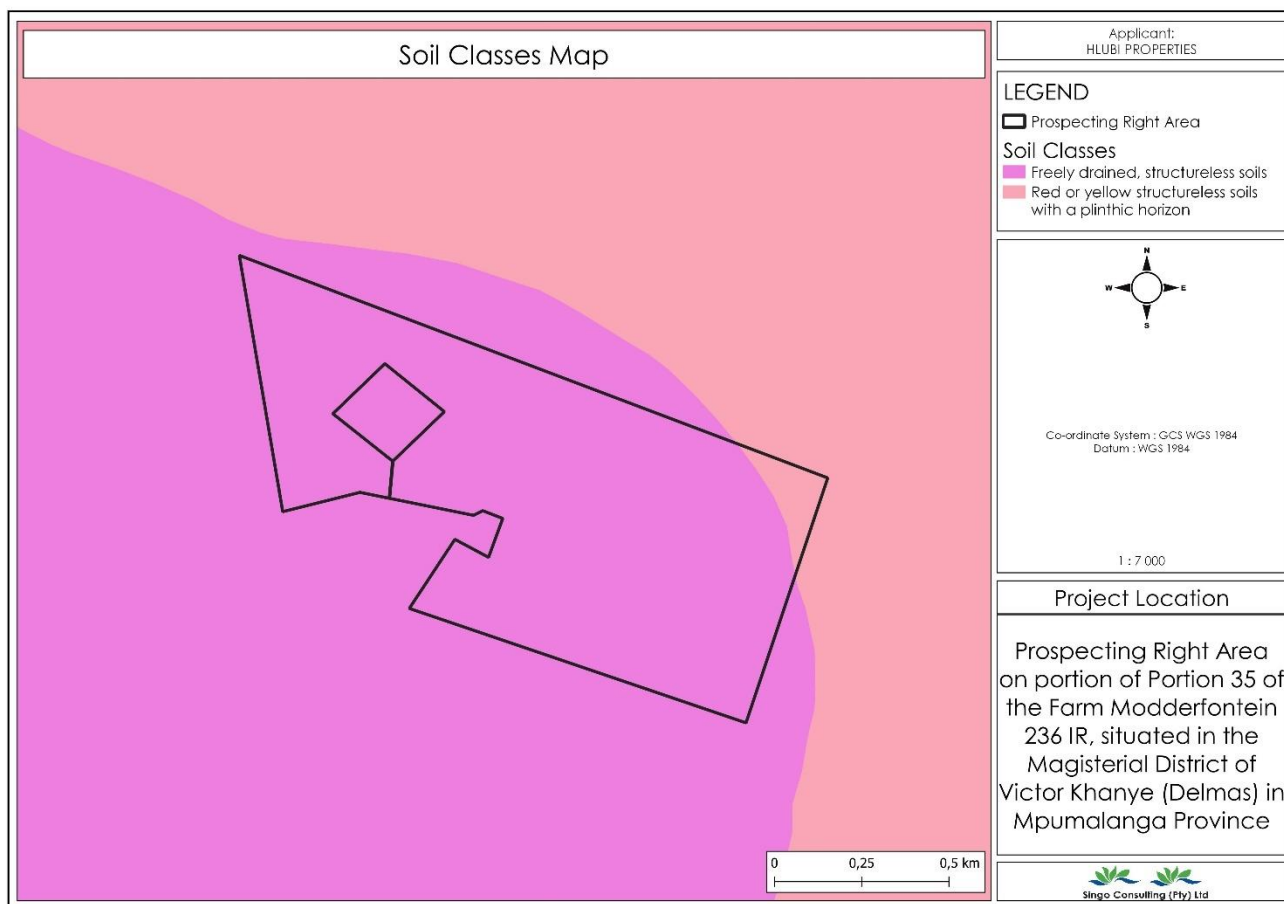


Figure 17: Soil classes map within the study area (Singo Consulting (Pty) Ltd, 2022)

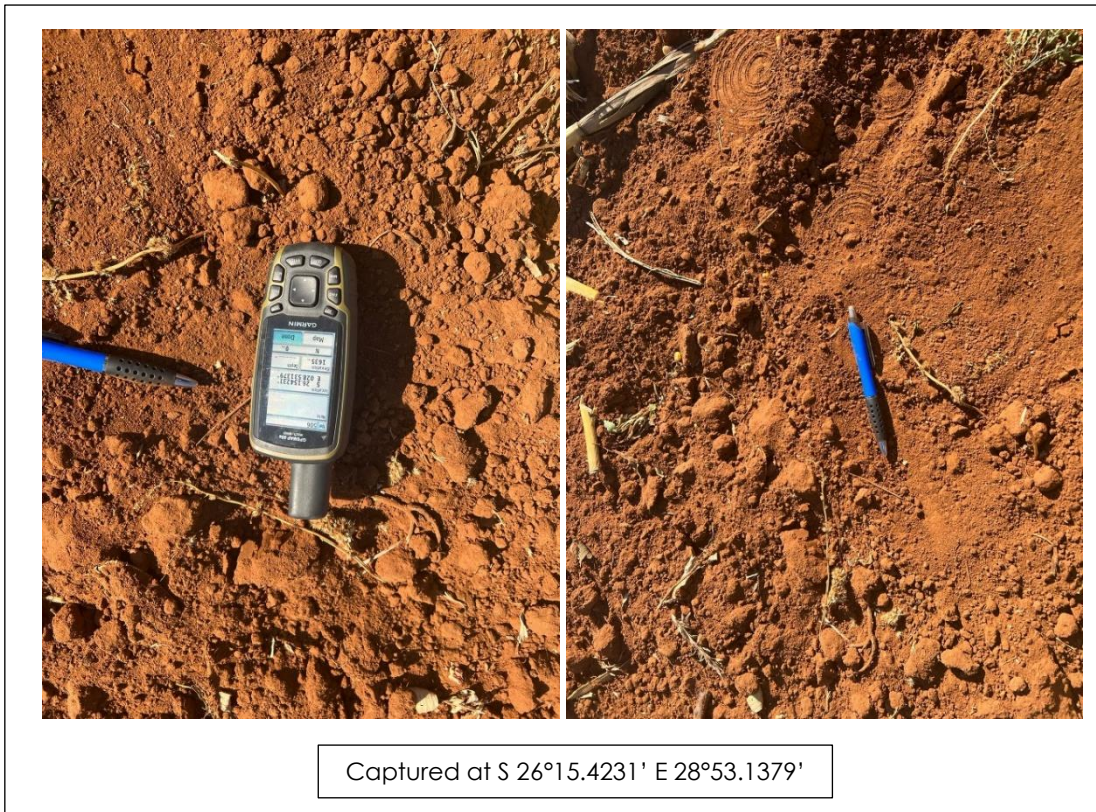


Photo 2: Pictorial depiction of soil type captured (Singo Consulting (Pty) Ltd, 2022)

Recommendations

- It is anticipated that the coal prospecting activities will not lead to severe loss of soils and degradation of agricultural potential.
- The exploration geologist will be advised to drill and sample away from the waterbody on site.
- The prospecting boreholes must be cased after drilling and properly rehabilitated by cap sealing the borehole after drilling. The core of coal on the drilled boreholes, should be cleared from the ground immediately after logging by a geologist, to prevent washing and leaching on the water resources during precipitation events.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.

LAND CAPABILITY

According to the map produced by the GIS technician (see **Figure 18**), the land capability of the area as seen on the following page is said to be arable. The site assessment conducted correlates to the current land use on site. The application area is used for crop farming and poultry farming (see **Photo 3** below).



Figure 18: Land capability map (Singo Consulting (Pty) Ltd, 2022)



Photo 3: Crop and poultry farming (Singo Consulting (Pty) Ltd, 2022)

CLIMATE

The climate is warm and temperate in Delmas with good deal of summer rainfall. The climate is classified as Cwb by the koppen-Geiger system. The warmest month of the year according to **Figure 19** below which depicts the yearly temperature in the time period of June 2021 to June 2022 is November whilst July is the coldest month.

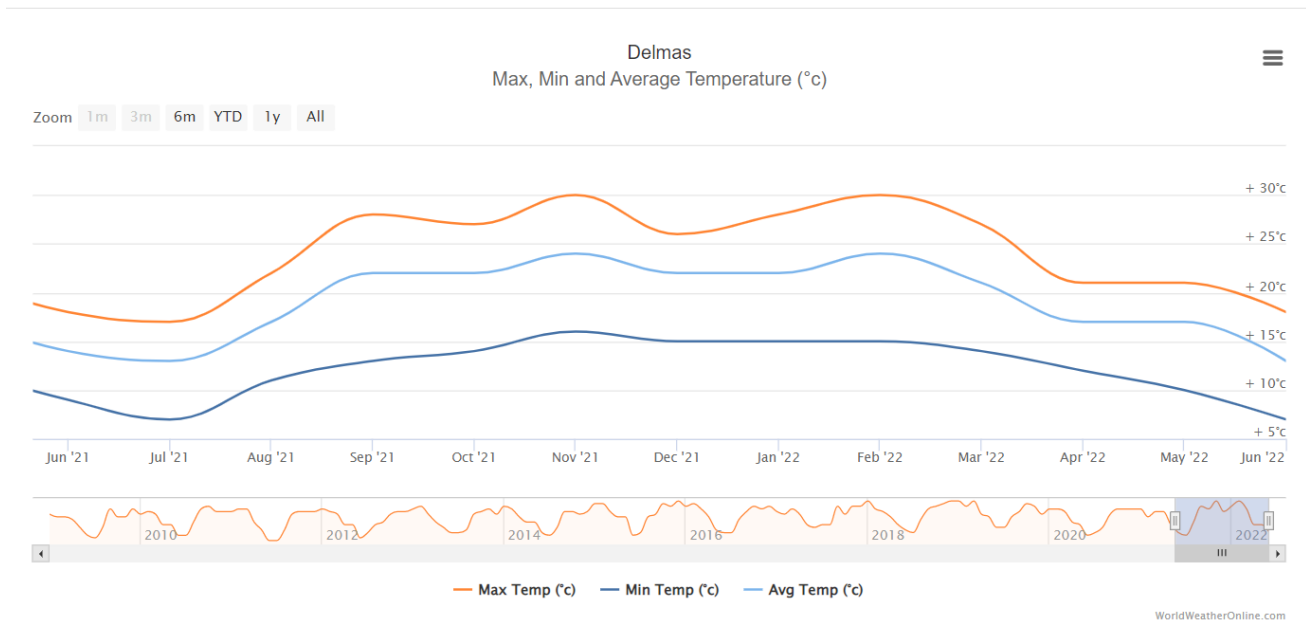


Figure 19: Average temperature graph for Delmas (Source: www.worldweatheronline.com)

Rainfall

The proposed project area receives mean annual rainfall of 601mm to 800mm. The driest month is July, which receives an average of 1.7mm precipitation, and the wettest month is January, which receives the most precipitation, averaging 194.4 mm. The mean annual rainfall for the project is shown in **Figure 20** below.

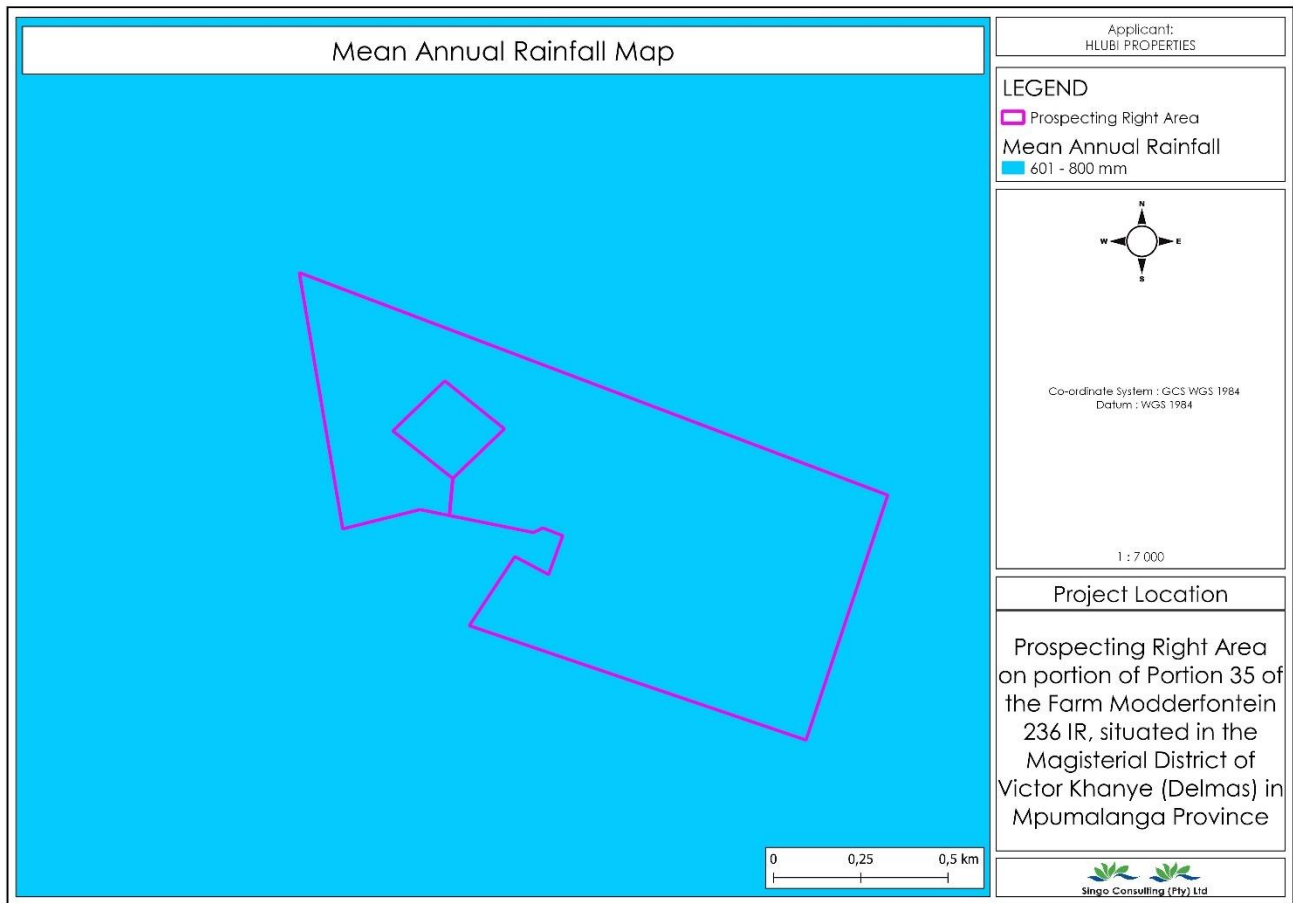


Figure 20: Mean annual rainfall for the project area (Singo Consulting (Pty) Ltd, 2022)

TOPOGRAPHY

The Highveld is the portion of the South African inland plateau which has the highest altitude of 2100 m on its north eastern boundary at the Mpumalanga Drakensburg. It is home to some of the country's most important commercial farming areas, as well as its largest concentration of metropolitan centres, especially the Gauteng conurbation, which accommodates one-third of South Africa's population (<https://southafrica.co.za/highveld>).

According to the topology map below, the project area is situated between an elevation of 1610 – 1630 mamsl. As shown on Figure 21, the elevation descends towards the western direction on a flat slope and has an elevation of 1620 m above sea level.

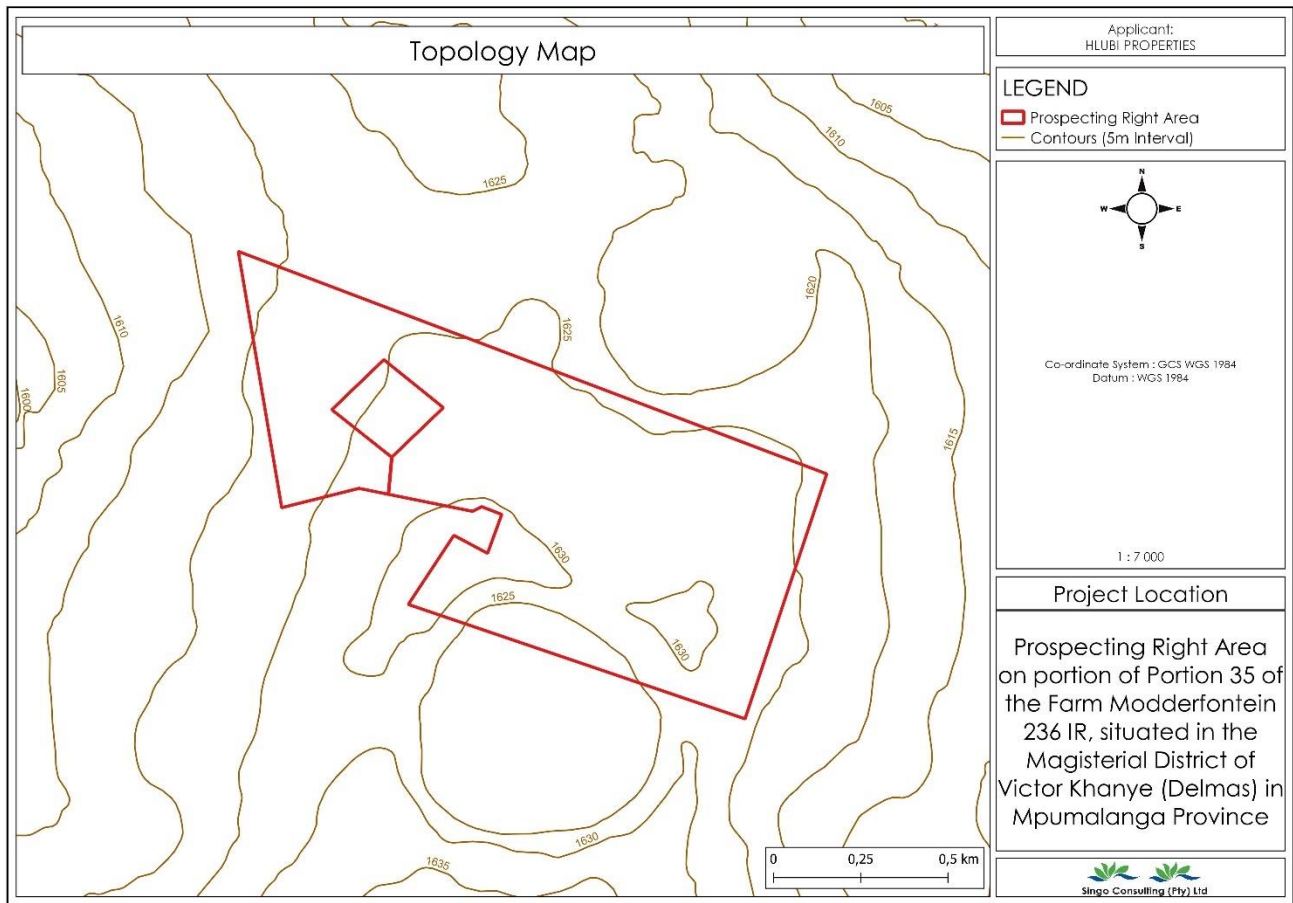


Figure 21: Topology of the application area (Singo Consulting (Pty) Ltd, 2022)

SURFACE WATER

The regional hydrological setting of the project site is indicated in **Figure 22**. The project area is in the Olifants and Vaal Water Management Area (WMA). The project area falls within the B20B which is in the Upper Olifants Sub- Catchment and C21D quaternary catchment falls within the Upper Vaal. C21D has a mean annual rainfall of 697.98 mm.

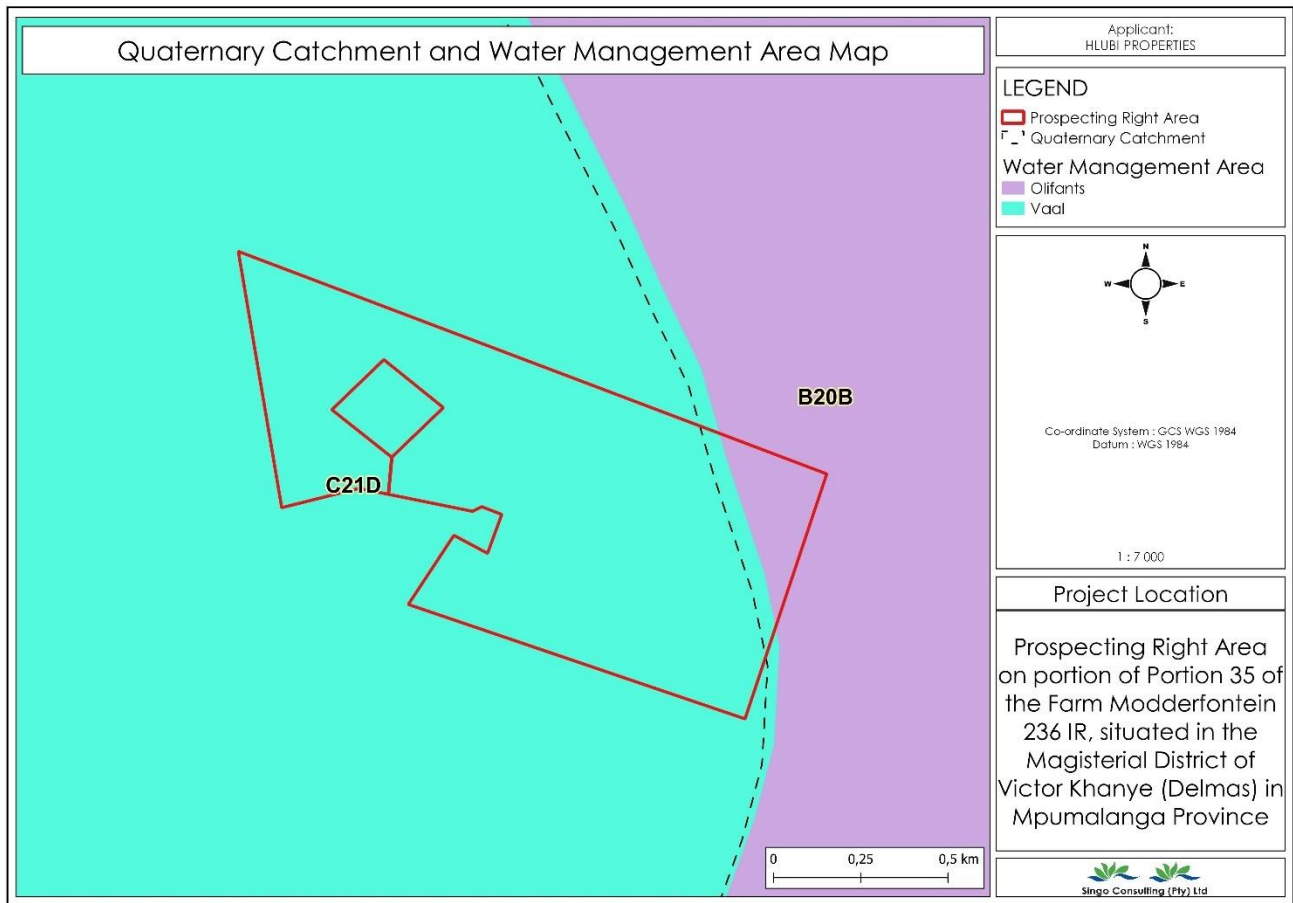


Figure 22: Quaternary catchment map. (Singo Consulting (Pty) Ltd, 2022)

The hydrology surrounding the proposed area is of vital importance. In this context hydrology is all the surface waters appearing within and nearby the proposed project area, where a potential to be impacted upon by the project exist. Site visit is the most significant part of the investigation. A site survey was conducted as part of environmental assessment, to confirm the water bodies observed on the hydrological map and to take pictures of the current environmental condition before the commencement of the proposed prospecting. The hydrology map, illustrates that the following water bodies exists within and nearby the project area:

- ✚ Unchanneled Valley Bottom Wetland
- ✚ Seep Wetland
- ✚ Depression Wetland

These are important natural water resources that should not be disturbed by anthropogenic activities. For this project where prospecting right poses a risk on them, measures and

guidelines will be put in place that will protect the water resources in this area to ensure optimal conservation of water. The wetland and the buffered area will be categorized as a no-go zone and prospecting will only occur on open land. In addition, prospecting will occur during dry seasons where the water percentages are low in the water bodies and the exploration geologists will be advised to drill and sample away from wetlands on site.

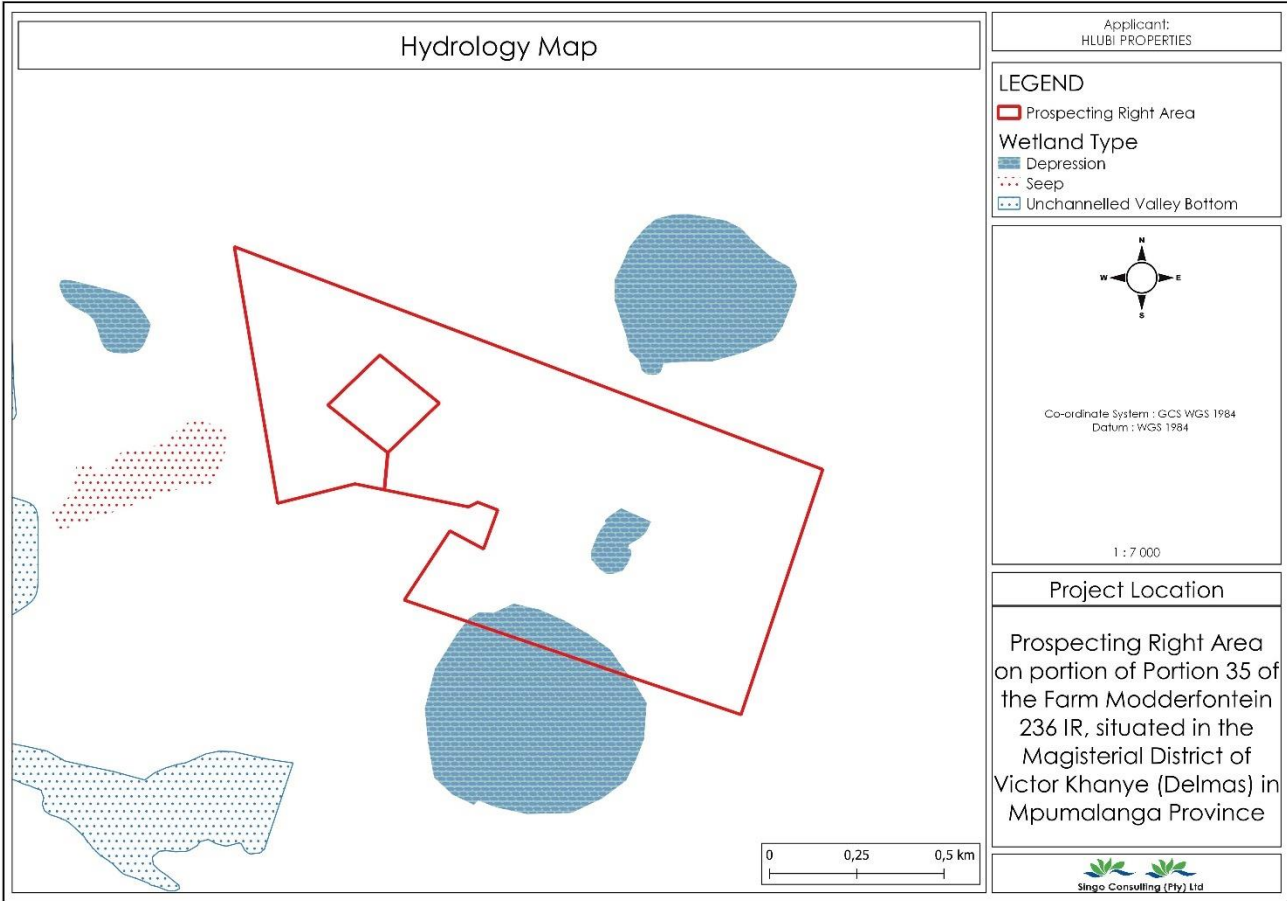


Figure 23: Hydrology map (Singo Consulting (Pty) Ltd, 2022)



S: 26° 16.0669'

E: 28° 53.052'

Photo 4: Watercourse observed on site (Singo Consulting (Pty) Ltd, 2022)

Drilling and sitting of boreholes.

The exploration boreholes will be drilled one at a time at various locations within the proposed project area. The depths of the drill holes will average to 100 m and will be confirmed onsite whilst the drilling programme is underway as influenced by the depths and dips measured in other holes. A buffer of 100m will be kept from identified wetlands and rivers subject to Regulation 48 (2) of MPRDA, NWA (1998), NEMA (1998) (2000) and Regulation 17 of Mine Health & Safety Act (1996).

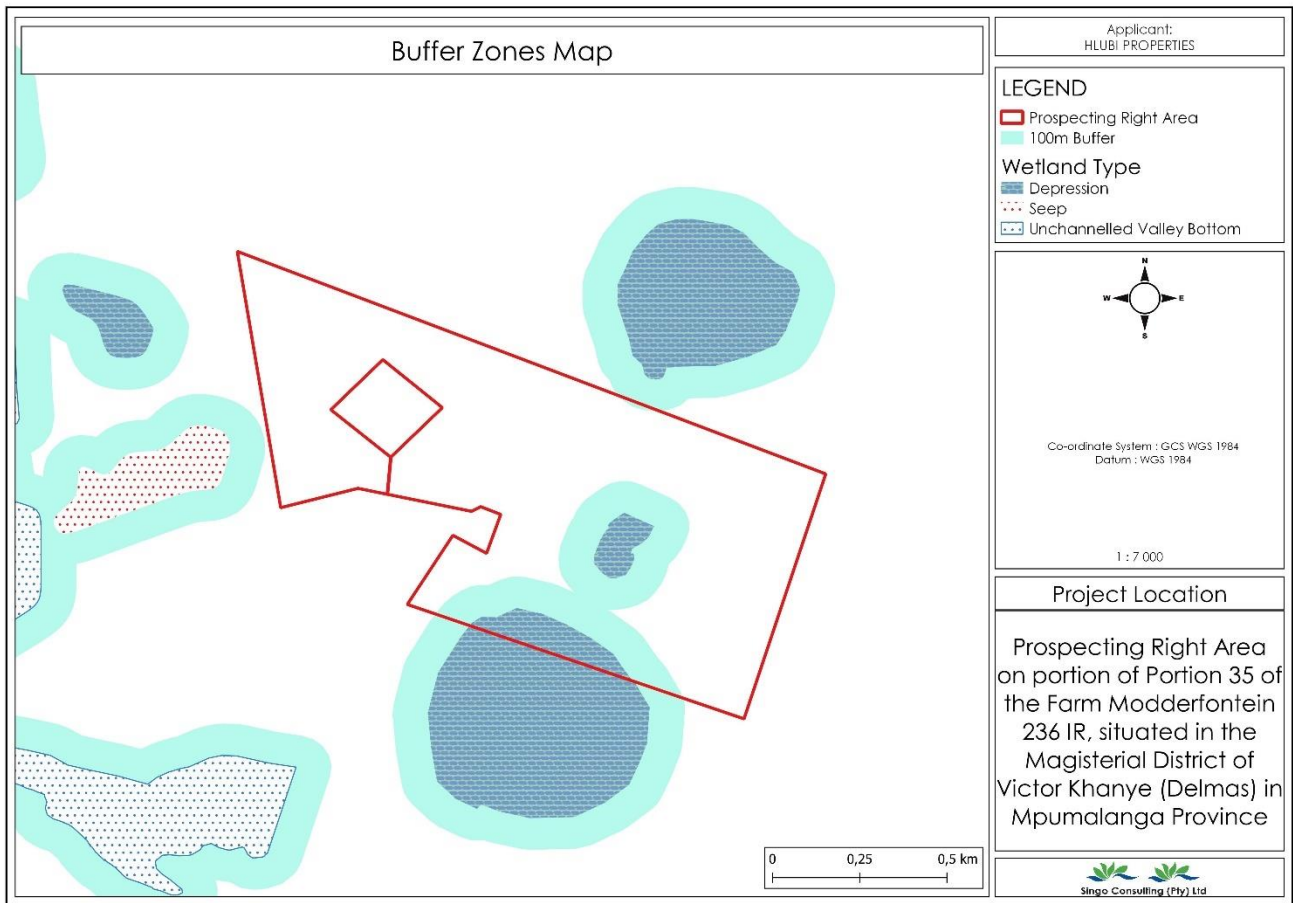


Figure 24: Hydrological buffer Map (Singo Consulting (Pty) Ltd, 2022)

Figure 24 illustrates the buffer that will be applied in order to protect the integrity of the water body.

Potential contaminants

The potential contaminants for the prospecting of coal are minimal and can be controlled easily as this activity will only take place for a short period of time. Fuel and oil handling facilities are likely sources of hydrocarbon related contaminants. Oils, grease, and other hydrocarbon products (such as petrol and diesel) handled in these areas may contaminate the environment by spillages and leakages (e.g., from drill rigs).

Absorbent Spill kits will be made available near the drill rigs during drilling activities. The oil absorbent chemicals will ensure that no oils infiltrate down to the underground to cause any groundwater contamination.



Figure 25: Examples of Absorbent spill kit to be used.

Aquifer Classification

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area pointed by the red arrow comprises of minor aquifers and the dominant water source is a surface water. Minor aquifers are said to be Moderately yielding aquifers of acceptable quality or high yielding aquifers of poor-quality water.

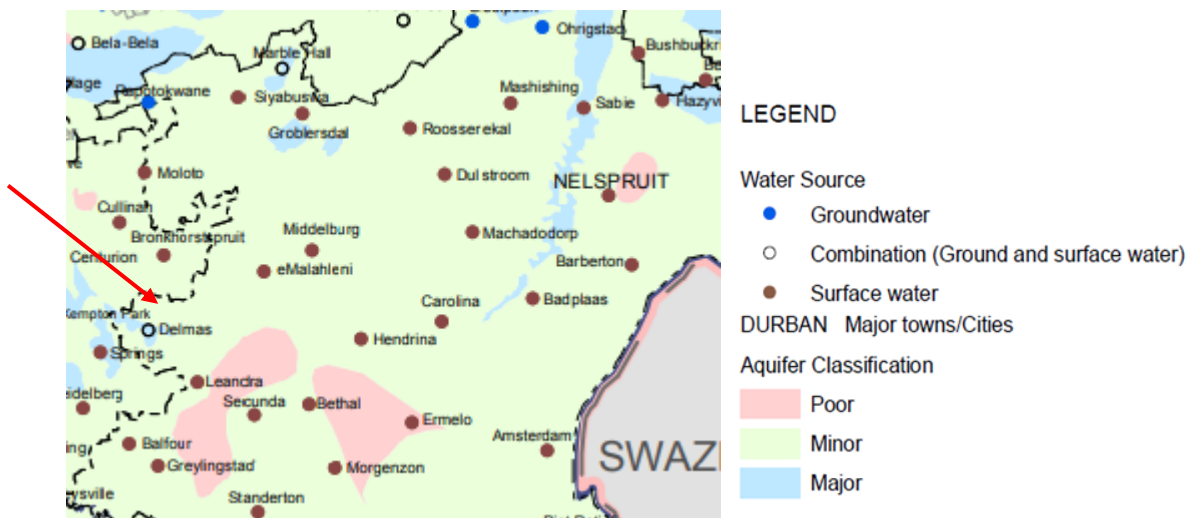


Figure 26: Aquifer classification of South Africa (project area depicted with a red arrow)

Recommendations

- The area is made up of fractured aquifers, it is recommended that during drilling, a map with fracture zones should be used so that the drilling process does not interact with water in fracture zones.
- Clearing of vast amount of vegetation should be avoided, this is to preserve infiltration.
- Constant availability of waste bins; Compliance of National Environmental Management: Waste Management Act 59 of 2008.
- Compliance of GN 704 4(b) and 7(a) and National Water Act 36 of 1998 (Chapter 3 – Part 4, Section 1 (a)(b)).
- No onsite vehicle or machinery repairs such as changing oil.
- No onsite storage of oil, diesel, or petrol.
- A 100 meters buffer should be followed to preserve the surface water resources as the area mostly depends on surface water.
- It is recommended that a plan on how surface water will be managed as this area is of steep slope, meaning that there is likely to be leaching in the borehole if not properly rehabilitated.
- It is recommended that during the drilling process, the team should use fracture zone map, to clearly point areas of fracture zones, this will help them not to drill at that point as it will contribute to groundwater contamination.
- On the southern, western, and eastern direction, the contours are decreasing in value, which clearly shows that from the boundary of the study area, it is downhill, mitigation measures on how water will be managed on these areas should be clearly defined.
- The area has presence of floodplains, which shows that there is occasional flooding, it is recommended that the phases of the project be scheduled during the time when there is little to no rainfall (June- July), this is to protect the water resources and financial aspect of the prospecting company.
- It is recommended that the drill rig operates while standing on a non-permeable material, to avoid spillages from entering the soil and eventually the water resources.
- It is recommended that there should be monitoring boreholes and regular monitoring should be implemented.

BIODIVERSITY

Vegetation

The proposed project area is located within the grassland biome. The grassland biome is one of the nine biomes in Southern Africa and is the largest biome after the Savanna Biome accounting to 28% of the terrestrial surface area of Southern Africa (Mucina and Rutherford 2006).

(Low & Rebelo 1996) further classifies the project area as characterised by the Moist Cool Highveld Grassland; The vegetation comprises predominantly short montane grasslands on the plateaus and the relatively flat areas, with short forest and Leucosidea thickets occurring along steep, mainly east facing slopes and drainage areas. *L. sericea* is the dominant woody pioneer species that invades areas as a result of grazing mismanagement.

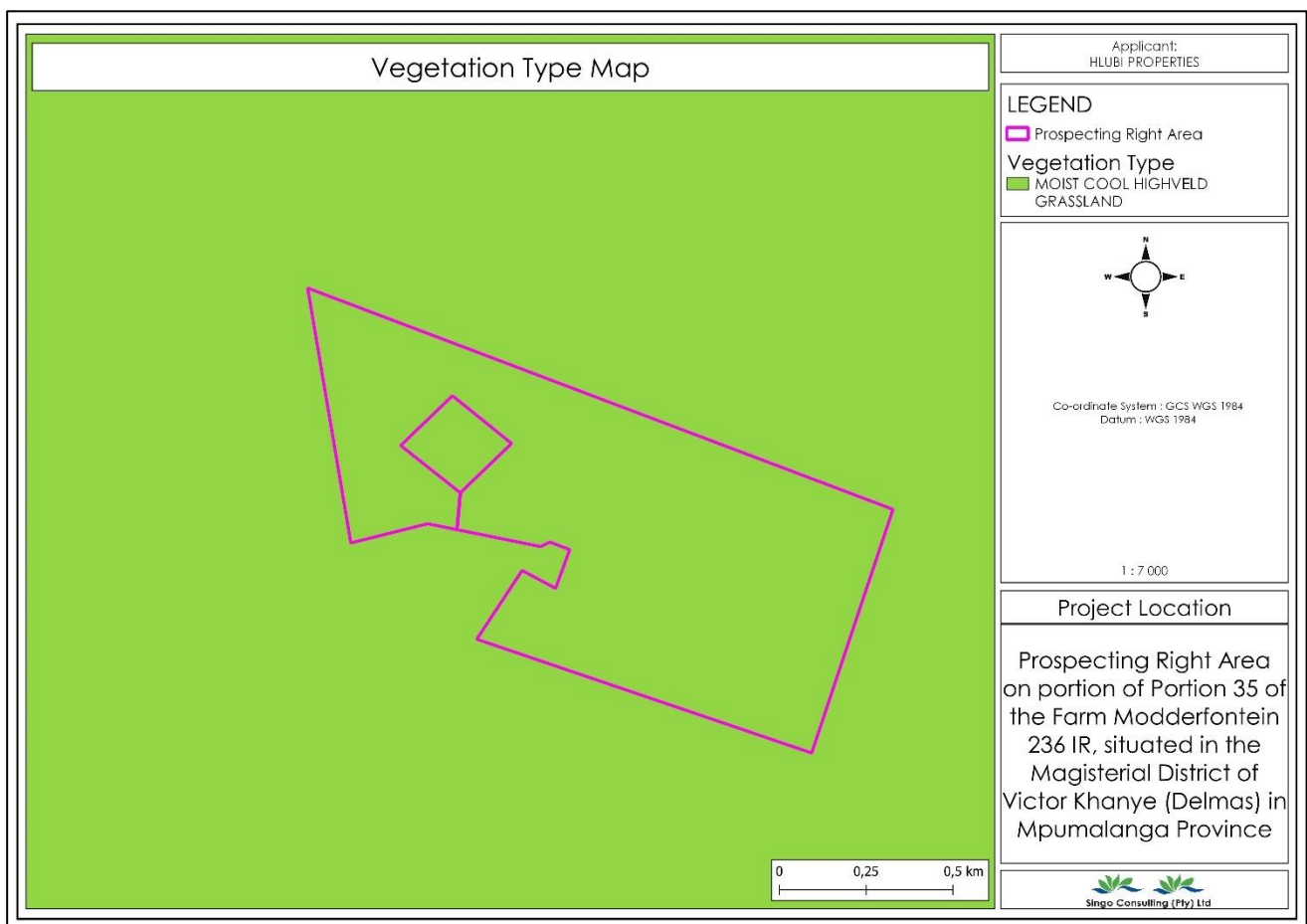


Figure 27:Vegetation type map (Singo Consulting (Pty) Ltd, 2022)

The screening report illustrates medium sensitive plant species within and around the application area. Possible species that can be found are shown on the map legend

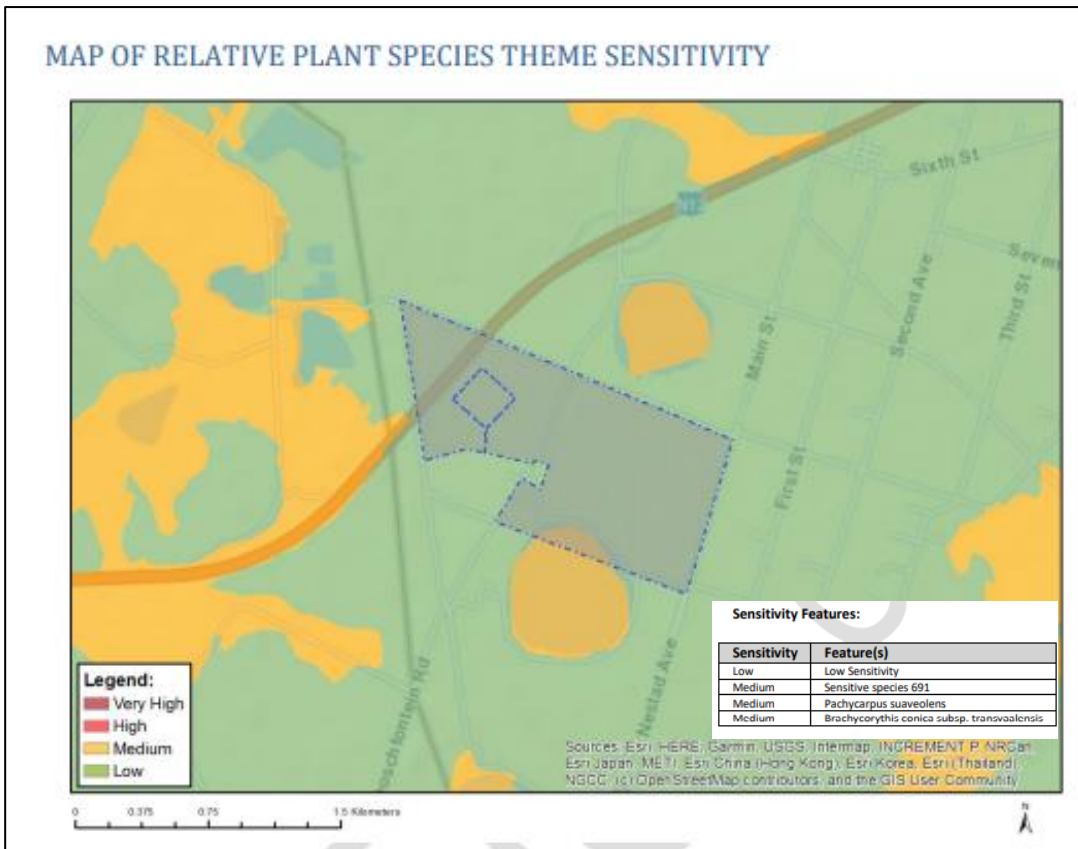


Figure 28: Relative plant species sensitivity map (source: screening report)



Photo 4: Site vegetation (Singo Consulting (Pty) Ltd, 2022)

Subsequent to conducting a brief once-off field survey of the study area, the site was recorded to have been modified & transformed in some parts, predominantly by agricultural activities. There is a wetland in the project area. As though it might be, the likelihood of occurrence of the sensitive vegetation will not be overlooked. The proposed development will involve the drilling a total of fifteen (15) prospecting boreholes, which will be distributed across the study area in areas where accessibility via a drilling rig will be possible. The only visible activity was farming of maize and poultry farming. Drilling is proposed to occur during dry seasons after harvest as to not hamper the production of the crop. Drilling will also be a measurable distance from the poultry houses. No protected trees or indigenous trees were seen during the initial ground truthing.

Fauna

Fauna that can be found within the project area are chicken as that is the agricultural activity taking place on site. It is concluded that due to the nature of the agricultural activity, poultry will be found on the site throughout the year in their chicken houses.

In addition, due to the nature of the agricultural activity, it is not foreseen that there will be any other animals present on the site. This is because the proposed project area has biosecurity measures in place. According to the screening report, the area has a vulnerable ecosystem (see figure 30 below).

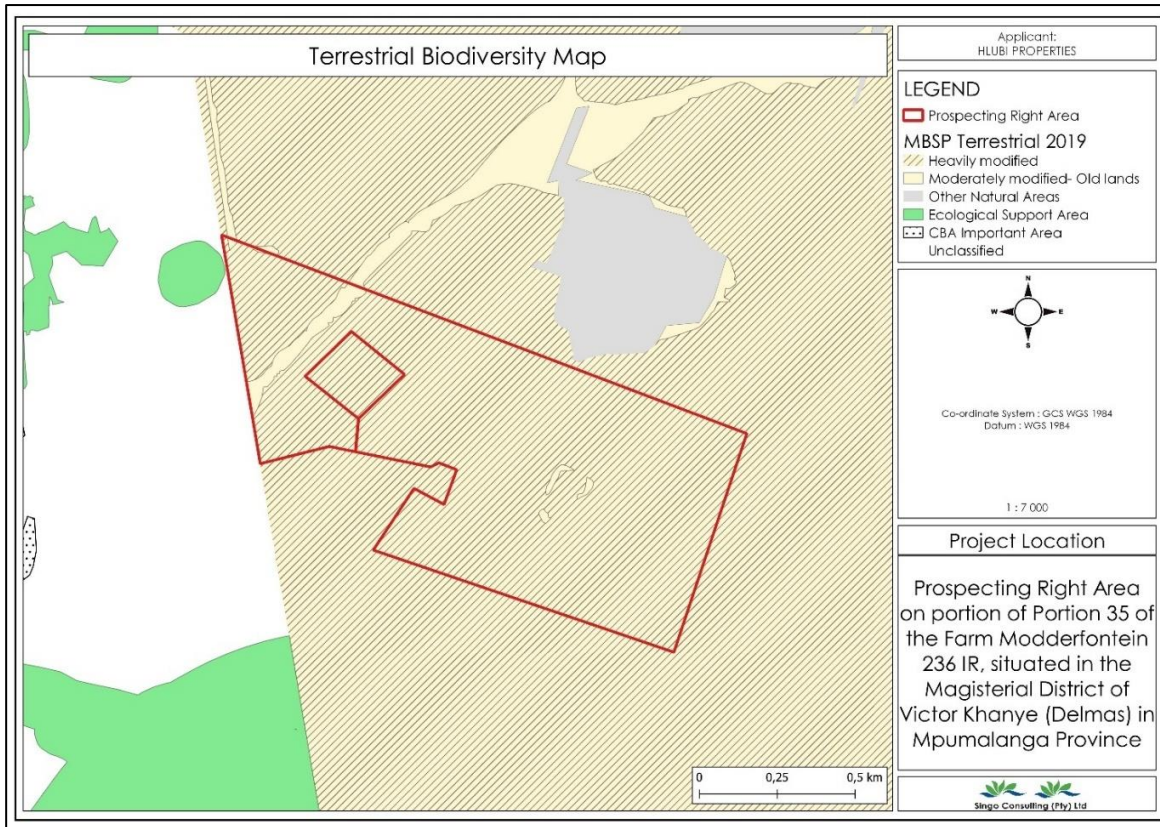


Figure 29: Biodiversity map (Singo Consulting (Pty) Ltd, 2022)

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Figure 30: Relative animal species sensitivity (source: screening report)

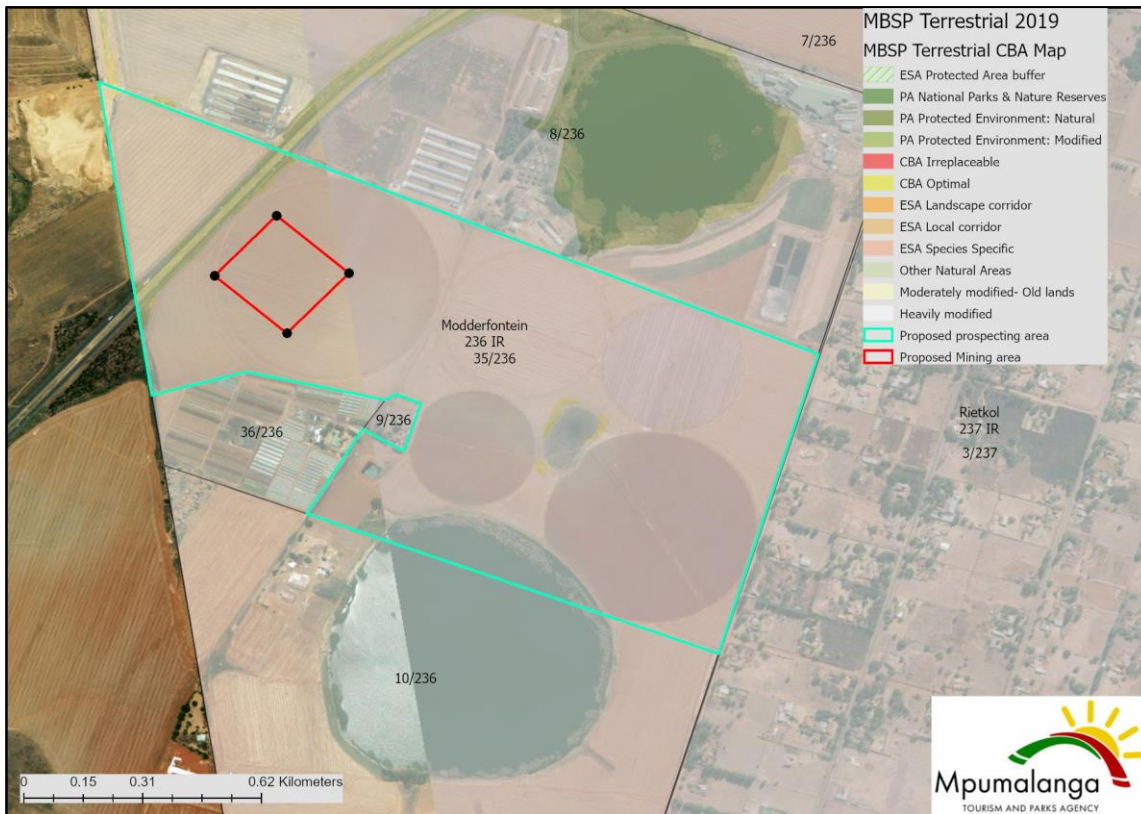


Figure 31: MBSPP Terrestrial map (Source: MTPA)

The map above (**Figure 31**) sourced from MTPA illustrates the CBA of the proposed project area. This map along with the freshwater map (see **Figure 32**) influenced the positioning of the proposed boreholes. Boreholes have been placed strategically on open spaces within the field. According to the maps obtained from MTPA as well as the borehole map produces by the inhouse GIS technician (**Figure 33**), no boreholes will be placed within and around the wetland and infrastructure that is found within the proposed project area.

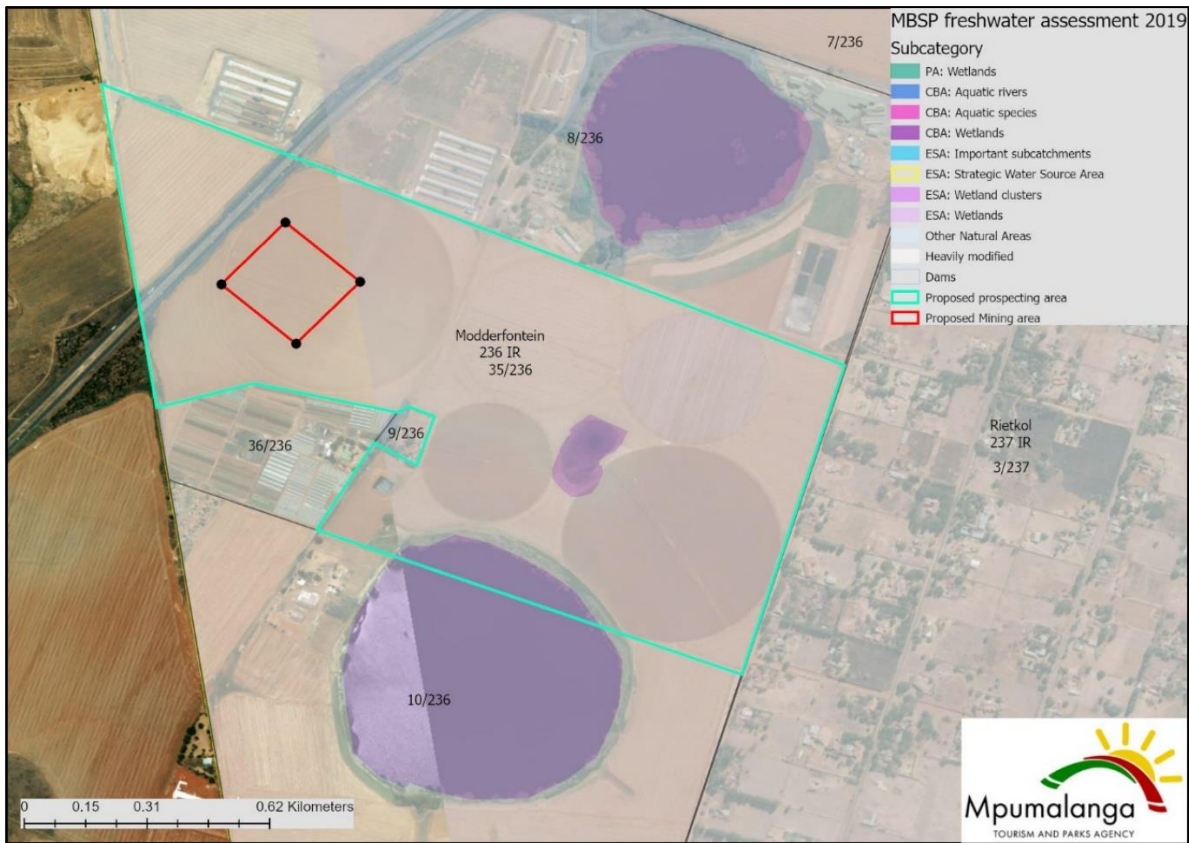


Figure 32: MBSF Freshwater map (Source: MTPA)

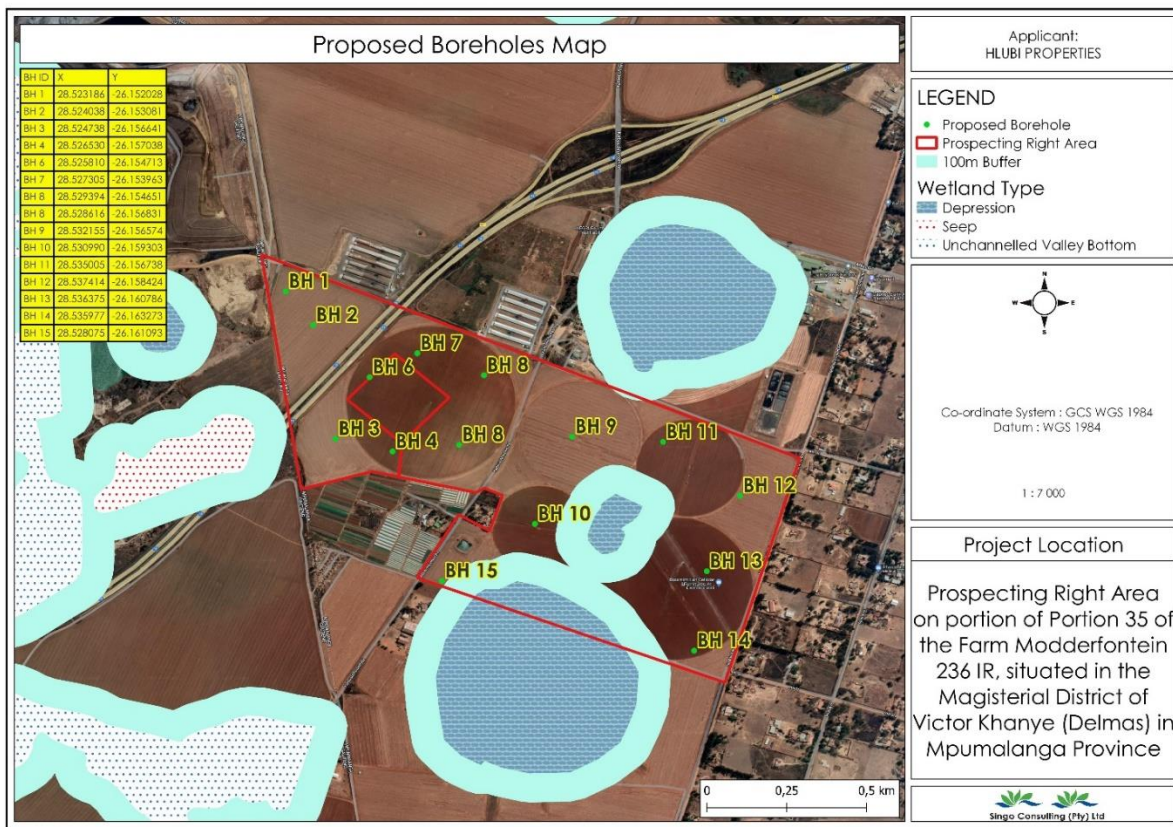


Figure33: Proposed boreholes (Singo Consulting (Pty) Ltd, 2022)

Cultural and Heritage

Heritage resources are, according to the National Heritage Resources Act 25 of 1999, any place or object of cultural significance. In one familiar aspect, heritage resources refer to buildings, monuments, landscapes and artefacts. These resources are relatively permanent, though somewhat very tenuous, environmental features; if they are present, their integrity is highly susceptible to construction and ground disturbance activities like prospecting and mining activities.

With reference to the Map of Relative Archaeological and Cultural Heritage theme sensitivity above sourced from the screening report, the proposed project area has an Archaeological and Cultural Heritage combined sensitivity of low sensitivity. At the time the survey was undertaken, there were no observations of any heritage resources nor grave sites, however, should it happen that for some reason, any heritage resources have been missed during the survey or significantly be exposed during the rather operational phase of the project, the South African Heritage Resources Authority (SAHRA) should be notified immediately.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Figure 30: Relative Archeological and cultural heritage theme sensitivity (source: screening report)

Noise

Prospecting and related activities frequently produce high levels of noise, which can become a nuisance or a health hazard if not adequately controlled. This has the potential to affect not just the prospecting area, but also the nearby land users and occupiers. The landowners and lawful occupiers of the study area, as well as neighbouring communities including land users and permanent small holding homesteads and villages, have been identified as the most sensitive receptors for the project area. Agricultural and residential land uses predominate in the surrounding area.

Noise generation can be expected on the proposed site as a result of a variety of activities & actions, such as loading and off-loading of moveable infrastructure during the rather operational phase and vehicles moving in and out of the project area. The area in its entirety is either natural or used for agricultural purposes. There are homesteads scattered on neighbouring farms who are the closest sensitive receptors. These sensitive receptors are approximately 298.45 m from the closest borehole. The homesteads' proximity to prospecting activities forces mitigation measures to be implemented. Mitigation techniques may include limiting noisy operations to typical working hours rather than weekends or holidays, as well as maintaining machinery and vehicles to prevent excessive noise. It is also recommended that consultations be held with affected parties to establish an acceptable schedule of noisy activities.

9.2 Environmental aspects which may require protection and/or remediation

Two wetlands have been identified within the proposed project area and the other two are approximately 131.11 m and 268.61 m from the project boundary. A buffer of 100 m has been applied to the water bodies within and around proposed prospecting area.

In addition, no drill site will be positioned within any of these watercourses. Furthermore, no drill site will be located within 100 meters of any properties, buildings, or homes located within and around the project area's boundaries. Existing access roads will be utilised to access the drill sites. Drilling is proposed to take place along the access roads (of agricultural fields) and in the event that the agricultural fields cannot be avoided, this information must be duly communicated to the affected landowner. Drill sites will overall be aimed at avoiding sensitive areas.

9.3 Description of the current land uses

Land uses within a 3 km radius are inclusive of the following:

- Agricultural fields (maize and poultry farming)
- Residential area
- Homesteads
- Waterbodies
- Cultivated & natural land
- Landfill

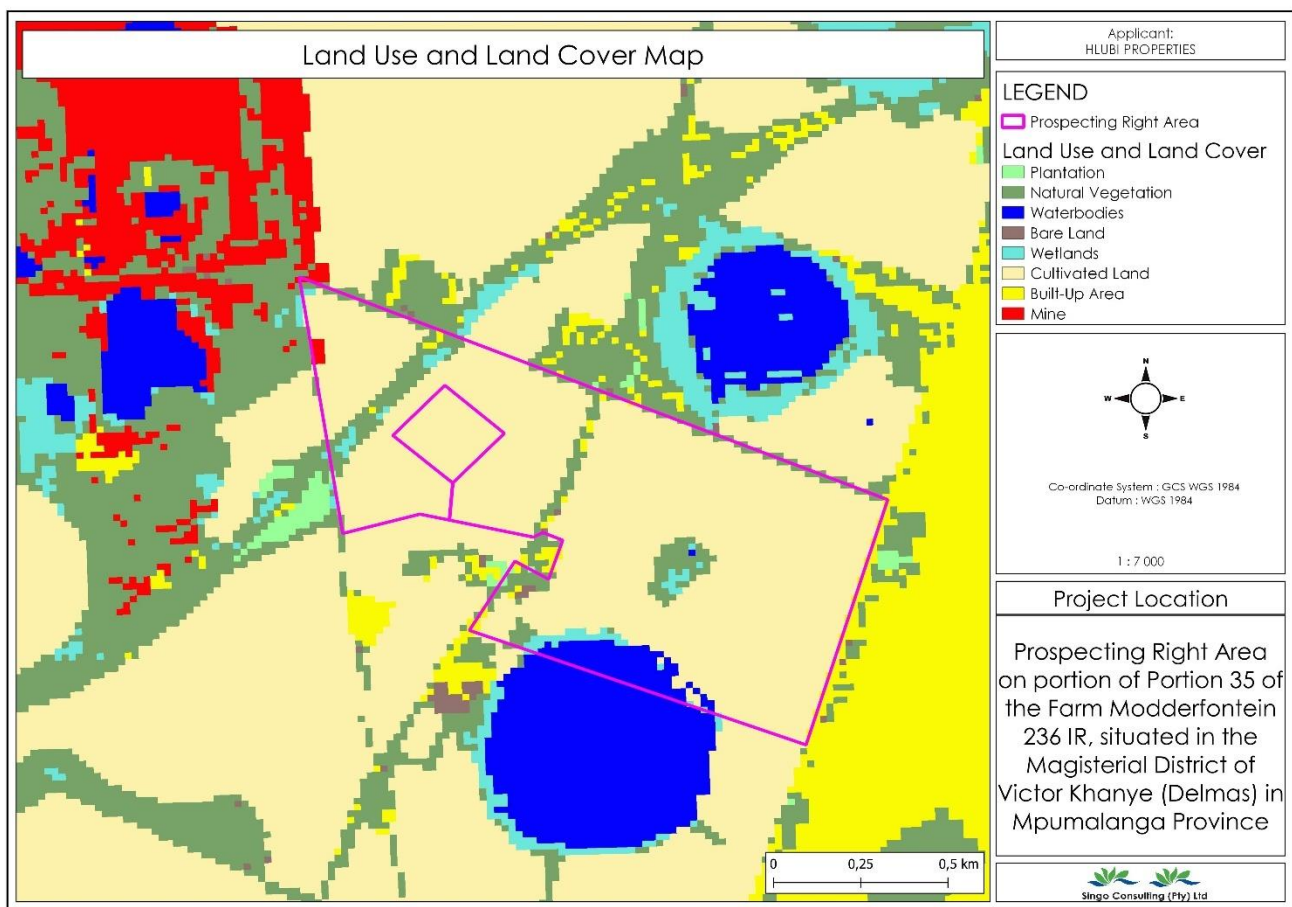


Figure 31: Land use map (Singo Consulting (Pty) Ltd, 2022)

9.4 Description of specific environmental features and infrastructure on the site

The application area is served by gravel roads which are in reasonable condition. The noticeable environment features and infrastructure on site, includes but not limited to the agricultural fields.



Photo 5: Current land use – maize and poultry farming (*Singo Consulting (Pty) Ltd, 2022*)

9.5 Environmental and current land use map

(Show all environmental, and current land use features)

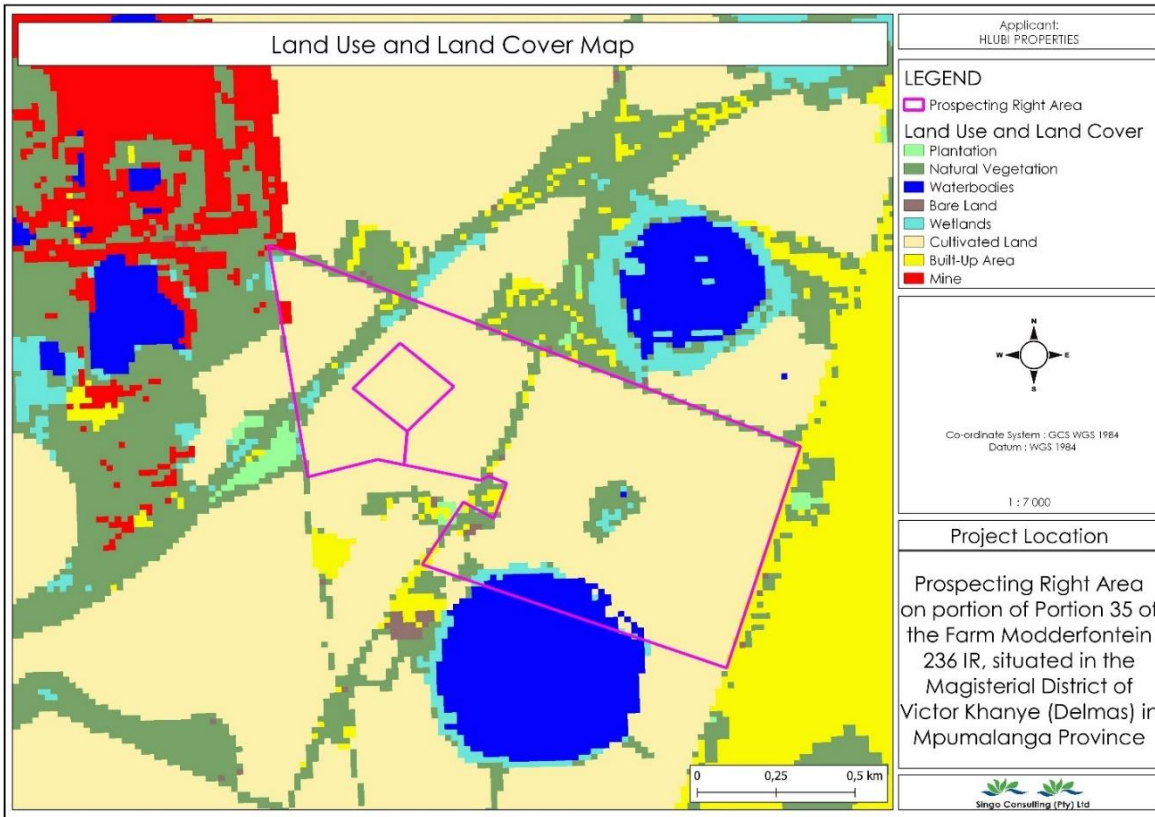


Figure 32: Land use map (Singo Consulting (Pty) Ltd, 2022)

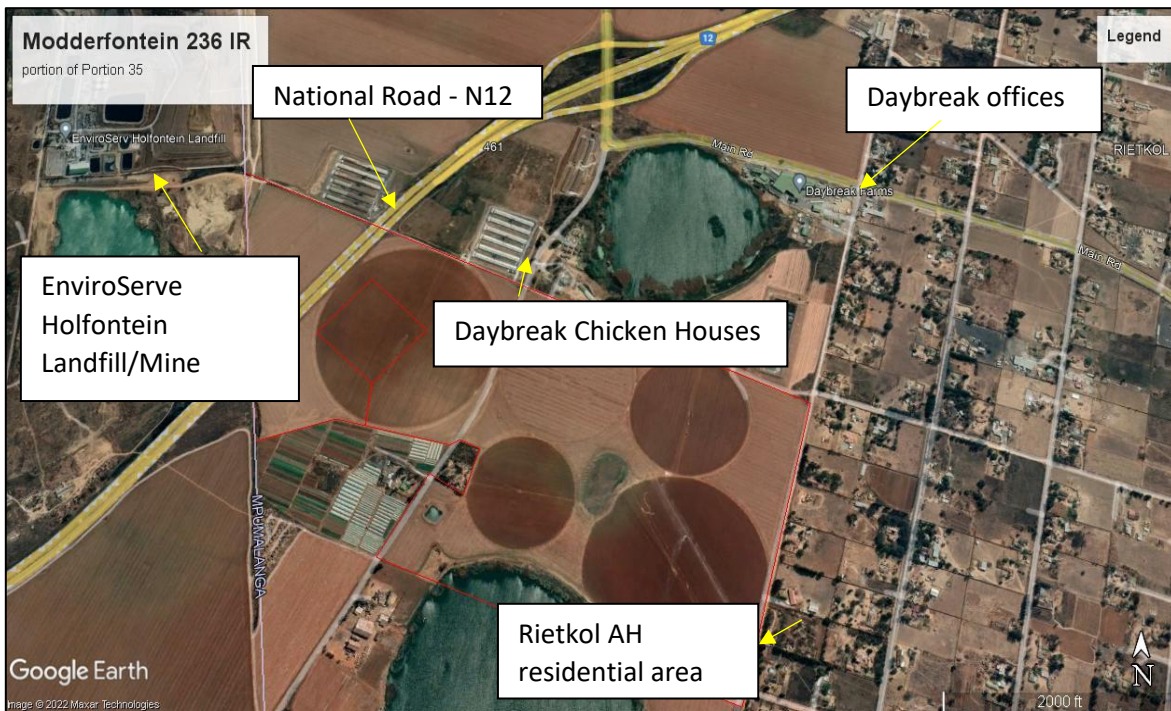


Figure 33: Google Earth view of current land use



Figure 34: Google Earth view of the proposed project area

10 IMPACTS AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

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

Table 11: Severity Criteria

INTENSITY = MAGNITUDE OF IMPACT	RATING
<i>Insignificant: impact is of a very low magnitude</i>	1
<i>Low: impact is of low magnitude</i>	2
<i>Medium: impact is of medium magnitude</i>	3
<i>High: impact is of high magnitude</i>	4
<i>Very high: impact is of highest order possible</i>	5

FREQUENCY = HOW OFTEN THE IMPACT OCCURS	RATING
<i>Seldom: impact occurs once or twice</i>	1
<i>Occasional: impact occurs every now and then</i>	2
<i>Regular: impact is intermittent but does not occur often</i>	3
<i>Often: impact is intermittent but occurs often</i>	4
<i>Continuous: the impact occurs all the time</i>	5

DURATION = HOW LONG THE IMPACT LASTS	RATING
<i>Very short-term: impact lasts for a very short time (less than a month)</i>	1
<i>Short-term: impact lasts for a short time (months but less than a year)</i>	2
<i>Medium-term: impact lasts for the for more than a year but less than the life of operation.</i>	3
<i>Long-term: impact occurs over the operational life of the proposed extension.</i>	4
<i>Residual: impact is permanent (remains after mine closure)</i>	5

EXTENT = SPATIAL SCOPE OF IMPACT/ FOOTPRINT AREA / NUMBER OF RECEPTORS	RATING
Limited: impact affects the mining area	1
Small: impact extends to the neighbouring farmers	2
Medium: impact extends to surrounding farmers beyond the immediate neighbours	3
Large: impact affects the area covered by the municipal area	4
Very Large: The impact affects an area larger than the municipal area	5

PROBABILITY = LIKELIHOOD THAT THE IMPACT WILL OCCUR	RATING
Highly unlikely: the impact is highly unlikely to occur	0.2
Unlikely: the impact is unlikely to occur	0.4
Possible: the impact could possibly occur	0.6
Probable: the impact will probably occur	0.8
Definite: the impact will occur	1

Negative impacts:

≤1	Very low	Impact is negligible. No mitigation required.
>1≤2	Low	Impact is of a low order. Mitigation could be considered to reduce impacts. But does not affect environmental acceptability.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts. Mitigation should be implemented to reduce impacts.
>3≤4	High	Impact is substantial. Mitigation is required to lower impacts to acceptable levels.
>4≤5	Very High	Impact is of the highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential Fatal Flaw.

Positive impacts:

≤1	Very low	Impact is negligible.
>1≤2	Low	Impact is of a low order.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts.
>3≤4	High	Impact is substantial.
>4≤5	Very High	Impact is of the highest order possible.

Table 12: Impact Significance Calculation – Construction, Operational and Rehabilitation Phase

Unite Number	Activity	Aspect	Impact	Significance Rating Before Mitigation Measures								Mitigation Measures	Significance Rating after Mitigation Measures									
				I	F	D	E	P	S	C	IS		SIGNIFICANCE	I	F	D	E	P	S	C	IS	SIGNIFICANCE
1,0	Employment of workers and procurement of materials	Social	Creation of employment. The nature of the project is one where a contractor is outsourced therefore the project is minuscule and only	1	1	1	1	0,4	1,0	1,0	0,4	(P) Very Low	Procumbent opportunities will be maximized as much as possible. Services may be sourced from the local community.	2	1	1	1	0,6	1,3	1,2	0,7	(P) Very low

			general workers may be employed																			
2,0	Transportation of equipment and material to site	Air Quality	Dust generation emanating from the movement of the drill rig onto the site.	3	1	1	1	1,0	1,7	1,3	1,3	Low	Ensure that dust suppressants are applied to gravel or unpaved roads that are in use; Vehicles will obey speed limits.	2	1	1	1	0,8	1,3	1,2	0,9	Very low
		Topography and Visual Environment.	Topographical change Negative visual impact caused by drilling	2	1	1	1	0,8	1,3	1,2	0,9	Very low	Ensure liaison with the local authorities for the maintenance and upkeep of roads; Ensure that dust suppressants are applied to gravel or unpaved roads that are in use; and Vehicles will obey speed limits.	2	1	1	1	0,6	1,3	3,0	1,8	Very low

			2	5	4	1	0, 8	3, 7	2, 3	1, 9	Low	<p>All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated;</p> <p>Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills;</p> <p>All vehicles and machinery to be serviced in a hard park area or at an off-site location;</p> <p>Storage of hydrocarbons and explosives must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973);</p> <p>Hydrocarbons and explosives storage facilities must be in a hard park bunded facility; and</p> <p>Vehicles with leaks must have drip trays in place.</p>	2	5	5	2	0, 6	4, 0	3, 0	1, 8	Low
		Surface and ground water																			
		Maize Crop	3	1	1	1	1, 0	1, 7	1, 3	1, 3	Low	<p>Drilling will only occur after harvest. No crops will be removed. Drilling will occur during the dry seasons. Area will be rehabilitated</p>	2	1	1	1	1, 0	1, 3	0, 8	0, 8	Very low

		Poultry farming	Movement of machinery near poultry houses	3	1	1	1	0.8	1.7	1.3	1.1	Low	Ensure that speed limit is kept, and dust is suppressed. No movement within the buffered area of the poultry houses is permitted	2	1	1	1	0.8	1.3	1.2	0.9	Very low
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3.	Use and storage of fuel and lubricants.	Soil	Soil contamination and degradation.	3	1	1	1	0,8	1,7	1,3	1,1	Low	<p>All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated;</p> <p>Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills;</p> <p>All vehicles and machinery to be serviced in a hard park area or at an off-site location;</p> <p>Storage of hydrocarbons must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); and</p> <p>Vehicles with leaks must have drip trays in place.</p>	2	5	5	2	0,6	4,0	3,0	1,8	Low
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		Surface Water	Impacts on surface water resources as a result of hydrocarbon spills.	3	3	1	2	0,6	2,3	2,2	1,3	Low	In case whereby contractors bring on site mobile bowsers and lubricants, these are to be stored in a bunded area when parked at the construction areas;All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated;Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills;All vehicles and machinery to be serviced in a hard park area or at an off-site location;Storage of hydrocarbons must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); andVehicles with leaks must have drip trays in place.	2	3	1	1	0,4	2,0	1,5	0,6	Very low
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		Groundwater	Groundwater contamination	4	3	1	2	0,6	2,7	2,3	1,4	Low	<p>In case whereby contractors bring on site mobile bowsers and lubricants, these are to be stored in a bunded area when parked at the construction areas;</p> <p>All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated;</p> <p>Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills;</p> <p>All vehicles and machinery to be serviced in a hard park area or at an off-site location;</p> <p>Storage of hydrocarbons must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); and</p> <p>Vehicles with leaks must have drip trays in place.</p>	2	2	1	1	0,4	1,7	1,3	0,5	Very low
4,0	4. Site clearance as a result of the preparations for temporary	Air Quality	Dust generation emanating from the activities associated	4	4	1	3	1,0	3,0	3,0	3,0	Moderate	<p>The area of disturbance must be restricted to the required footprint size;</p> <p>Ensure that only vegetation within the designated areas is</p>	3	3	1	2	0,8	2,3	2,2	1,7	Low

			Loss of land capability and land use potential	2	1	1	1	0, 8	1, 3	1, 2	0, 9	Very low	<ul style="list-style-type: none"> Any compacted soils must be ripped to alleviate compaction; The footprint should be re-vegetated with the relevant seed mixture as soon as possible 	2	1	1	1	0, 6	1, 3	1, 2	0, 7	Very low
			Loss of vegetation communities.	2	1	1	1	0, 6	1, 3	1, 2	0, 7	Very low	<ul style="list-style-type: none"> Ensure site clearing is restricted to the footprint of the designated areas to limit the degradation and destruction of the cultivated land All activities are to occur after harvest so as to not disturb production of maize 	2	1	1	1	0, 4	1, 3	1, 2	0, 5	Very low

			The destruction or degradation of watercourse vegetation.	2	5	5	2	0,6	4,0	3,0	1,8	Low	<ul style="list-style-type: none"> • Ensure the flow of water through the moist grassland areas remain unchanged. • Monitor the presence of hydrophytes and species with an affinity for moist soils within the moist grasslands. Should such species decrease or be replaced by terrestrial species, then it is likely that the hydrological regime on the site has changed. • If moist grasslands are found to become drier, the <i>Crinum</i> species must be relocated to suitable habitat. • Input of sediment due to any related mining activities should be prevented at all costs. • Pollution of the surface and groundwater. Mitigation for this potential impact includes: <ul style="list-style-type: none"> o In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water Affairs must be informed immediately; o Store all litter carefully so it cannot be washed or blown into the water course; o Storage of potentially hazardous materials should be above any 100-year flood line or the functional wetland boundary (and its associated buffer zone). These materials 	2	4	4	1	0,6	3,3	2,2	1,3	Low
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			Destruction of Maize filed.	3	2	1	1	1, 0	2, 0	1, 5	1, 5	Low	The contractors setting up should use the EMPR to oversee construction activities and ensure the following: <ul style="list-style-type: none"> • Keep the development footprint in Medium categories as small as possible. • A temporary fence or demarcation must be erected around the construction area (include the actual footprint, as well as areas where material is stored) to prevent access to adjacent sensitive vegetation. • Maintain site demarcations in position until the cessation of construction work. • Only remove vegetation where necessary and retain vegetation in place for as long as possible prior to removal. • Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area. • Formalize access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas. • Implement a vegetation rehabilitation plan to ensure areas that can be rehabilitated post construction are adequately vegetated with indigenous 	2	4	4	1	0, 6	3, 3	2, 2	1, 3	Low
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		Erosion and subsequent sedimentation or pollution of proximate moist grassland (watercourse).	3	3	1	1	0, 8	2, 3	1, 7	1, 3	Low	<ul style="list-style-type: none"> • Make use of existing roads and tracks where feasible, rather than creating new routes through cultivated areas.. • Do not remove any vegetation unnecessarily and only remove as per the specified extent. • Runoff from access roads must be managed to avoid erosion and pollution problems. • Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas. • Prevent spillage of construction material, oils or other chemicals, strictly prohibit other pollution. Ensure there is a method statement in place to remedy any accidental spillages immediately. • After construction clear any temporarily impacted areas of all foreign materials, re-apply and/or loosen topsoil's and landscape to surrounding level. 	3	2	1	1	0, 6	2, 0	1, 5	0, 9	Very low
	Surface and around	Siltation of surface	3	2	1	2	0, 8	2, 0	2, 0	1, 6	Low	<ul style="list-style-type: none"> • Ensure site clearing is limited to the designated areas 	2	1	1	1	0, 6	1, 3	1, 2	0, 7	Very low

		Poultry farming	Dust generation	3	1	1	1	0.8	1.7	1.3	1.1	Low	Ensure that infrastructure is set up a measurable distance from the chicken houses and ensure that the time of operation is agreed upon by the landowner.	2	1	1	1	0.8	1.3	1.2	0.9	Very low
5,0	Storage, use and control of fuel and lubricants to be used for the drilling activities.	Soil	Soil contamination and degradation	4	4	1	1	0.8	3.0	2.0	1.6	Low	<ul style="list-style-type: none"> • All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated; • Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills; • All vehicles and machinery to be serviced in a hard park area or at an off-site location; • Storage of hydrocarbons must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); • Hydrocarbons storage 	2	4	1	1	0.6	2.3	1.7	1.0	Low

		Soil contamination and degradation.	3	3	1	2	1, 0	2, 3	2, 2	2, 2	Modera te	<ul style="list-style-type: none"> • All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated; • Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills; • All vehicles and machinery to be serviced in a hard park area or at an off-site location; • Storage of hydrocarbons and explosives must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); • Hydrocarbons and explosives storage facilities must be in a hard park bunded facility; and • Vehicles with leaks must have drip trays in place. 	2	3	1	2	0, 8	2, 0	2, 0	1, 6	Low
	Fauna and Flora	Loss of biodiversity and minimise impacts on floral species	3	2	1	2	0, 8	2, 0	2, 0	1, 6	Low	<ul style="list-style-type: none"> • Ensure that dust suppressants are applied to gravel or unpaved roads that are in use; • Vehicles will obey speed limits. 	2	2	1	2	0, 6	1, 7	1, 8	1, 1	Low

		Wetlands and Aquatic Ecology	Contaminati on and sedimentati on of the wetland systems and aquatic ecosystems	2	2	1	2	1, 0	1, 7	1, 8	1, 8	Low	<ul style="list-style-type: none"> • Ensure a Storm Water Management Plan is implemented; • Ensure that dust suppressants are applied to gravel or unpaved roads that are in use and exposed surfaces; • Cover the road going trucks from the tip to KPS with a tarpaulin to prevent coal dust generation; • Vehicles will obey speed limits; and • Implement a biannual Aquatic Monitoring Programme to monitor potential impacts and implement corrective actions, should it be required. 	2	1	1	2	0, 6	1, 3	1, 7	1, 0	Low
		Surface Water	Contaminati on and sedimentati on of clean water resources.	3	2	1	2	0, 8	2, 0	2, 0	1, 6	Low	<ul style="list-style-type: none"> • Ensure that dust suppressants are applied to gravel or unpaved roads that are in use and exposed surfaces; • Vehicles will obey speed limits; and • Monitor surface water resources around project area to identify potential contamination. 	2	1	1	1	0, 6	1, 3	1, 2	0, 7	Very low

		Noise	noise emanating from mining and vehicular activities impacting on surrounding sensitive receptors.	4	4	1	2	1,0	3,0	2,5	2,5	Modera te	<ul style="list-style-type: none"> Prospecting related machines and vehicles should be serviced prior to commencement of activities and should there be an issue the equipment must be serviced immediately to avoid further generation of noise outside that of the drilling Ensure equipment and machinery is switched off when not in use. Adhere to the set speed limit in accordance with the Management Plan. 	2	4	4	1	0,8	3,3	2,2	1,7	Low
		Traffic	Degradation of the road structures resulting in potential health and safety risks and soil erosion.	3	2	1	2	0,8	2,0	2,0	1,6	Low	<ul style="list-style-type: none"> existing roads must be used as much as possible. Road use should remain in the working hours stipulated in the management programme. Adhere to the set speed limit in accordance with the Management Plan. 	2	2	1	2	0,4	1,7	1,8	0,7	Very low

7,0	Waste and sewage generation and disposal.	Topography and Visual Environment	Topography change	2	3	1	2	0,8	2,0	2,0	1,6	Low	<ul style="list-style-type: none"> Waste must be stored away from surface water and drainage lines; and General and hazardous waste must be removed and disposed of frequently at a registered disposal site. 	2	2	1	1	0,6	1,7	1,3	0,8	Very low
		soil	Degradation and contamination of soil	4	3	1	2	0,8	2,7	2,3	1,9	Low	<ul style="list-style-type: none"> Burying of any waste including domestic waste, empty containers on the site must be strictly prohibited; Proper waste storage facilities should be available and used for the correct separation and storage of waste prior to collection and disposal; and Generated waste must be removed to an approved disposal facility. 	3	2	1	1	0,4	2,0	1,5	0,6	Very low
		Surface Water	Contamination of clean water resources.	4	3	1	2	1,0	2,7	2,3	2,3	Moderate	<ul style="list-style-type: none"> The sewer waste collected from the workings must be disposed of at a licensed sewage treatment facility; Monitor surface water resources up and downstream of the Project area to identify potential contamination; Remove core log after analysis 	3	2	1	2	0,6	2,0	2,0	1,2	Low

11 METHODOLOGY USED IN DETERMINING AND RANKING THE NATURE, SIGNIFICANCE, CONSEQUENCES, EXTENT, DURATION AND PROBABILITY OF POTENTIAL ENVIRONMENTAL IMPACTS & 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).

Assigning significance to potential impacts requires integration of the severity (magnitude of the potential impacts), type of the impact, extent to which the impact will occur, probability of the impact (the likelihood of the impact occurring) and the duration of the impact. This is the best way to determine whether the impact is important or not, once the mitigation is considered.

Impacts have been assigned a rating of high (H), medium/moderate (M), low (L), very low (VL) or no impact. A significance rating is assigned twice to the impact. Firstly, to indicate significance without mitigation or optimization and secondly, to indicate significance after mitigation or optimisation. This is done to highlight the importance of mitigation or optimisation of potential impacts.

Table 13: Impact Severity rating

Category	Description/definition
High	Impacts will be of high significance if one of the following applies: <ul style="list-style-type: none"> • The extent is national to international • The duration is long term to permanent • The severity will be high • Probability is definite
Moderate	Impacts will be of moderate significance if one of the following applies: <ul style="list-style-type: none"> • The extent is local to regional • The duration is medium to long term • The severity is major • The probability is highly probable
Low	Impacts will be of low significance if one of the following applies: <ul style="list-style-type: none"> • The extent is local • The duration is temporary to permanent • The severity is low • The probability is probable

Very low	<p>Impacts will be of very low significance if one of the following applies:</p> <ul style="list-style-type: none"> • The extent is site-specific • The duration is temporary to permanent • The severity is very low • The probability is improbable
No impacts	A potential concern of impact which, upon evaluation, is found to have no impact.

This section provides a description of the methodology that was applied to assess the significance of environmental and heritage impacts. The significance rating process follows the established impact/risk assessment formula:

- Significance = Consequence x Probability, WHERE.
- Consequence = Severity + Spatial Scale +Duration, AND
- Probability = Likelihood of an impact occurring

The matrix calculates the rating out of 75 then converts this to a percentage. The percentage is the figure quoted in the matrix. The weight assigned to the various parameters for positive and negative impacts is presented in Table 8.

Table 14: Impact severity

Rating	Severity		Spatial scale	Duration	Probability
	Environmental	Social/cultural heritage			
7	Very significant impact on the environment. Irreparable damage to highly valued species, habitat or ecosystem. Persistent severe damage.	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	International	Permanent to mitigation	Certain/ definite
6	Significant impact on highly valued species, habitat or ecosystem.	Irreparable damage to highly valued items of cultural significance or breakdown of social order.	National	Permanent mitigated	Almost certain/ high probability

Rating	Severity		Spatial scale	Duration	Probability
	Environmental	Social/cultural heritage			
5	Very serious, long- term environmental impairment of ecosystem function that may take several years to rehabilitate.	Very serious widespread social impacts. Irreparable damage to highly valued items.	Province/ region	Project life (The impact will cease after the operational life span of the project)	Likely
4	Serious medium term environmental effects. Environmental damage can be reversed in less than a year.	On-going serious social issues. Significant damage to structures/ items of cultural significance	Municipal area	Long term (6-15 years)	Probable
3	Moderate, short-term effects but not affecting ecosystem function. Rehabilitation requires intervention of external specialists and can be done in less than a month.	On-going social issues. Damage to items of cultural significance.	Local	Medium term (1-5 years)	Unlikely/ low probability
2	Minor effects on biological or physical environment. Environmental damage can be rehabilitated internally with/ without help of external consultants.	Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Limited	Short term (Less than 1 year)	Rare/ improbable
1	Limited damage to minimal area of low significance, (e.g., ad hoc spills within plant area). Will have no impact on the environment	Low-level repairable damage to commonplace structures	Very limited	Immediate (Less than 1 month)	Highly unlikely/ none

Table 15: Impact significance.

		Consequence (severity + scale + duration)								
		1	3	5	7	9	11	15	18	21
Probability/Likelihood	1	1	3	5	7	9	11	15	18	21
	2	2	6	10	14	18	22	30	36	42
	3	3	9	15	21	27	33	45	54	63
	4	4	12	20	28	36	44	60	72	84
	5	5	15	25	35	45	55	75	90	105
	6	6	18	30	42	54	66	90	108	126
	7	7	21	35	49	63	77	105	126	147

Table 16: Impact significance threshold limit

Significance		
Low	0 - 35	
Medium-Low	36 - 76	
High-Medium	73 - 107	
High	108 - 147	

Activity 1: Construction phase

Impacted environment: Topography, visual, soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life and noise

Description: This activity involves bringing equipment to site as well as establishing structures associated with drilling prior to actual drilling. The significance of the impacts of the construction, operating and decommissioning of the prospecting area on the environment is low. There is a potential for most of the environment to be impacted over a limited spatial extent. Mitigation measures need to be applied to reduce or prevent the physical impacts on the affected environment

Table 17: Impact of construction on project area.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Natural vegetation	N	2	5	4	11	5	55	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low

Activity 2: Storage of hydrocarbons, chemicals, fuel

Impacted environment: Soil, land capability, surface water, groundwater and natural vegetation.

Description: This activity involves the storage of hydrocarbons, chemicals and fuel in the project area. During the drilling activities there will be no storage of diesel fuel, oil and lubricants on site. Significant amount of diesel will be transported to site for the drill rig machine on a daily basis for the duration of the prospecting activities. The potential contaminants for the prospecting of coal are minimal and can be controlled easily as this activity will only take place for a short period of time. Fuel and oil handling facilities are likely sources of hydrocarbon related contaminants. Oils, grease, and other hydrocarbon products (such as petrol and diesel) handled in these areas may contaminate the environment by spillages and leakages (e.g., from drill rigs).

Absorbent Spill kits will be made available near the drill rigs during drilling activities; The oil absorbent chemicals will ensure that no oils infiltrate down to the underground to cause any groundwater contamination.

Table 18: Impact of hydrocarbon, chemical and fuel storage.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	5	3	10	5	50	Medium-Low
C,O,D	Land capability	N	2	5	3	10	5	50	Medium-Low
C,O,D	Surface water	N	4	5	5	14	5	56	Medium-Low
C,O,D	Ground water	N	4	5	5	14	5	56	Medium-Low
C,O,D	Natural vegetation	N	2	5	3	10	5	50	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low

Activity 3: Temporal fence

Impacted environment: Visual and animal life

Description: This involves the placement of a fence on the farm. The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. The impact that the fence will have on animal life is potentially positive as animals like livestock will be restricted from grazing in the project area, preventing injury and possible overgrazing. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 19: Impact of temporal fence.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Visual	N	2	4	3	9	5	45	Medium-Low
C,O,D	Animal life	P	2	3	3	8	4	32	Low

Activity 4: Removal and storage of topsoil (topsoil stockpile)

Impacted environment: Soil, land capability, visual, topography, surface water, air quality, natural vegetation, animal life and noise.

Description: This activity will cause surface disturbance. The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent

with visual and noise disturbance occurring locally. Surface water and archaeology & cultural heritage is most likely to occur on a municipal scale. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 20: Impact of topsoil removal and storage.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,D	Soil	N	2	5	4	11	5	55	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low
C,D	Visual	N	3	4	3	10	5	50	Medium-Low
C,O,D	Topography	N	2	5	3	10	6	60	Medium-Low
C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Air quality	N	2	3	4	9	5	45	Medium-Low
C,O,D	Natural vegetation	N	2	6	4	12	5	60	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low
C,O,D	Cultural heritage/ archaeology	N	4	5	5	14	5	70	Medium-Low
C,O,D	Noise	N	3	2	3	8	6	48	Medium-Low

Activity 5: Transport of equipment

Impacted environment: Soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life, archaeology/cultural heritage and noise.

Description: The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with noise potentially occurring over a local extent. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 21: Impact of equipment transport.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low

C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Air quality	N	2	3	4	9	5	45	Medium-Low
C,O,D	Natural vegetation	N	2	5	4	11	5	55	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low
C,O,D	Cultural heritage/ archaeology	N	4	5	5	14	5	70	Medium-Low
C,O,D	Noise	N	3	2	3	8	6	48	Medium-Low

Activity 6: Ablutions

Impacted environment: Soil, land capability, surface water and groundwater

Description: The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for surface and groundwater which is most likely to occur over a limited extent. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 22: Impact of ablutions.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground water	N	4	5	5	14	4	56	Medium-Low

Activity 7: Domestic waste

Impacted environment: Soil, visual, land capability, surface water, groundwater, natural vegetation and animal life.

Description: The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for surface and groundwater which

is most likely to occur on a limited spatial extent. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 23: Impact of domestic waste.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Visual	N	2	4	4	10	5	50	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Groundwater	N	4	5	5	14	4	56	Medium-Low
C,O,D	Natural vegetation	N	2	6	4	12	5	60	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low

Activity 8: Access roads

Impacted environment: Soil, land capability, surface water, air quality, natural vegetation, animal life, wetlands, archaeology/cultural heritage and noise.

Description: The significance of the impacts of the activity on the affected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for noise which probably occur on a local scale and surface and groundwater as well as archaeology/cultural heritage which will occur on a municipal extent. Mitigation measures need to be applied to reduce or prevent physical impacts on the environment.

Table 24: Impact of access roads.

Phase impact occurs (C, O, D)	Affected environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)	Significance rating (pre-mitigation)
C,O,D	Soil	N	2	6	4	12	5	60	Medium-Low
C,O,D	Land capability	N	2	6	4	12	5	60	Medium-Low
C,O,D	Surface water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Ground water	N	4	5	5	14	4	56	Medium-Low
C,O,D	Air quality	N	2	3	4	9	5	45	Medium-Low
C,O,D	Natural vegetation	N	2	6	4	12	5	60	Medium-Low
C,O,D	Animal life	N	2	4	6	12	4	48	Medium-Low

C,O,D	Cultural heritage/ archaeology	N	4	5	5	14	5	70	Medium-Low
C,O,D	Noise	N	3	2	3	8	6	48	Medium-Low

Soils, land capability and land use

Prospecting activities involve drilling but may affect land available for grazing and will increase the potential for soil erosion (which is currently minimal). Fencing off the project area will prevent animals from grazing, thus improving vegetation growth in the area. Soil pollution from domestic waste and hydrocarbon spillages may occur, potentially increasing soil contamination. Soils that have been stripped can never be replaced in their original state due to the alteration of physical, chemical and biological soil properties during removal and stockpiling. Stockpiling influences soil properties negatively and may cause soil deterioration, especially in terms of biological quality. The cumulative impact on regional land capability and land use is low due to the land use being predominately for agriculture which is dominated by grazing and housing. Thus, the activities will result in a low significance cumulative impact only being limited to the site and its immediate surroundings.

Surface water

There is a non-perennial and perennial rivers near the boundaries of the project area. Considerable care must be taken to ensure that these water courses are not disturbed and contaminated by the proposed activities.

Groundwater

Hydrocarbon spills from trucks and machinery, ablutions and domestic waste may contribute to groundwater contamination. The total cumulative impact is low as these activities will be limited to the site.

Noise

Cumulative impacts are expected to be significant due to drilling machines and trucks. Surrounding farmers will also contribute to noise levels in the area with agricultural activities. Prospecting operations will take place between 07:00 and 17:30 to limit noise to office hours. The total cumulative impacts are expected to be low-medium.

Flora

Vegetation destruction will only occur during the construction phase in a potentially disturbed area. The cumulative impacts will be more severe if endemic and Red Data plants are encountered on site, but mitigation measures, like the protection and removal of Red Data

plants and the rehabilitation and re-introduction of animals currently present after closure should reduce the significance of the negative cumulative impact.

Fauna

Regionally, agriculture, plantations, sheep and Livestock farming take place. Towns and communities are developing, resulting in a less significant cumulative impact on the fauna. The cumulative impacts will be more severe if endemic and Red Data animals occur in the area, but mitigation measures, like the protection and removal of Red Data animals and the rehabilitation and re-introduction of animals currently present after closure should reduce the significance of the negative cumulative impact.

Visual aspects

Drilling will have a slight impact on the visual aspects. There are, however, already existing impacts on the visual aspects of the area due to the agricultural activities and presence of other infrastructure. The cumulative impacts can be minimized in Table 25.

Table 25: Impact of visual aspects.

Impacted environment	Nature of Impact (Negative/Positive)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Significance (147)
Geology	N	1	3	1	5	2	10
Soils, land capability and land use	N	3	4	3	10	5	50
Surface water	N	3	3	2	8	4	32
Groundwater	N	3	3	2	8	4	32
Air quality	N	2	3	2	7	4	28
Noise	N	2	2	2	6	4	24
Flora	N	1	3	2	6	4	24
Fauna	N	1	3	2	6	4	24
Site of archaeological and cultural interest	N	2	3	2	7	4	28
Visual impacts	N	1	3	2	6	4	24

12 POSITIVE AND NEGATIVE IMPACTS OF THE PROPOSED ACTIVITY (IN TERMS OF THE INITIAL SITE LAYOUT) AND ALTERNATIVES ON THE ENVIRONMENT AND COMMUNITY

(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)

Potential impacts that were identified during the Basic Assessment Process are discussed under environmental component headings in this section. The project will not cause adverse

surface disturbances as the planned prospecting activities will be managed and rehabilitation will occur progressively per drill hole. A 100m buffer zone will be established around all water bodies, infrastructure/chicken houses.

Advantages & Disadvantages

Exploration has not been conducted in the area thus the proposed prospecting right area is suitable as the coal reserve can be explored. This exploration will assist with adding geological data on the area. In addition, proposed project area is surrounded by operational mines mining coal. Due to this, the proposed area should also be explored.

The proposed prospecting site is currently conducting agricultural activities which is maize and poultry farming. Conducting prospecting activities will only be after harvest and before the seeds need to be planted. In addition, prospecting activities will be done on a schedule that does not hamper the poultry operation. The proposed project area has a water body inside its boundaries. To protect the integrity of the water body, buffers have been put in place and proposed boreholes are placed a distance from the sensitive areas.

Prospecting is a short term and temporary project. In this light, there are no disadvantages of the selected site in terms of the mineral to be prospected for or the location of the boreholes and environmental issues/concerns.

13 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)

A description and assessment of the mitigation measures for each potential impact identified in the impact assessment process is provided by the following sections.

Possible mitigation measures include:

- Avoid and control through implementation of EMPr mitigation measures (e.g. speed limit enforcement & vehicle maintenance);
- Avoidance and control through preventative measures (e.g. site security, code of conduct);
- Avoid and control through implementation of preventative measures (e.g. monitoring, communication with landowners, emergency response procedures);
- Avoid through implementation of suitable progressive rehabilitation and soil management;

- Avoid and control through implementation of EMPr mitigation measures (e.g. Spill prevention, Hydrocarbon Storage);
- No invasive prospecting activities to be undertaken within 100m of a watercourse.
- Avoiding ground water pollution
- Where drinking water/ livestock watering boreholes are to be affected then the advice of a geohydrologist should be sought with regards to the need for plugging and casing of the prospecting boreholes.
- Remedy through clean-up and waste disposal; and
- Avoid and control through implementation of preventative measures (e.g. location of toilets, spill prevention, waste management).

14 STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE

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

The specific locations of intrusive drilling activities will be confirmed during Phase 1 of the Prospecting Work Programme. All infrastructure to be developed will be mobile and temporary. It is recommended that all activities take place away from the waterbodies, ESA 30m buffer to be maintained and there should be no clearing of sensitive vegetation. Negotiations and agreements will be made with the landowner to use any existing infrastructure like access roads. Negative impacts identified above will be mitigated through implementation of the proposed mitigation measures as detailed in the EMPr. Where negative impacts cannot be avoided, rehabilitation will be undertaken.

The impacts of the development alternative are considered of medium to low significance and would be further reduced to low should the implementation of the proposed mitigation measures be done accordingly.

15 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).

Approach to the EIA

An Environmental Impact Assessment (EIA) is a good planning tool. It identifies the environmental impacts of a proposed development and assists in ensuring that a project will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

The Basic Impact Assessment for this project complies with the National Environmental Management Act (1998) (as amended) and the NEMA EIA Regulations (2014) and guidelines of the Department of Environmental Affairs (DEA). The guiding principles of an EIA are listed below.

Guiding principles for an EIA

The EIA must take an open participatory approach throughout. This means that there should be no hidden agendas, no restrictions on the information collected during the process and an open-door policy by the proponent. Technical information must be communicated to stakeholders in a way that is understood by them and that enables them to meaningfully comment on the project.

There should be ongoing consultation with interested and affected parties representing all walks of life. Sufficient time for comment must be allowed. The opportunity for comment should be announced on an on-going basis. There should be opportunities for input by specialists and members of the public. Their contributions and issues should be considered when technical specialist studies are conducted and when decisions are made.

Information gathering

Early in the Basic Assessment process, the Environmental Assessment Practitioner (EAP) identified the information that would be required for the impact assessment and the relevant data were obtained. In addition, available information about the receiving environment was gathered from reliable sources, interested and affected parties, previous documented studies in the area and previous EIA Reports. The project team visited the site to gain first-hand information and an understanding of the existing operations and the proposed project.

Baseline Specialist Assessments

The following baseline studies have been conducted:

- Hydrogeology study
- Soil study

The findings and recommendations identified by the various specialist studies undertaken, were incorporated into the Basic Impact Assessment.

Legislative Framework

The legal requirements were described and assessed in detail.

Alternatives

Prospecting is conducted in phases, where the activities and location of drilling are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and core drilling cannot be as yet confirmed.

Description and assessment of impacts identified

A comprehensive list of all potential impacts of the prospecting as identified by the EAP and the specialists, are provided and are assessed.

Environmental Management Programme

An Environmental Management Programme containing mitigation, management and monitoring measures and specifying roles and responsibilities was compiled with specialist input and are included in this report.

Stakeholder engagement

Registered interested and affected parties including relevant organs of state, are consulted with during the process. All their comments will be formally responded to and incorporated into the Final Basic Assessment Report and Environmental Management Programme that will be submitted to the competent authority.

16 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)

Potential impacts that may be caused by the proposed development will be identified using input from the following:

- Views of I&APs;
- Existing information;
- Baseline Specialist investigations;

- Site visit with the project team; and
- Legislation.

The following potential major direct, indirect and cumulative impacts were identified:

- Air pollution (dust, gaseous emissions), Land pollution;
- Water pollution (surface water, groundwater and wetlands);
- Land degradation, land-use and capability impacts;
- Ecological degradation;
- Land pollution;
- Aesthetic, pollution;
- Increased noise levels;

Table 26: Potential environmental impacts and mitigation measures.

Potential environmental impacts and sources	Measures to prevent, mitigate, minimize or manage the impacts
<p>Impact: Air pollution (dust, gaseous emissions)</p> <p>Source: Establishment of camp site, movement of vehicles and drill rigs,</p>	<ul style="list-style-type: none"> • Dust suppression measures will be implemented and the area will be sprayed with water. • A low-speed limit (30 km/h) will be imposed to reduce dust generation. • All equipment and vehicles will be equipped with the manufacturers' standard exhaust systems which will reduce emissions. • Waste burning will not be allowed on site.
<p>Impact: Water pollution (surface water, groundwater and wetlands)</p> <p>Source: Spillages from machines on site</p>	<p>Prospecting activities will not be conducted within a 100 m radius from a dam, river, stream, wetland or any water body and the following will be ensured:</p> <ul style="list-style-type: none"> • Control and manage storm water • Prevent soil erosion and keep the water channel clean • Monitor the ground water
<p>Impact: Land degradation, land-use and capability</p> <p>Source: Poor waste management</p>	<ul style="list-style-type: none"> • Completed boreholes will be rehabilitated and re-vegetated. • Areas which do not form part of drilling site will not be disturbed • Prospecting will be conducted in an environmentally sustainable manner. • One of the prospecting objectives is to turn the area into other land use/s after closure. • Waste material will be properly managed
<p>Impact: Ecological degradation</p> <p>Source: Uncontrolled vehicle movement and poor rehabilitation</p>	<ul style="list-style-type: none"> • Disturbed biodiversity will be restored after closure. • Indigenous species will be used to re-vegetate the area. • No animals will be killed and collection of firewood will not be allowed. • Movement of vehicles will be restricted to designated area only.
<p>Impact: Land pollution</p> <p>Source: Lack of proper waste management</p>	<ul style="list-style-type: none"> • It is anticipated that a small amount of domestic waste will be generated by workers. Such waste materials will be kept in waste bins which will be disposed of on a regular basis at the registered waste disposal site. The same will apply to office waste.

	<ul style="list-style-type: none"> Any spillages which may occur will be investigated and immediate action will be taken. Significant spills (>35 l) of any hazardous substance will be recorded and reported to the environmental personnel, DWA, DMRE and any other relevant authorities. Scraps will be kept in designated areas prior delivery to the scrap yard. All machinery will be serviced off site and also inspected for any leaks.
<p>Impact: Aesthetic, pollution</p> <p>Source: Machinery</p>	<ul style="list-style-type: none"> The visual impact will be of temporary nature. The surrounding trees and dense vegetation will also serve as the screen to the prospecting area.
<p>Impact: Noise</p> <p>Source: Vehicle movements and drill rigs</p>	<ul style="list-style-type: none"> The operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulation as well as other applicable legislations regarding noise control. Employees will be supplied with ear plugs. All prospecting vehicles are equipped with silencers and maintained in a road worthy condition. All work will be carried out between 06:00 and 18:00. This will allow landowners and occupiers to have some respite from noise.
<p>Impact: Death of poultry</p> <p>Source: Drilling operation too close to chicken houses</p>	<ul style="list-style-type: none"> Drilling will only occur during specified time No drilling will occur near the chickens and a buffer on 100m will be applied

Table 27: Activity and potential impact in each phase.

Activity	Description	Affected environment	Potential impact
Prospecting phase			
Uploading of access roads	Access roads that already exist will be upgraded.	Soil	Increased erosion of soils due to the removal of vegetation.
		Natural vegetation	Destruction and removal of natural vegetation during site clearance.
		Surface water	Siltation of surface run-off due to soil erosion.
		Air quality	Dust emission due to wind erosion.
Transportation of equipment	The drilling operation will involve transportation of equipment to the project area.	Soil	Soil compaction due to the repetitive movement on gravel roads.
		Interested and Affected Parties	Damage to roads caused by movement of heavy vehicles and continual use of vehicles moving to and from the site.
		Air quality	Increased dust emissions due to entrainment of dust particles by the movement and operation of construction equipment.
Construction of surface infrastructure.	This will involve vegetation clearing and topsoil removal to construct a site office, a change house, toilet, etc.	Soil	Permanent compaction of soil in areas of infrastructure construction
		Land capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.
		Natural vegetation	Disturbance of vegetation could result in soil erosion due to exposed soils.
		Surface water	Altered surface flow dynamics around surface infrastructure and potential contamination of surface water due to fluid spillage.
		Groundwater	Groundwater contamination due to infiltration of contaminated water.
		Air quality	Dust from construction vehicles on gravel and secondary roads.

Soil Removal and Stockpile	It is assumed that the topsoil thickness averages 0.5 m over the disturbed area. Approximately 93 000 m ³ of topsoil will be removed.	Topography	Alteration of local topography and disturbance of natural drainage lines.
		Visual	Creation of stockpiles alters the visual quality of the landscape.
		Soil	Damage to the natural soil structure due to soil handling, removal and mixing of soil types and horizons. Removal of vegetation causes a change in the water runoff characteristics of the site and increases probability of soil erosion. This leads to the loss of topsoil and an increase of siltation in the streams and rivers with the runoff carrying sediment. Leaching of soil nutrients during long-term stockpiling.
		Land capability	Decreased land capability due to damage to the natural soil structure, soil loss through wind and water erosion and leaching of soil nutrients.
		Natural vegetation	Damage to natural vegetation due to deposition of dust emitted during the tipping and stockpiling, restricting photosynthesis.
		Animal life	Direct impacts on threatened fauna species, habitat disturbance and destruction, and disruption of birds nesting, foraging or roosting in the area.
		Surface water	Altered surface flow dynamics due to alterations in the onsite topography and increase of siltation in the streams and rivers with the runoff carrying sediment.
		Air quality	Dust emissions due to wind erosion during tipping of soil onto trucks and stockpiles, and exposure of stockpiles to wind erosion, and increased dust generation.
		Noise	Increase of noise of hauling trucks to topsoil stockpile site.
Placement of a fence	A temporary perimeter fence will be constructed around the exploration site which will be limited to the demarcated area to protect operations and prevent people and domestic animals from harm.	Animal life	Limitation of movement for domestic animals to grazing areas. This will prevent movement of domestic animals to demarcated areas, preventing injury.
		Interested and Affected Parties	The temporary fence could prevent access to communal agricultural fields. The fence will also serve as a safety measure, preventing access to possibly hazardous areas.

Storage of fuel	Diesel fuel use for drilling will be determined and the storage capacity will not be triggered by the NEMA list of activities.	Soil	Soil contamination.
		Land capability	Decreased land capability due to contaminated soil.
		Natural vegetation	Damage to natural vegetation and loss due to hydrocarbon and chemicals spills.
		Animal life	Injury or loss of animals due to spillages of hydrocarbons, chemicals.
		Surface water	Contamination of surface water due to the spillage of hydrocarbons, chemicals or contaminated run- off sourced from contaminated soil.
		Groundwater	Groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals.
Use of hydrocarbons, chemicals	The use of hydrocarbons, chemicals will take place and these will be stored on site in designated storage areas.	Soil	Soil contamination.
		Land capability	Decreased land capability due to contaminated soil.
		Natural vegetation	Damage due to natural vegetation and loss due to hydrocarbon and chemical spills.
		Animal life	Injury or loss of animals due to spillages of hydrocarbons, chemicals.
		Surface water	Contamination of surface water due to the spillage of hydrocarbons, chemicals or contaminated run-off sourced from contaminated soil.
		Groundwater	Groundwater contamination due to the infiltration of surface water contaminated with spilled hydrocarbons, chemicals.
Access roads	Existing access roads will be used to access the site and transport equipment onto and off-site. If need be, they will be upgraded.	Soil	Upgrading of existing roads to processing plant may result in soil erosion and loss.
		Land capability	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads
		Natural vegetation	Decreased agricultural and grazing potential of surrounding land due to deposition of dust emitted by vehicle entrainment on haul roads. Site clearing and removal of topsoil could lead to soil erosion and soil loss.
		Surface water	Altered surface flow dynamics due to topsoil removal, topographical alterations and increased surface runoff from cleared areas. Surface water runoff overhaul roads will

			cause erosion and siltation of surface water resources. Surface water runoff contamination due to hydrocarbon spills from vehicles travelling on haul roads.
		Air quality	Dust pollution caused by construction vehicles
		Noise	Elevated noise levels due to continuous vehicular movement on haul roads.
		Interested and Affected Parties	Damage to roads could impact safety of people and animals.
Decommissioning and closure			
Rehabilitation	All areas disturbed will be rehabilitated to its original state with the waste rock and topsoil stockpiles. Roads should be ripped or ploughed and fertilised if necessary, to promote re-growth of vegetation.	Soil and vegetation	Positive impact as topsoil will be replaced to enhance vegetation growth.
		Animal life	Positive impact as vegetation will re-establish itself and the natural Fauna will gradually return to the rehabilitated sites.

17 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.
N/A			

18 SUMMARY OF BASIC 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 BASIC 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.
Soil study	<ul style="list-style-type: none"> • The proposed area is covered with freely drained structureless soils and Non soil land classes. • It is anticipated that the coal prospecting activities will not lead to severe loss of soils and degradation of agricultural potential. • The exploration geologist will be advised to drill and sample away from the waterbody on site. • The prospecting boreholes must be cased after drilling and properly rehabilitated by cap sealing the borehole after drilling. The core of coal on the drilled boreholes, should be cleared from the ground immediately after logging by a geologist, to prevent washing and leaching on the water resources during precipitation events. • Absorbent Spill kits will be made available near the drill rigs during drilling activities. 	X	Part A, BAR & EMPr, Section 9.1

<p>Hydrogeology Study</p>	<ul style="list-style-type: none"> • The area is made up of fractured aquifers, it is recommended that during drilling, a map with fracture zones should be used so that the drilling process does not interact with water in fracture zones. • Clearing of vast amount of vegetation should be avoided, this is to preserve infiltration. • Constant availability of waste bins; Compliance of National Environmental Management: Waste Management Act 59 of 2008. • Compliance of GN 704 4(b) and 7(a) and National Water Act 36 of 1998 (Chapter 3 – Part 4, Section 1 (a)(b). • No onsite vehicle or machinery repairs such as changing oil. • No onsite storage of oil, diesel, or petrol. • A 100 meters buffer should be followed to preserve the surface water resources as the area mostly depends on surface water. • It is recommended that a plan on how surface water will be managed as this area is of steep slope, meaning that there is likely to be leaching in the borehole if not properly rehabilitated. • It is recommended that during the drilling process, the team should use fracture zone map, to clearly point areas of fracture zones, this will help them not to drill at that point as it will contribute to groundwater contamination. • On the southern, western, and eastern direction, the contours are decreasing in value, which clearly shows that from the boundary of the study area, it is downhill, mitigation measures on how water will be managed on these areas should be clearly defined. • The area has presence of floodplains, which shows that there is occasional flooding, it is recommended that the phases of the project be scheduled during the time when there is little to no 	<p style="text-align: center;">X</p>	<p>Part A, BAR & EMPr, Section 9.1</p>
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	<p>rainfall (June- July), this is to protect the water resources and financial aspect of the prospecting company.</p> <ul style="list-style-type: none">• It is recommended that the drill rig operates while standing on a non-permeable material, to avoid spillages from entering the soil and eventually the water resources.• It is recommended that there should be monitoring boreholes and regular monitoring should be implemented.		
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19 ENVIRONMENTAL IMPACT STATEMENT

a) Summary of the key findings of the environmental impact assessment.

Key findings for the Basic Assessment

- The possible environmental impacts associated with the proposed prospecting are considered insignificant when mitigations are applied accordingly. A diamond core drill rig will be used for drilling.
- The main impacts are associated with the waterbodies particularly the perennial & non perennial rivers traversing the project area. The affected areas will be buffered to prevent any activities from taking place that may result in detrimental effects upon these denoted sensitive areas.
- The Ecological Support areas (ESAs) will be avoided

b) 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)

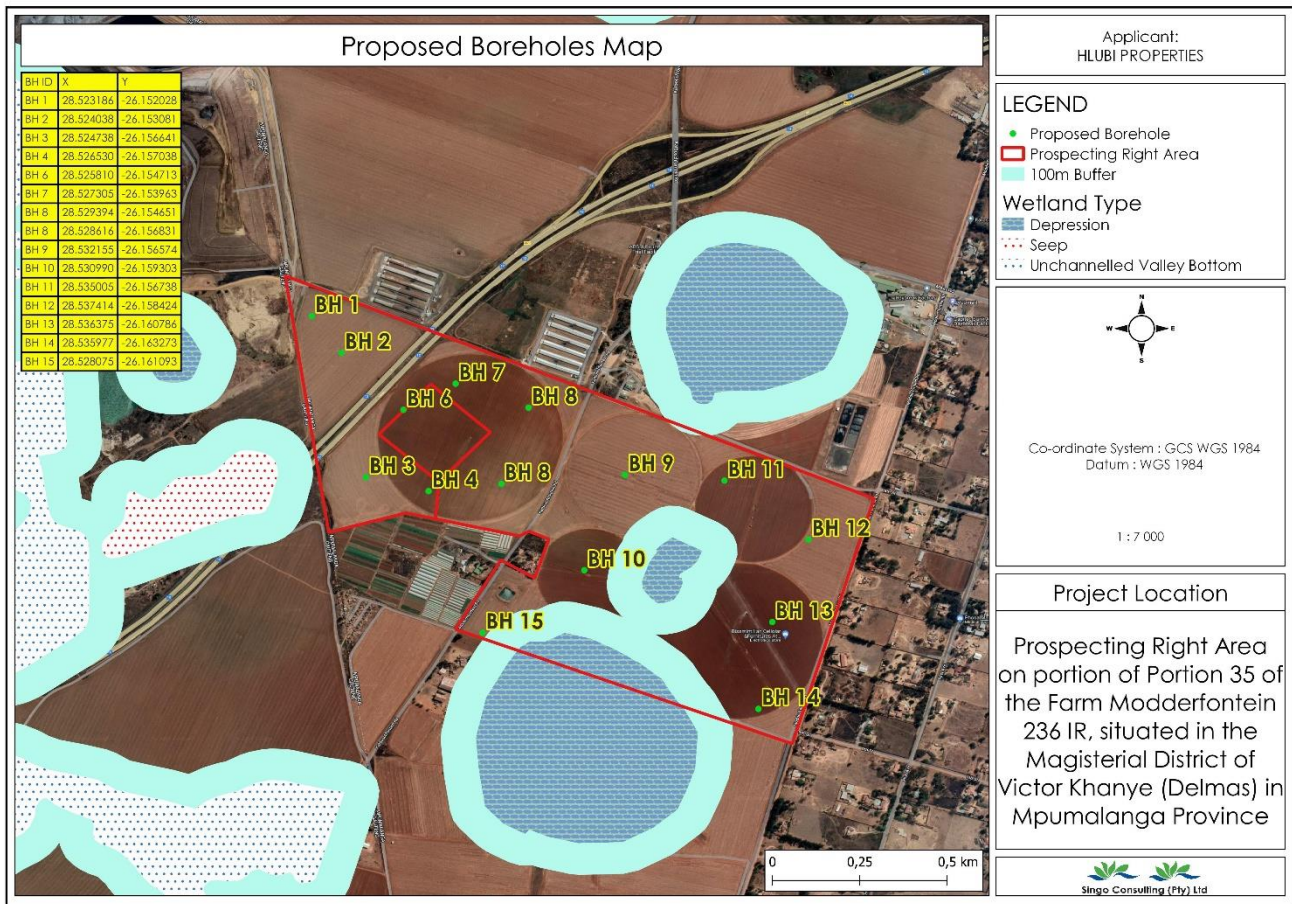


Figure 35: Proposed borehole map (Singo Consulting (Pty) Ltd, 2022)

c) SUMMARY OF THE POSITIVE AND NEGATIVE IMPACTS AND RISKS OF THE PROPOSED ACTIVITY AND IDENTIFIED ALTERNATIVES;

Table 28: Summary of positive and negative impacts

Negative	<p>No concerns in terms of community health as all possible traces of waste and ore will be disposed of appropriately during prospecting. The following negative impacts may occur:</p> <ul style="list-style-type: none"> Noise: State-of-the-art drilling equipment will be used to minimise noise. Drilling will be conducted during office hours to limit disturbance of nearby residences. Invasion of privacy: Land access agreements will be signed before prospecting commences. This will limit unnecessary invasion.
Positive	<ul style="list-style-type: none"> Discovery of an economically viable mineral resources Employment contributing to the economy Positive contribution to the South African Gross Domestic Product Concurrent rehabilitation during Prospecting Activities

20 PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPr;

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

✚ The objective of the EMPr include:

- Providing enough information for the prospecting activities to prevent and avoid unnecessary social and environmental impact.
- Providing a prospecting plan, guidance and guidelines to conduct prospecting with little to no impact on the environment.
- Reducing impacts by implementing realistic operational management measures like imposing restrictions on the time of day when drilling can take place.

✚ The desired outcomes of the aforementioned objectives include:

- Implementing a drilling programme that does not impact sensitive environmental feature
- Implementing a drilling programme with the consent of the landowner
- Ensuring that all temporary impacts are reduced.
- Rehabilitating the area after drilling to its original (or better) state.
- Reducing noise by operating during office hours and giving the nearby residence peace and quiet.
- Managing water and soil pollution through containment.
- Managing ecological degradation by implementing pollution prevention measures, minimising land clearing and restricting working hours.
- Identifying impacts to inform planning, execution and rehabilitation. During the planning phase, identifying of such impacts is vital to implement and mitigate during construction of the site office and accommodation, as well as during drilling, rehabilitation and closure.

✚ Impact management objectives

Soils: Prevent soil degradation by establishing effective rehabilitation measures.

Dust: Establish cost-effective measures like spraying of working areas to reduce dust.

Vegetation: Limit flora removal to the footprint area and mitigate against it as far as possible.

Animal life: Limit fauna removal to the footprint area and mitigate against it as far as possible.

Visual impacts: Limit the visual impact of the proposed activity and mitigate against it as far as possible.

21 ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

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

The following aspects are recommended to be included as conditions in the Environmental Authorisation:

- The EMPR is a contractual document and must be implemented at all times during the prospecting phase;
- An independent environmental control officer (ECO) must be appointed to monitor the implementation of the EMPR and audit reports to be kept by the applicant;
 - All contractors and employees of Hlubi Properties (Pty) Ltd must be made aware of the EMPR and its requirements as well as the impact of not implementing the measures of the EMPR;
- Copies of the EMPR, Integrated Environmental Authorisation and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

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

(Which relate to the assessment and mitigation measures proposed)

- All information provided to the environmental team, by the applicant and I&APs was correct and valid at the time that it was provided;
- The investigations undertaken by specialists during the BA process, indicate the development site as suitable and technically acceptable, except for the western portion, which is sensitive and recommended that prospecting not take place
- It is not always possible to involve all I&APs individually, however, every effort has been made to involve as many affected stakeholders as possible;
- The information provided by the applicant and specialists was accurate and unbiased; and

- The scope of this investigation is limited to assessing the environmental impacts associated with the prospecting activity.

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

a) Reasons why the activity should be authorised or not

In general, it is recognised that the proposed prospecting activities have the potential to pose various risks to the environment as well as to the residents or businesses in the surrounding area. However, based on the findings of this BA documented in this report, all impacts can be mitigated to insignificant levels.

This report shows that the proposed development has the potential to provide socio-economic benefits to the local and regional communities. The EAP therefore recommends that the proposed activities be approved on condition that the EMPr is strictly implemented and monitored for compliance and that the northern portions of the study area are excluded from prospecting.

Not implementing the prospecting activities will result in a loss of information on mineral reserves present on the study area. Should economically feasible reserves exist on the study area and the applicant cannot prospect, the opportunity to utilise the reserves for future mining and the minerals will be sterilised and resultant socio-economic benefits will be lost.

The proposed prospecting activities have the potential to have a negative impact on the ecological environment as well as the social environment of the area. These impacts, however, can potentially be prevented, minimised, mitigated and managed to low and very low levels, as shown through the impact assessment.

b) Conditions that must be included in the authorisation

- The EMPr is a contractual document and must be implemented at all times during the prospecting phase;
- An independent environmental control officer (ECO) must be appointed to monitor the implementation of the EMPr and audit reports to be kept by the applicant;
- All contractors and employees of Hlubi Properties (Pty) Ltd must be made aware of the EMPr and its requirements as well as the impact of not implementing the measures of the EMPr;

- Copies of the EMPr, Environmental Authorisation and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

24 PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

This Environmental Authorisation is required for a period of 5 years

25 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).

Please refer to the EMPr in Part B of this document.

26 FINANCIAL PROVISION

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

Table 29: Quantum Calculation

CALCULATION OF THE QUANTUM

Applicant: **HLUBI PROPERTIES**
 Evaluator: **BOITUMELO MOHOLOLA**

17275 PR
11-Jul-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	4622	49	0.02	1	4529.56
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
Sub Total 1							31554.4

1	Preliminary and General	3786.528	weighting factor 2	3786.528
			1	
2	Contingencies		3155.44	3155.44
Subtotal 2				38496.37
VAT (15%)				5774.46
Grand Total				44271

BOITUMELO MOHOLOLA
11-Jul-22

26.1 Explain how the aforesaid amount was derived

An amount of R44 271.00 is required to manage and rehabilitate the environment. The financial provision amount was calculated utilising the methodology as prescribed by the Guideline Documents for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine issued by the DMRE.

26.2 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).

Hlubi Properties (Pty) Ltd herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted. Work will be approved on a phase-by-phase basis, dependent on the results obtained in the previous phase i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified.

27 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

- a) **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: -**

27.1 Impact on the socio-economic conditions of any directly affected person

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

Potential impacts on landowners, land occupiers, communities or individuals or competing land uses in the area include:

- Potential soil pollution which may result from any hydrocarbon spills where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a chance of these breaking down and/or leaking;
- Contamination of stormwater runoff and groundwater, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.
- Visual impacts: Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.
- Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.
- Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.
- Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.
- Generation of additional general waste, litter and building rubble and hazardous waste.
- Minor impact caused by need for services i.e. water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.

- Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existing traffic.
- Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.
- Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.
- Increased risk to public and worker safety: If not fenced off, the public and workers may fall into excavated areas and trenches.
- Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.
- Multiplier effects on local economy will be positive, but very limited in extent and only short term.

Mitigation measures are included in this report, as well as the EMPR.

27.2 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).

Whilst there is no knowledge of heritage resources within the proposed prospecting area care will be taken to avoid any sensitive heritage resources that may otherwise be identified during Prospecting. Where graves or fossils are identified proposed boreholes will be moved to avoid features of this type. If fossils or graves are discovered, the relevant authorities will be immediately notified and drilling will be stopped in this area.

28 OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT

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

The proposed drilling activities requested as part of this authorization authorisation is the only current viable manner in which a mineral resource can be identified and used to generate a SAMREC and/or JORC- compliant resource which is a minimum requirement to determine whether it is viable to invest in a future mine.

PART B:

ENVIRONMENTAL MANAGEMENT PROGRAMME

29 DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

29.1 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).

Herewith, it is confirmed that the requirement for the provision of the details and expertise of the EAP are already included in PART A, Section 1 (a) of this report.

29.2 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).

Herewith, it is confirmed 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.

29.3 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 should be avoided, including buffers).

Refer to section 18 above

29.4 Description of Impact management objectives including management statements

29.4.1 Determination of closure objectives

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

The prospecting activities are dependent on the preceding phase (non-invasive). Prospecting is conducted in phases, where the activities and location of drilling are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot as yet be confirmed. Mapping of prospecting activities can also not be conducted.

The closure objectives include:

- Ensure that there are no safety risks associated with the drill boreholes through drill hole capping and backfilling;
- Rehabilitate any pollution that occurred through hazardous spills or waste materials and remove the source of the pollution;
- Establish an area that is not susceptible to soil erosion;
- Re-vegetate disturbed areas with endemic plant species that occur naturally within the area.

29.4.2 Volumes and rate of water use required for the operation

A total of 1000L of water will be used per day on maximum drilling production day and a total of approximately R20 000 L will be used for all the proposed 10 boreholes.

29.4.3 Has a water use licence been applied for?

No Water Use Licence has been applied for, since no water extraction and diversion will be done from any water source. All water used on site will be transported to site by a water tank for the sole purpose of this project. This water will be bought from the municipality or licenced water supplier that sells potable water or treated industrial water for which a water sale agreement will be provided before work commences and is submitted to the DMRE.

29.5 Impacts to be mitigated in their respective phases

Table 30: Impacts to be mitigated

Activities	Phase	Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Site clearance	Construction Operation	0.9 ha, short term and localized	<ul style="list-style-type: none"> • Demarcation of sensitive areas in consultation with relevant specialists and ECO; • Utilise local labour if possible; • Minimise removal of vegetation as far as possible; • Identification and relocation of protected species by a qualified ecologist (and application or the relevant biodiversity permits where required); • Minimize dust generation; • Limit vehicle access; • Implement alien vegetation management; • Ongoing identification of risks and impacts; • Emergency preparedness; • Monitoring and review; and • Avoid disturbance of fauna as much as possible, especially bird nesting sites. 	NEMA MPRDA NEMBA NEMAQA Dust regulations NWA DWAF Best Practice Guidelines	Throughout Construction and operation

Site access	Construction Operation	113.417 ha, short term and localized	<ul style="list-style-type: none"> All employees and visitors to the site must undergo a site induction which shall include basic environmental awareness and site-specific environmental requirements (e.g. site sensitivities and relevant protocols/procedures). This induction should be presented or otherwise facilitated by the Contractors EO/Mine EO wherever possible. Landowners/lawful occupiers must be notified prior to accessing properties. A date and time that is suitable to landowners/lawful occupiers and is reasonable to the applicant should be negotiated and agreed upon. The number, identity of workers, work location and work to be done must be provided to the landowner/lawful occupier prior to going on site. Consideration must be taken by the applicant and/or contractors when on site not to interfere with the existing land uses and practices. 	NEMA OHS & MHSA	Throughout Construction and operation
Establishment of site infrastructure	Construction	short term and localized	<ul style="list-style-type: none"> Minimise physical footprint of construction; Ensure construction is consistent with occupational health and safety requirements; Minimise vegetation clearance; Ensure proper and adequate drainage; Minimise waste and control waste disposal; Fencing of all drill sites with security access control and warning signs; Establish waste storage areas for recycling; Ensure adequate containment of waste to prevent pollution; Minimise dust generation; Limit vehicle access to approved access roads; Prepare contingency plans for spillage 	NEMA MPRDA NEMBA NEMAQA Dust regulations NWA DWAFF Best Practice Guidelines NHRA	Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Storage of construction vehicles	Construction and Operation	short term and localized	<ul style="list-style-type: none"> Any equipment that may leak, and does not have to be transported regularly, must be placed on watertight drip trays to catch any potential spillages of pollutants. The drip trays must be of a size that the equipment can be placed inside it; Drip trays must be cleaned regularly and shall not be allowed to overflow. All spilled hazardous substances must be collected and adequately disposed of at a suitably licensed facility; and Compacting of soil must be avoided as far as possible, and the use of heavy machinery must be restricted in areas outside of the proposed exploration sites to reduce the compaction of soils. 	NWA DWAF BPG	Throughout Construction and operation
Transportation/ access to and from drill sites	Construction and Operation	short term and localized	<ul style="list-style-type: none"> Where possible, drill sites should be located along existing access roads to reduce the requirement for additional access roads; Any new temporary access routes to a drill site should result in minimal disturbance to existing vegetation; Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowners special conditions which would form a legally binding agreement; 	NEMA NEMBA CARA NEMAQA Dust Regulations Road Traffic Act	Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<ul style="list-style-type: none"> • All farm gates must be closed immediately upon entry/exit; • Under no circumstances may the contractor damage any farm gates, fences, etc.; • On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic (where relevant); • All construction and vehicles using public roads must be in a roadworthy condition and their loads secured. They must adhere to the speed limits and all local, provincial and national regulations with regards to road safety and transport; • Damage caused to public roads as a result of the construction activities must be repaired in consultation with the relevant municipal authorities; and • All measures should be implemented to minimize the potential of dust generation. 		
Storage of hazardous substances	Construction and Operation	short term and localized	<p>All hazardous substances (e.g. fuel, grease, oil, brake fluid, hydraulic fluid) must be handled, stored and disposed of in a safe and responsible manner so as to prevent pollution of the environment or harm to people or animals. Appropriate measures must be implemented to prevent spillage and appropriate steps must be taken to prevent pollution in the event of a spill; and way that does not pose any danger of pollution even during times of high rainfall.</p>	<p>NWA NEMWA DWAF BPG NEMA</p>	Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Prospecting boreholes: 15 sites ,with a footprint of 600 m² each	Construction and Operation Decommissioning	0,9 ha, short term	<ul style="list-style-type: none"> • Vegetation clearing for prospecting sites should be kept to a minimum in order to reduce the disturbance footprint; • Compaction of soil must be avoided as far as possible, and the use of heavy machinery must be restricted in areas outside of the proposed prospecting sites to reduce the compaction of soils; • All measures should be implemented to minimize the potential of dust generation; • Noise attenuation on engines must be adequate, and the noisy activities must be restricted as far as is possible to times and locations whereby the potential for noise nuisance is reduced; • When working near to a potential sensitive area, the contractor must limit the number of simultaneous activities to the minimum; • Ensure proper storage of fuels; • On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic; • Workforce should be kept within defined boundaries and to agreed access routes. • No invasive prospecting activities to be undertaken within 100m of a watercourse. • Should any watercourse be affected, then the necessary water use licences should be 	SANS 10103 ECA Noise Regulations NEMAQA Dust Regulations NWA	Throughout Construction and operation and decommissioning

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<ul style="list-style-type: none"> obtained from the Department of Water and Sanitation. No ablution of site laydown areas is to be located within 100m of a watercourse. Where drinking water/ livestock watering boreholes are to be affected, and where a pollution event occurs at a particular borehole, then the advice of a geohydrologist should be sought with regards to the need for plugging and casing of the prospecting boreholes. 		
Prospecting	Construction and Operation	0,9 ha, short term	Workers must be easily identifiable by clothing and ID badges. Workers should carry with them, at all times a letter from the applicant stating their employment, title, role and manager contact details.	OHS and MHSA	Throughout Construction and operation
Resource definition drilling	Planning Phase Construction and Operation	short term	Local residents (landowners and directly adjacent landowners) should be notified of any potentially noisy activities or work and these activities should be undertaken at reasonable times of the day. This work should not take place at night or on weekends;	MPRDA Regulations GN R527 SANS 10103	Planning Phase Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<ul style="list-style-type: none"> • The contractor must attempt to restrict noisy activities as far as is possible to times and locations whereby the potential for noise nuisance is reduced; • Dust suppression methods must be applied when necessary to restrict the visual impact of dust emissions. • Any spills of hydrocarbons or fluids used during operation, must be cleaned up immediately; • An above ground drilling sump must be used to contain drilling mud in order to reduce surface and groundwater contamination. No earthen mud sumps are to be constructed and utilized; • No prospecting boreholes should be drilled in the immediate vicinity of existing private boreholes; • Soils in drilling areas where disturbances will be encountered must be stripped and stockpiled outside affected areas for use after completion of the drilling program. • Topsoil must be adequately stripped to the correct depth and stored separately from subsoils; • A liner should be placed over the drill pad and drip trays must be used in all areas where hydrocarbons are handled; • On-site vehicles must be limited to approved access routes and areas on the site so as to 	ECA Noise Regulations NEMAQA Dust Regulations NWA DWAF BPG NHRA	

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<ul style="list-style-type: none"> • recording, sampling or collection) can be taken by a professional palaeontologist. • The Final BAR and appendices must be submitted to SAHRA for record purposes; • If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit, must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA; and • If the development receives an Environmental Authorisation (EA), SAHRA must be informed and all documents pertaining to the EA must be uploaded to the SAHRIS Case file. 		

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Refuelling	Construction and Operation	Short term and localized	<ul style="list-style-type: none"> • Refuelling may only take place within demarcated areas that is subject to appropriate spill prevention and containment measures refuelling and transfer of hazardous chemicals and other potentially hazardous substances must be carried out so as to minimize the potential for leakage and to prevent spillage onto the soil; • Drip trays should be utilized in relevant locations during transfer so as to prevent such spillage or leakage. Any accidental spillages must be contained and cleaned up promptly. 	NWA DWAF BPG	Throughout Construction and operation
Maintenance and repair	Construction and Operation	Short term and localized	<ul style="list-style-type: none"> • Trucks, machinery and equipment must be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. All leaks must be cleaned up immediately using spill kits or as per the emergency response plan. For large spills a hazardous materials specialist shall be utilized; • Accidental hydrocarbon spillages must be reported immediately, and the affected soil should be removed, and rehabilitated or if this is not possible, disposed of at a suitably licenced waste disposal facility. 	NWA DWAF BPG NEMA	Throughout Construction and operation
Borehole Closure	Decommissioning and Closure	Short term and localized	<ul style="list-style-type: none"> • Where groundwater is encountered during drilling, all affected prospecting boreholes that will not be required for later monitoring or other useful purposes should be plugged and sealed with cement to prevent possible cross flow and contamination between aquifers; • Cement and liquid concrete are hazardous to the natural environment on account of the 	NWA DWAF BPG	Throughout Decommissioning and Closure

			very high pH of the material, chemicals contained.		
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Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>therein. As a result, the contractor shall ensure that:</p> <ul style="list-style-type: none"> • Concrete shall not be mixed directly on the ground; • The visible remains of concrete, either solid, or from washings, shall be physically removed immediately and disposed of as waste, (Washing of visible signs into the ground is not acceptable); and • All excess aggregate shall also be removed. 		
Removal of surface infrastructure	Decommissioning	Short term and localized	<ul style="list-style-type: none"> • All infrastructure, equipment, and other items used during prospecting will be removed from the site. • Compaction of soil must be avoided as far as possible. The use of heavy machinery must be restricted in areas outside of the proposed prospecting sites to reduce the compaction of soils. 	MPRDA Rehab Plan	Decommissioning
Removal of waste	Decommissioning	Small scale and localized	<ul style="list-style-type: none"> • Any excess or waste material or chemicals, including drilling muds etc. must be removed from the site and must preferably be recycled (e.g. oil and other hydrocarbon waste products). Any waste materials or chemicals that cannot be recycled must be disposed of at a suitably licensed waste facility. 	NWA DWAF BPG	Decommissioning

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Rehabilitation	Rehabilitation	All disturbed areas	<ul style="list-style-type: none"> Restoration and rehabilitation of disturbed areas must be implemented as soon as prospecting activities are completed; Sites must be restored to the original condition with vegetation cover (where applicable) equalling the surrounding vegetation cover; All debris and contaminated soils must be removed and suitably disposed of; Contours and natural surrounding must be reformed; Natural drainage patterns must be restored; All surface infrastructure on site must be removed; Temporary access routes/roads must be suitably rehabilitated; and Sites must be monitored by the ECO (including relevant specialist's inputs if, necessary) for adequate rehabilitation until the desired rehabilitation objectives have been achieved. 	MPRDA Rehab Plan NEMA	Rehabilitation
Consultation	Planning Phase Construction and Operation	Medium term, local	<ul style="list-style-type: none"> Stakeholder engagement will continue throughout the prospecting activities to ensure the community and landowners are kept informed and allowed to raise issues. 	NEMA OHS and MHSA	Planning Phase Throughout Construction and Operation

Monitoring	Post-Operational	All rehabilitated areas	<p>The post-operational monitoring and management period following decommissioning of prospecting activities must be implemented by a suitable qualified independent party for a minimum of one (1) year unless otherwise specified by the competent authority.</p> <p>The monitoring activities during this period will include but not be limited to:</p> <ul style="list-style-type: none"> • Biodiversity monitoring; and • Re-vegetation of disturbed areas where required. <p>Provision must be made to monitor any unforeseen impact that may arise as a result of the proposed prospecting activities and incorporated into post closure monitoring and management.</p>	MPRDA Rehab Plan	Post-operation
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Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Site clearance	<ul style="list-style-type: none"> • Deterioration and damage to existing access roads and tracks; • Dust generation; • Clearance of vegetation; • Invasion by alien species; • Sedimentation • Erosion 	Topography; Soil; Air Quality; Surface Water; Groundwater; Transportation	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA NEMBA CARA Threatened or Protected Species (TOPS) regulations NEMAQA Dust regulations NWA DWAF best Practice Guidelines

29.6 IMPACT MANAGEMENT ACTIONS AND OUTCOMES

Table 31: Summary of impact management actions and outcomes

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Establishment of base camps and access	<ul style="list-style-type: none"> • Interference with existing land uses • Safety and security risks to landowners and lawful occupiers; • Deterioration and damage to existing access roads and tracks; • Dust generation; • Clearance of vegetation; • Pollution of soils • Contamination on surface and ground 	<p>Topography;</p> <p>Landform;</p> <p>Soil disturbance;</p> <p>Fauna and</p> <p>Flora;</p> <p>Air Quality;</p> <p>Surface Water;</p> <p>Groundwater;</p> <p>Socioeconomics</p>	<p>Construction</p> <p>Operation</p>	<p>Avoidance and control through preventative measures (e.g. communication with landowners, site access control)</p> <p>Remedy through application of mitigation measures in EMP</p>	<p>NEMA</p> <p>MPRDA</p> <p>NEMBA</p> <p>CARA</p> <p>Threatened or Protected</p> <p>Species (TOPS) regulations</p> <p>NEMAQA</p> <p>Dust regulations</p> <p>NWA</p> <p>DWAF best Practice</p> <p>Guidelines</p>

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Storage of construction vehicles	<ul style="list-style-type: none"> • Pollution of surface and groundwater resources from potential hydrocarbon spills; and • Compaction of soils 	Surface water; Groundwater; Soils.	Construction Operation	Avoid through implementation of EMP mitigation measures (e.g. communication with landowners) Control through implementation of ESMS	Protected Species (TOPS) regulations NEMAQA Dust regulations NWA DWAf best Practice Guidelines
Transportation to and from drill sites	<ul style="list-style-type: none"> • Soil compaction; • Disturbance and loss of fauna and flora, Wearing and tearing of existing roads and Dust generation from increased traffic. 	Soil disturbance; Fauna and Flora; Air quality.	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA NEMBA CARA Threatened or Protected Species (TOPS) regulations NEMAQA

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Storage of hazardous substances	Potential hydrocarbon spills that could pollute surface and ground water resources.	Surface water; Groundwater.	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA NEMBA NWA DWAFA best Practice Guidelines
Waste management	Pollution of habitats and surrounding areas.	Pollution	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	DWAFA minimum requirement for waste disposal

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Prospecting boreholes	<ul style="list-style-type: none"> • Vegetation clearance; • Possible erosion; • Changes in drainage and surface hydrology; • Soil disturbance and compaction; • Emissions from vehicles; • Land use conflict; • Noise disturbance due to acoustic sources; • Dust generation; • Disturbance or damage of palaeontological resources; • Potential spills of hydrocarbons; • Influx of people; • Impact on groundwater 	Ecology; Topography; Access/footprint; Soil disturbance; Noise; Air Quality; Socio-economics; Groundwater	Construction Operation Decommissioning	Control through implementation of EMPR mitigation measures	SANS10103 ECA Noise Regulations NEMAQA Dust regulations NWA
Resource definition drilling	<ul style="list-style-type: none"> • Vegetation clearance • Removal of topsoil; • Changes in drainage and surface hydrology; • Drainage and soil contamination; • Land use conflict; • Dust generation; 	Air Quality; Noise; Surface water; Groundwater,	Operation	Control through implementation of EMPR mitigation measures	SANS10103 ECA Noise Regulations NEMAQA Dust regulations

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved	
	<ul style="list-style-type: none"> • Disturbance of wildlife and communities in close vicinity; • New access roads; • Increased transportation; • Damage to local infrastructures; • Disturbance or damage of palaeontological resources; • Influx of people; • Waste water discharge; • Spillage and leaks of hydrocarbons; Pollution or interplay between groundwater aquifers; Waste disposal. 				NWA DWAF best Practice Guidelines	
Refuelling	Potential hydrocarbon spills that could pollute soil or surface and/or groundwater resources.	Pollution; Surface water; Groundwater	Construction Operation	Control through implementation of EMPr mitigation measures	NWA DWAF best Practice Guidelines	
Maintenance and repair	Potential hydrocarbon spills that could pollute surface and groundwater resources.	Pollution; Surface water; Groundwater	Construction Operation	Control through implementation of EMPr mitigation measures	NWA	

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Borehole closure	<ul style="list-style-type: none"> • Pollution of groundwater resources; • Potential pollution of habitats with cement residue that may be exposed to runoff etc. 	Pollution; Groundwater	Decommissioning	Control through implementation of EMPr mitigation measures	NWA
Removal of surface infrastructure	<ul style="list-style-type: none"> • Soil compaction; • Pollution of soil and surrounding vegetation. 	Landform; Topography; Soils.	Decommissioning	Control through implementation of EMPr mitigation measures	MPRDA In accordance with Rehab plan
Rehabilitation	<ul style="list-style-type: none"> • Soil compaction; • Soil and Water contamination; • Erosion; • Change in drainage and surface hydrology; • Loss of habitat; and • Disturbance to wildlife and communities in close vicinity 	Topography Land use Soil disturbance Ecology Surface water Groundwater	Rehabilitation	Control through implementation of EMPr mitigation measures	MPRDA In accordance with Rehabilitation plan
Monitoring of rehabilitated sites	<ul style="list-style-type: none"> • Soil compaction; • Soil and Water contamination; • Erosion; • Disturbance to wildlife; and communities in close vicinity. 	Topography Land use Soil disturbance Ecology Surface water Groundwater	Post-operation	Control through adhering to monitoring requirements	MPRDA and regulations

30 FINANCIAL PROVISION

Determination of the amount of Financial Provision

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

The closure objectives include:

- Ensure that there are no safety risks associated with the drill boreholes through drill hole capping and backfilling;
- Rehabilitate any pollution that occurred through hazardous spills or waste materials and remove the source of the pollution;
- Establish an area that is not susceptible to soil erosion;
- Re-vegetate disturbed areas with endemic plant species that occur naturally within the area.

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

This Basic Assessment Report and Environmental Management Programme will be subjected to a public consultation period, whereby I&APs are given 30 days to comment.

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

The prospecting activities are dependent on the preceding phase (non-invasive). Prospecting is conducted in phases, where the activities and location of drilling are dependent on the previous phase. Therefore, the specific locations remains proposed. Mapping of prospecting activities can also not be conducted.

Due to the small extent and fairly short-term period of the prospecting activities and as shown in the Environmental Impact Assessment, the impacts will be of a

low or very low significance. Rehabilitation will be conducted progressively and will include borehole capping and re-vegetation.

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

Due to the small extent and fairly short-term period of the prospecting activities and as shown in the Environmental Impact Assessment, the impacts will be of a low or very low significance. Rehabilitation will be conducted progressively and will include borehole capping and re-vegetation. Detailed mitigation measures are provided in the EMPR to ensure the closure objectives are met.

30.4 Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline

CALCULATION OF THE QUANTUM

Applicant: **HLUBI PROPERTIES**
 Evaluator: **BOITUMELO MOHOLOLA**

17275 PR
 11-Jul-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	4622	49	0.02	1	4529.56
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
Sub Total 1							31554.4
1	Preliminary and General		3786.528		weighting factor 2		3786.528
2	Contingencies				1		3155.44
Subtotal 2							38496.37
BOITUMELO MOHOLOLA							
11-Jul-22							
VAT (15%)							5774.46
Grand Total							44271

30.5 Confirm that the financial provision will be provided as determined.

Hlubi Properties (Pty) Ltd herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted. Work will be approved on a phase-by-phase basis, dependent on the results obtained in the previous phase i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified.

31 MECHANISMS FOR MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREON, INCLUDING H) MONITORING OF IMPACT MANAGEMENT ACTIONS

- Monitoring of Impact Management Actions
- Monitoring and reporting frequency
- Responsible persons
- Time period for implementing impact management actions
- Mechanism for monitoring compliance

Source activity	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities For the execution of the monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
Desktop studies	N/A	N/A	N/A	N/A
Geophysics	N/A	N/A	N/A	N/A
Mapping	N/A	N/A	N/A	N/A
Site establishment and drilling	Visual impact	All areas exposed will be monitored for erosion	Project Manager	Weekly and after heavy winds and rain
	Dust generated	All areas exposed will be monitored for erosion	Project Manager	Weekly and after heavy winds and rain
	Noise	All areas where machinery will be operating	Operators and Project Manager	Daily
	Water and environmental pollution	All areas of operation	Operators and Project Manager	Daily
Post closure and rehabilitation	Rehabilitated areas	All rehabilitated areas	Environmentalist	Weekly, monthly and after heavy rain

32 INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT REPORT.

A Performance Assessment Review of the EMPr should be conducted annually and the environmental audit report will be submitted annually.

33 ENVIRONMENTAL AWARENESS PLAN

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

The environmental awareness plan will include the following:

- Induction of all staff and workers;
- Monthly 'toolbox' talks (awareness talks);
- Risk assessments for specific tasks with supervisors and staff involved in the task on a daily basis, or as often as the task is taking place.

The following principles and training will apply to the Environmental Awareness Plan (safety, health and environmental (SHE) training and the Environmental Management System (EMS) training):

- All personnel, including contactors, will as a minimum undergo general SHE induction and awareness training;
- The Safety, Health, Environmental and Quality (SHEQ) Manager will identify the SHE training requirements for all personnel and contractors. The training requirements will be recorded in a training needs matrix indicating particular training that must be undertaken by identified personnel and contractors. The training matrix will be administered by the Training Department; and Development of the Training Programme, which will include:
 - Job specific training – training for personnel performing tasks which could cause potentially significant environmental impacts;
 - Assessment of extent to which personnel are equipped to manage environmental impacts;
 - Basic environmental training;

- EMS training;
- Comprehensive training – on emergency response, spill management, etc;
- Specialised skills;
- Training verification and record keeping; and
- Periodic re-assessment of training needs, with specific reference to new developments, newly identified issues and impacts and associated mitigation measures.

33.2 General Awareness Training

- The HR Manager, together with the SHEQ Manager, will be responsible for the development of, or facilitating the development of, the required general SHE induction and awareness training. A general environmental awareness training module will be developed and integrated into the general induction programme. The general awareness
- training must include the Environmental Policy, a description of the environmental impacts and aspects and the importance of conformance to requirements, general responsibilities of personnel and contractors with regard to the environmental requirements and a review of the emergency procedures and corrective actions; and
- A Training Practitioner will conduct the general awareness training. The training presenter will keep a record of the details of all persons attending general awareness training. Such attendance registers shall indicate the names of attendants and their organisations, the date and the type of training received.

33.3 Specific Environmental Training

- Specific environmental training will be in line with the requirements identified in the training matrix; and
- Personnel whose work tasks can impact on the environment will be made aware of the requirements of appropriate procedures/work instructions. The SHEQ Manager will communicate training requirements to responsible supervisors to ensure that personnel and contractors are trained accordingly.

33.4 Training Evaluation and Re-training

- Effectiveness of the environmental training will be reflected by the degree of conformance to EMPR requirements, the result of internal audits and the general environmental performance achieved;
- Incidents and non-conformances will be assessed through the Internal Incident Investigation and Reporting System, to determine the root cause, including the possible lack of awareness/training;
- Should it be evident that re-training is required, the SHEQ Manager will inform the managers of the need and take the appropriate actions;
- General awareness training of all personnel shall be repeated every year; and
- The re-induction shall take into consideration changes made in the EMPR, changes in legislation, current levels of environmental performance and areas of improvement.

33.5 Emergency Procedures

- Emergency procedures, as relevant to this project, shall be implemented;
- The SHEQ Manager shall define emergency reporting procedures for the project;
- All personnel shall be made aware of emergency reporting procedures and their responsibilities;
- Any spills will be cleaned up immediately in accordance with relevant legislation; and
- Telephone numbers of emergency services, including the local firefighting service, shall be conspicuously displayed.

34 MANNER IN WHICH RISKS WILL BE DEALT WITH IN ORDER TO AVOID POLLUTION OR THE DEGRADATION OF THE ENVIRONMENT

There are several ways to avoid and minimise pollution, including environmental awareness, training, dust suppression, buffer zones, hunting avoidance and veld fire prevention.

Environmental awareness and training	Drilling teams must be trained and any other person who will be based on-site or come to site for the prospecting project must be briefed and inducted on site regulations, especially with regard to health, safety and environmental aspects.
Dust suppression	During construction, preparation and drilling, dust suppression must be exercised on the roads, drill holes and areas being excavated. The right amount of water must be applied to get the desired results.
Buffer zone	Roads, railway lines, water ways, ponds, rivers and wetlands must be avoided to minimise negative impact. Establishing a minimum buffer zone of 100 m around such a feature will reduce pollution and destruction thereof.
Avoid hunting	Hunting of any animals on site will be strictly prohibited
Avoid veld fires	Veld fires will not be permitted, as they easily get out of control and can destroy vegetation, livestock and property.

35 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

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

No specific information has been required by the Competent Authority at this point in time.

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:

Singo Consulting (Pty) Ltd

Name of company:

Date: 22 July 2022

APPENDICES

Appendix 1: EAP CV and qualifications

Due to POPI act sensitive information will not be shared

Appendix 2: Background Information Document

BACKGROUND INFORMATION DOCUMENT	
PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR THE PURPOSE OF PROSPECTING FOR COAL ON PORTION OF PORTION 35 OF THE FARM MODDERFONTEIN 236 IR, SITUATED IN THE MAGISTERIAL DISTRICT OF DELMAS, MPUMALANGA PROVINCE.	<p>Prepared by:</p>  <p>Singo Consulting (Pty) Ltd</p> <p>Prepared for:</p>  <p>Hubli Properties (Pty) Ltd</p>
INTRODUCTION AND THE PURPOSE OF THIS DOCUMENT	<p>This Background Information Document therefore requests and invite I&APs to comment on the environmental, physical, social, and economic impacts associated with the proposed Prospecting Activities. Be assured that your comments are of great value as they ensure that relevant issues are taken into consideration.</p> <p>Attached at the end of this document is a registration form, kindly complete it and send it back to Ms Boitumelo Moholola through given means of communication also attached there.</p>
<p>Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Consultant by Hubli Properties (Pty) Ltd to conduct Environmental Impact Assessment (EIA), Compile Basic Assessment Report (BAR) & Environmental Management Programme report (EMPr) and to undertake Public Participation Process (PPP). This is done for processes of acquiring Environmental Authorization for the proposed Prospecting Right application for Coal on portion of Portion 35 of the Farm Modderfontein 236 IR, situated in the Magisterial District of Delmas, Mpumalanga Province with DMRE Ref: MP 30/5/1/1/2/17275 PR</p> <p>The Purpose of this Background Information Document (BID) is to provide a perfunctory description of the project in question and outline EIA processes through BAR & EMPr to be followed and contributions from Stakeholders, Interested and Affected Parties (I&APs) on the issues related to the project in question, allowing comments and concerns to be raised.</p> <p>Results of the EIA (BAR & EMPr), both negative and positive will be submitted and made available to the relevant Departments such as the Department of Mineral Resources & Energy and if requested, Environmental Affairs, Water and Sanitation, Landowners, and other interested stakeholders.</p>	PROJECT DESCRIPTION <p>Prospecting Right Application has been submitted for the Purpose of prospecting Coal on the property mentioned above. This Proposed Prospecting Area, as seen in figure 1 and figure 2 below is situated approximately 1.5 Km west of Delmas town and approximately 2.4 km west of Rietkol AH Settlements.</p> <p>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. Invasive are those activities which have footprint or cause harm (if not mitigated or managed properly) or those that have a physical impact on the environment, while non-invasive do not cause any harm or effects on the environment.</p>

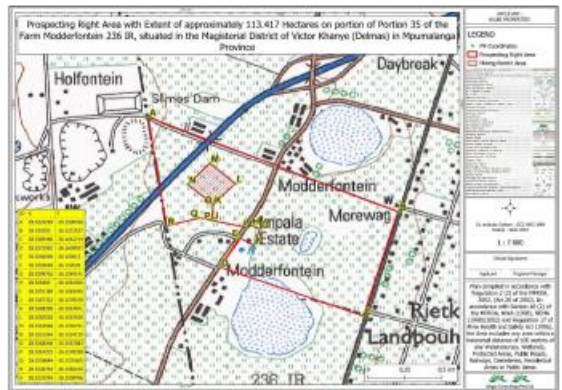


Figure 1: Regulation 2(2) Map of the Proposed Project Area

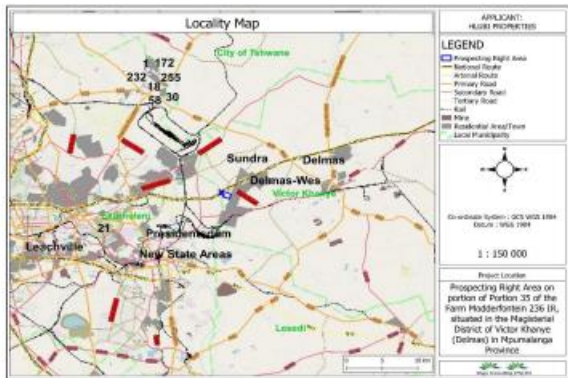


Figure 2: Locality map of the proposed project area

<p>Non-invasive: Desktop study of the area has commenced, and this incorporates desktop geographical and geological mapping. This will be followed by detailed geochemical and geotechnical surveys. In turn, this is followed by detailed geophysical studies.</p> <p>Invasive: A detailed drilling, sampling, assaying and mineralogical study will be carried out. Diamond method will be utilised to prospect in situ of Coal only. To ensure or minimise impacts on the receiving environment, All the activities will be guided by the project's BAR & EMP.</p> <p>REGULATORY FRAMEWORK</p> <p>Therefore, EIA (BAR & EMP) 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).</p> <p>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 36974: 2013).</p> <p>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.</p> <p>BASIC AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESSES</p> <p>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.</p>	<p>These tools are regarded crucial because they are utilized to demonstrate to the relevant stakeholders about the potential impacts, which in turn leads to the Prospecting application process being a success or declined.</p> <p>PUBLIC PARTICIPATION PROCESS</p> <p>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 (BAR & EMP) process.</p> <p>I&AP 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.</p> <p>For this specific proposed project, IAPs will be given a period of 30 days to comment and raise issues/concerns with regards to the proposed project.</p> <p>Kindly keep the following dates:</p> <ul style="list-style-type: none"> ❖ Stakeholder engagement and consultation; <u>On-going throughout the process of compiling the BAR & EMP</u> ❖ Review of draft Basic Assessment Report (BAR) and Environmental Management Programme report (EMP): <u>Sunday the 24th of July 2022 to Tuesday the 23rd of August 2022</u> <p>This report will be available at the Delmas Public Library (Cnr Sarel Cilliers & Van Riebeeck)</p> <p>Furthermore, the report will be available upon request, via email from the respective EAP.</p> <p>For comments or concerns about the proposed project, please contact Singo Consulting (Pty) Ltd, using the detailed EAP's contacts below</p>
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Office No: Office 870
 5 Balakaka Street
 Tasbet park, Ext 2
 Witbank, 1040
 Tel: +27 13 492 0041
 Cell: +27 71 1309 956
 Fax: +27 86 5144 103
 Email: boitumelo@singoconsulting.co.za
admin@singoconsulting.co.za

REGISTRATION & COMMENT SHEET-DMRE Ref: MP 30/5/1/1/2/17275 PR.

Attention: **Boitumelo Moholola**

Email: boitumelo@singoconsulting.co.za

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"/>
Please indicate why you would have an interest in the above-mentioned project.			
Please provide your comments and questions here:			
Please feel free to attach a separate document			
Please add any person you think may be interested and affected parties:			
Full name	Company		
Address			
E-mail	Contact No.		

Appendix 3: Screening Report