BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Prospecting right Application for Coal Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT situated within Mkhondo Local Municipality, Mpumalanga Province.

COMPLIED BY:	COMPLIED ON BEHALF OF:
Singo Consulting (Pty) Ltd **Physical Address:** Office No. 870, 5 Balalaika Street, Tasbet Park Ext 2, Witbank. **Tel No.:** +27 13 692 0041 **Fax No.:** +27 86 514 4103 **Email:** admin@singoconsulting.co.za	NOTRE Coal **Physical Address**: Plot 106, Road 4, Delmas, Gauteng, 2210 **Contact person**: Mr Eddi Aphane **Tel No**: +27 66 211 8714 **Email**: eddi@notrecom.co.za

DMRE REF: MP 30/5/1/1/2/17544 PR **2022**

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: Notre Coal (Pty) Ltd

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FILE REFERENCE NUMBER SAMRAD: MP 30/5/1/1/2/ (17554) PR

Disclaimer

The opinion expressed in this, and associated reports are based on the information provided by Notre Coal (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Notre Coal (Pty) Ltd. Since the client is the owner or lessor of the property, many of the advice and acts contained in this legally binding contract remain his or her duty.

Singo Consulting acts as an advisor to the Notre Coal (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. Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by Singo Consulting during the visit, visual observations, and any subsequent discussions with regulatory authorities. The data and information used in this report were provided to Singo Consulting by the client and also referred to other outside sources (includes historical site investigation information and third-party expert research).

Singo Consulting (Pty) Ltd ("Singo Consulting") takes reasonable care and diligence when providing services and preparing documents, but it has been assumed that the information provided to Singo Consulting (Pty) Ltd ("Singo Consulting") is accurate

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 prospecting "will not result in unacceptable pollution, ecological degradation or damage to the environment and an environmental authorization is issued".

Unless an Environmental Authorization 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 authorization 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 Authorization 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	
Project Title:	Prospecting Right Application of prospecting right for Coal on Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT
Minerals	Coal
Site Location	Magisterial District of Mkhondo, Mpumalanga Province
Compiled on behalf of	Notre Coal (Pty) Ltd
Compiled By	Ms Dineo Makhubela
Reviewed By	Dr Kenneth Singo
Version 1	Draft BAR & EMPR
Submitted to	Department of Mineral Resources and Energy
Date	2022

EXECUTIVE SUMMARY

Notre Coal (Pty) Ltd (the Applicant) has applied for a Prospecting Right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an Application for Environmental Authorization in terms of Chapter 6 of GNR 326 promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA) to prospect for coal resource.

The proposed project will aim to ascertain if economically viable mineral deposit exists within the applied area. To undertake prospecting activities, Notre Coal (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 (BAR) and Environmental Management Programme Report.

Singo Consulting (Pty) Ltd has been appointed by Notre Coal (Pty) Ltd to compile the BAR (this report) in support of the Prospecting Right application submitted by Notre Coal (Pty) Ltd, which in turn will be submitted to the DMRE for adjudication. This BAR has been designed to meet the requirements for a BAR and Environmental Management Programme report (EMPr) as stipulated in the 2014 EIA Regulations promulgated under the NEMA. The adjudicating authority for this Application will be the Department of Mineral Resources and Energy (DMRE), and this report has been compiled in accordance with the applicable DMRE guidelines and reporting template.

The project area is heavenly populated by plantations (Eucalyptus and Acacia Trees) and includes the wetland (Stream) and community of Annysspruit, which is located about 1.35 km away, and the Goedehoop residential homes, which are located about 314 m away from the proposed prospecting area. There are two coal mines namely Kiepersol Mine and Savmore Colliery that are situated approximately 4.76 km south-west and 4.21 km north-west respectively away from the proposed area which indicates the availability of the mineral applied for.

Locality Description: The proposed Prospecting Right Application covers portion 1 and a portion of the remaining extent of the farm Annysspruit 140 HT encircling a total of 767,811 Hectares. It is situated under the jurisdiction of the under the Magisterial District of Mkhondo. The project area is situated approximately 6.80 km southeast of Ngema Tribal Trust and 19.06 km east of Piet Retief Township. It can be accessed through a gravel road that extents from the R543 secondary road.

A Prospecting Work Programme (PWP) has been developed to include both non-invasive and invasive prospecting activities. The target geological formation of the PWP is the Karoo Supergroup, Dwyka Group and Ecca Group Group. The BAR (this report) will be made available to Interested and Affected Parties (I&AP's) for comment for 30 days period. All comments received during this period will be included in the final BAR & EMPr to be submitted to the DMRE for adjudication.

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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. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Singo Consulting (Pty) Ltd was appointed by Notre Coal (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 Environmental Technician

Name of the Practitioner	Dineo Makhubela
Designation	Environmental Technician
Tel No.	+27 13 692 0041
Cell No.	+27 78 380 0667
Fax No.	+27 86 515 4103
Email	dineo@singoconsulting.co.za

Table 2: Details of the EAP who reviewed the Report

Name of the Practitioner	NK Singo
Designation	Principal EAP
Tel No.	(013) 692 0041
Cell No.	+27 78 2727 839
Fax No.	+27 86 515 4103
Email	kenneth@singoconsulting.co.za

1.1. Qualifications of the EAP

National Diploma in Environmental Sciences

1.2. Qualifications of the Principal EAP

Bsc (Hons) Mining and Environmental Geology

MSc (Environmental Geology)

Summary of of the appointed consulting firm

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.

2. LOCALITY OF THE OVERALL ACTIVITY

Table 3: Location of the Overall Activity

<table>
<tr><td>Farm Name:</td><td>Annysspruit 140 HT</td></tr>
<tr><td>Application area (Ha)</td><td>767,811ha</td></tr>
<tr><td>Magisterial district:</td><td>Mkhondo</td></tr>
<tr><td>Distance and direction from nearest town</td><td>Situated approximately 6.80 km southeast of Ngema Tribal Trust and 19.06 km east of Piet Retief Township</td></tr>
<tr><td>21-digit Surveyor General Code for the Farm</td><td>T0HT00000000014000001
T0HT00000000014000000</td></tr>
<tr><td>Coordinates</td><td>
<table>
<tr><th>ID</th><th>X</th><th>Y</th></tr>
<tr><td>A</td><td>30.580089</td><td>-27.076457</td></tr>
<tr><td>B</td><td>30.607138</td><td>-27.083502</td></tr>
<tr><td>C</td><td>30.600599</td><td>-27.100127</td></tr>
<tr><td>D</td><td>30.598524</td><td>-27.099380</td></tr>
<tr><td>E</td><td>30.597459</td><td>-27.102225</td></tr>
<tr><td>F</td><td>30.599500</td><td>-27.102928</td></tr>
<tr><td>G</td><td>30.596271</td><td>-27.111154</td></tr>
<tr><td>H</td><td>30.589570</td><td>-27.108665</td></tr>
<tr><td>I</td><td>30.586959</td><td>-27.107408</td></tr>
<tr><td>J</td><td>30.585662</td><td>-27.106944</td></tr>
<tr><td>K</td><td>30.579843</td><td>-27.105251</td></tr>
</table>
</td></tr>
</table>

3. LOCALITY MAP

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

The proposed prospecting area is located on portion 1 and a portion of the remaining extent of the farm Annysspruit 140 HT, which falls within the Magisterial District of Mkhondo. The project area is situated approximately 6.80 km southeast of Ngema Tribal Trust and 19.06 km east of Piet Retief Township and It can be accessed through a gravel road that extents from the R543 secondary road see ***Figure 1*** and ***Figure 2*** below. Within the 15 km radius of the proposed prospecting area, there are two coal mines namely Kiepersol Mine and Savmore Colliery, located approximately 4.76 km south-west and 4.21 km north-west of the proposed area respectively, and also Heyshope Dam approximately 9.85 km north, Assegaairivier approximately 10.5 km northwest, Röhrs Farm Guesthouse approximately 5.99 km east and Bodenstadt Country Lodge approximately 12.2 km southeast of the proposed prospecting project.

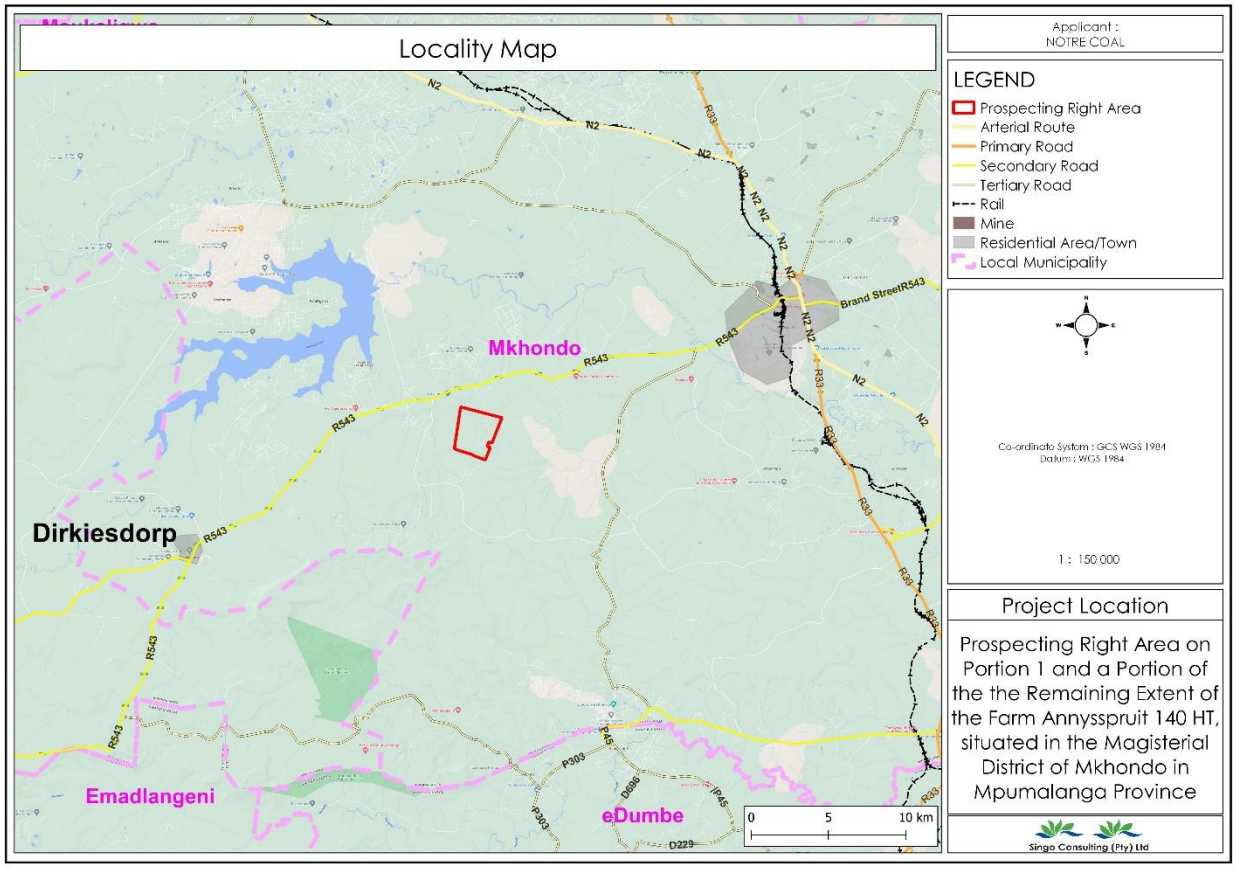


Figure 1: Locality of the project area. (Singo consulting (Pty) Ltd , 2022)

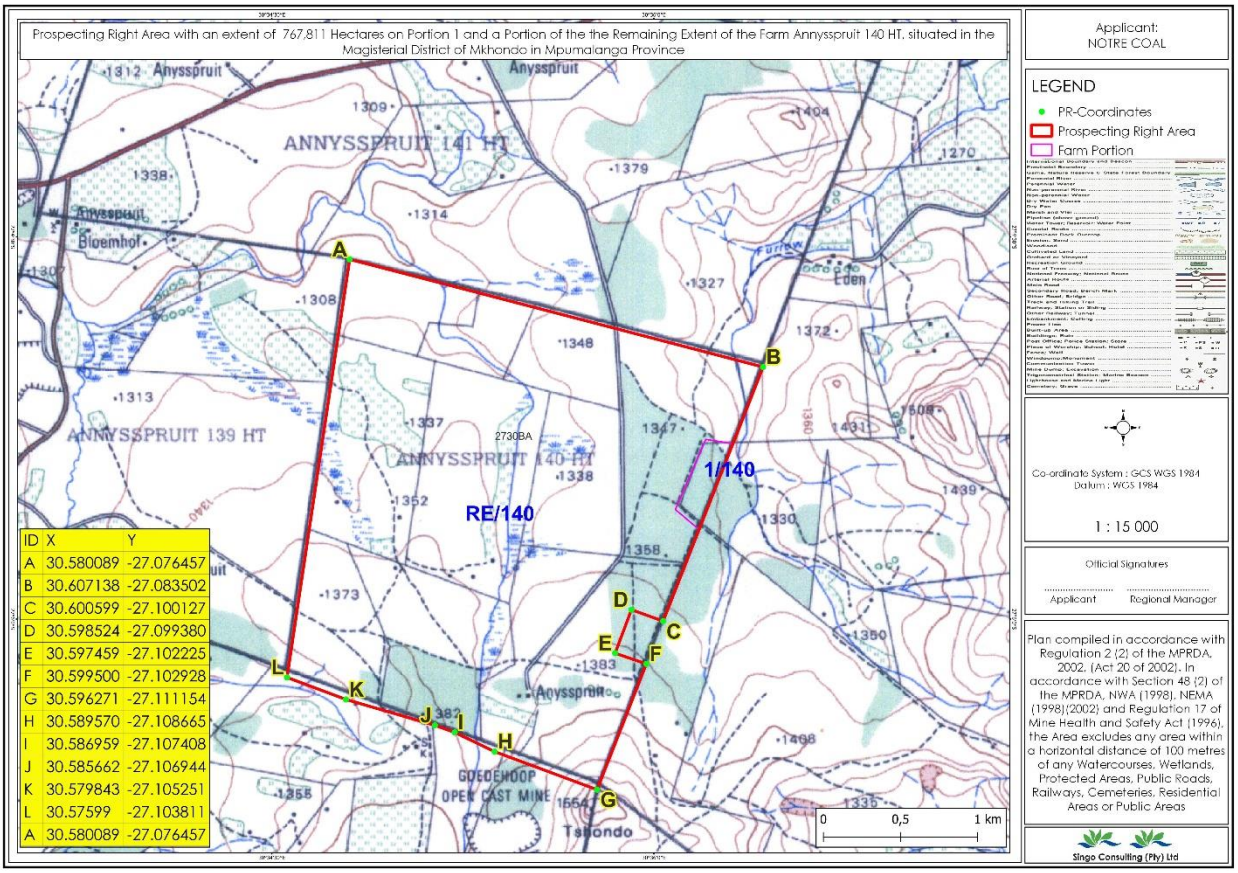


Figure 2: Regulation 2.2 plan of the project area. *(Singo consulting (Pty) Ltd , 2022)*

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.)

The typical layout of a drilling site seen on ***Figure 3*** will be employed for each setting of the planned boreholes within Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT.

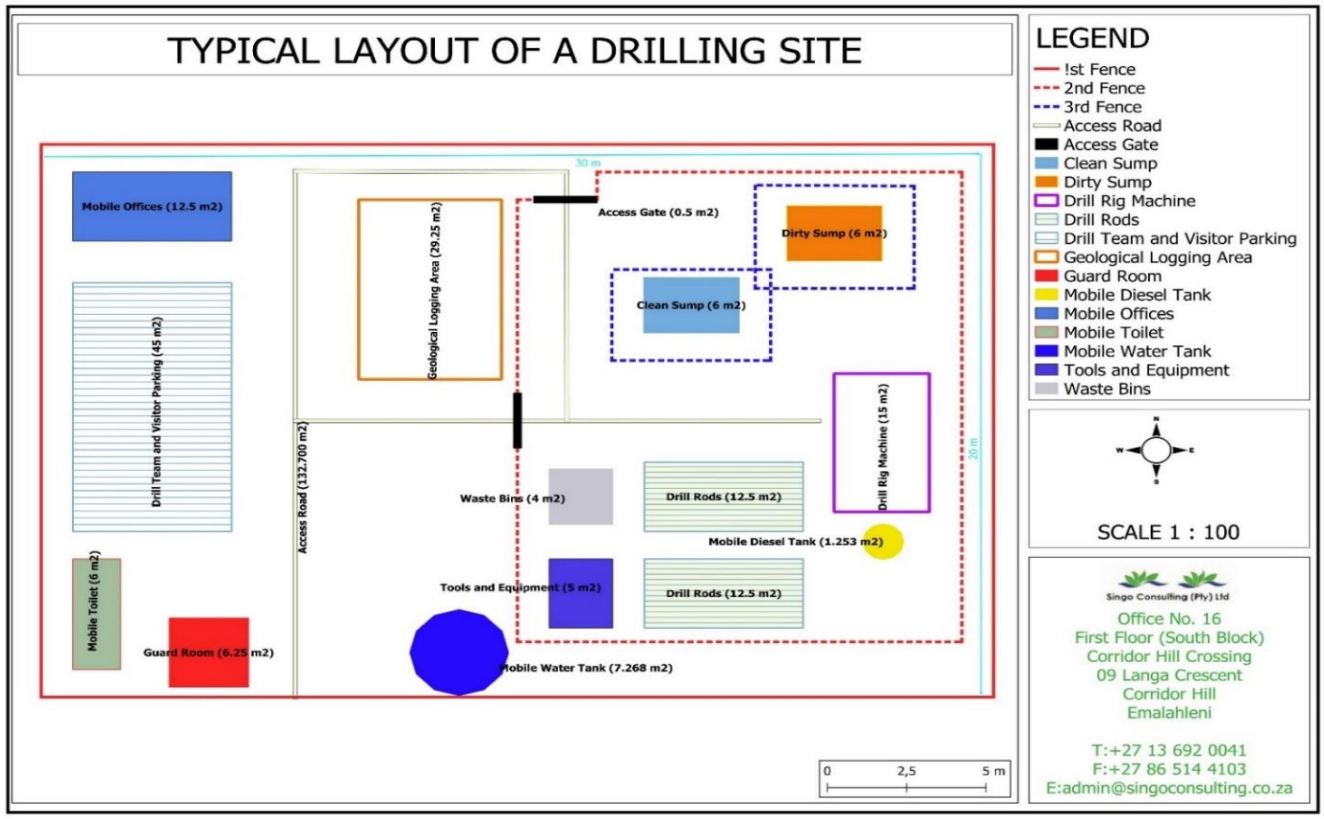


Figure 3: Typical layout plan of a drilling site (Singo Consulting (Pty) Ltd, 2022)

The typical layout plan of the drilling site will be proposed for all 15 boreholes seen on ***Figure 4*** below. The layout plan will be mobile, hence after a borehole has been drilled, the same layout plan will be installed for the next borehole.

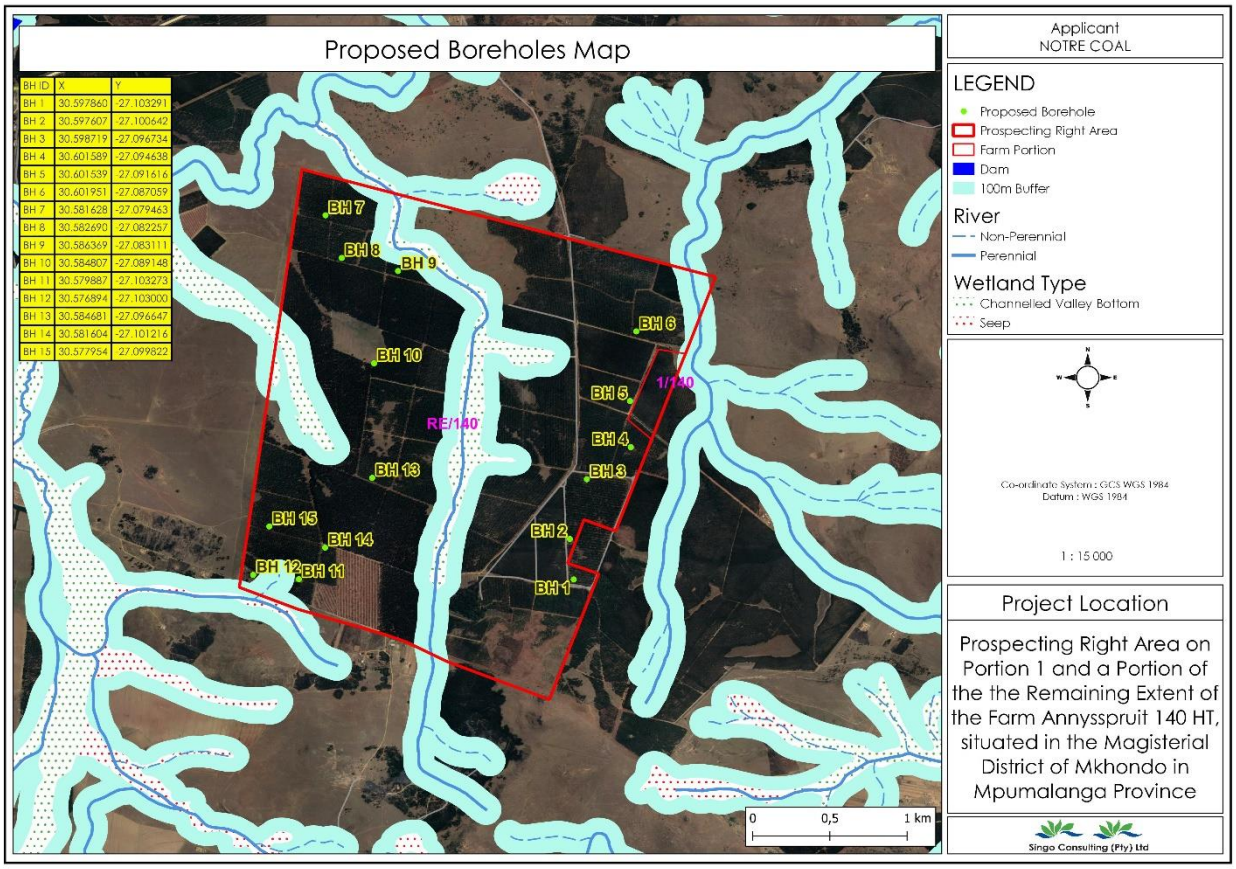


Figure 4: Proposed Borehole Map of the study area *(Singo consulting (Pty) Ltd , 2022)*

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.**	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY** **Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (GN 517, 11June 2021)**
Prospecting for the above-mentioned mineral by means of diamond drilling of 15 boreholes. Extent of application area	767,811 ha of the entire prospecting area (Disturbed area - 0.06 ha per hole x 15 boreholes = 0,9 ha)	X	GN 517 Listing Notice 1 Activity 20
Vegetation clearance for drilling programme that includes the drill site Invasive prospecting for the above-mentioned mineral by means of diamond drilling of 15 boreholes. The holes will be drilled to an average depth >110 m. The demarcated working area (total area to be disturbed) per site is 30 m x 20 m = 600 m² (0.06 Ha). Then 600 m² x 15 boreholes =9 000 m² Therefore, the total area to be disturbed is 9 000 m² /10 000 = 0,9 Ha	0,9 ha (Total Disturbed area) of 767,811 ha (Extent of application area)		N/A
Mobile office	12.5m²		N/A
Mobile toilet	6m²		N/A

Drill team and visitor team parking	45m^2		N/A
Access road	132.7m^2		N/A
Guard room	6.25m^2		N/A
Geological logging area	25.29m^2		N/A
Waste bins and tools	9m^2		N/A
Drill machine	15m^2		N/A
Drill rods	25m^2		N/A
Clean sump	6m^2		N/A
Dirty sump	6m^2		N/A
Mobile diesel tank	1.253m^2		N/A
Mobile water tank	7.268m^2		N/A

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	❖ $\mathbf{600m \times 15m = 9000\ m^2}$ ❖ $9000 \div \mathbf{10000 = 0.9\ ha}$ **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 Notre Coal (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. 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 act 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.

Prospecting work will initially entail a high-level desktop study and potential desktop resource evaluation. This will include a data search of any previous drilling, trenching, sampling activities, exploration activities, existing maps, and relevant historical data. On successful completion of this desktop study, further possible drilling, trenching and resource estimations will be performed if the results warrant it.

4.2.1 Description of the prospecting methods to be undertaken:

- Planned non-invasive activities:

Desktop studies to be undertaken over the area would include studying of geological reports, prospecting data, plans/maps, aerial photographs, topography maps and any other related geological information about this area.

- <u>Consultation with landowners:</u>

After placing site notices around and within the farm, the rightful landowner of Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT was able to contact the EAP and raise their concerns, and the owner was properly consulted regarding the proposed project.

- Data processing and validation:

Data obtained during the drilling process needs to be processed and validated versus stratigraphic, structural, and analytical data received and correlated with surrounding boreholes in the reserve area.

- Electronic procession of borehole data
- Validation of lithological data versus analytical data.
- Stratigraphic correlation of Coal.
- Editing and correction of data on database.

- Lithofacies and Coal ore quality modelling:

Variations in a stratigraphic unit across the reserve area are generated and illustrated by contoured maps showing lateral trends of most significant properties. This is done by the utilization of computerized geological software. Detailed in situ reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.

- Compilation of geology report:

Information obtained during the exploration phase together with computer generated information is compiled into a geological report.

- Planned invasive activities:
  - Diamond drilling:

The drill rigs are truck-mounted and equipped with diesel driven engines to provide power to the drill. A truck fitted with a water tank will be used to provide the water supply for the drilling process. The drill site is not larger than 20m x 30m (600m²) and consists of a drill rig, water pump, caravan, and portable chemical toilet. Except for the sump required by the drill rig, no excavations will be required. The sumps are normally 1 m2 and 50 cm (0.5 m) deep. It is always necessary to separate topsoil from the subsoils. The dimension of the borehole is NQ (±76 mm), and the average depth of the Coal reserve is estimated to be 100 m. On completion of the borehole, it is cemented from the bottom up. The only rehabilitation that will specifically be required is borehole capping and revegetation. Drill holes must be permanently capped as soon as is practicable.

- Pre-feasibility studies

The commodity thickness distribution, lateral extent and quality will be determined through detailed borehole measurement and laboratory core analysis. Detailed in situ reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.

A geological report (or Competent Person Report) will be compiled which entails all results obtained during the exploration phase. This will be done by the appointed Exploration Geologist.

4.2.2 Prospecting phase and time frames

The prospecting right is required for a period of five years. Prospecting will take place according to the timeframe presented in Table 5 below and incorporates the information required in respect of Regulations 7(1)(f), 7(1)(h) and 7(1)(i) of the MPRDA.

Table 5: Proposed prospecting phases and time frames

Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
Phase1: Invasive Prospecting						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 1 (30 days)	Borehole core data coal samples Rock core samples	Month 1	Exploration Geologist
	Sampling	Exploration Geologist		Core analyses Rock core analyses	Month 2 – 3	Laboratory analyst
Phase 1: Non-invasive Prospecting						
	Consultations with landowners	Land Tenure Specialist	Month 1	Legal Access Agreement	Month 1	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 7-8	Stratigraphic correct borehole data Analytical correct borehole data	Month 8 – 10 Month 8 - 10	Exploration Geologist /Database administrator Exploration Geologist /Database administrator

	Lithofacies and Coal quality modelling	**Exploration Geologist**	**Month 10-12**	**Contour maps Reserve breakdown**	**Month 10-12**	**Exploration Geologist /Modeller**
	Inspection/Consultation with landowners	**Land Tenure Specialist /Drilling contractor**	**Month 5-6**	**Rehabilitation clearance certificate**	**Month 5 - 6**	**Land Tenure Specialist / Environmental officer**
Phase 2: Invasive Prospecting						
	Diamond drilling (5 borehole)	**Exploration Geologist**	**Month 13**	**Borehole core data** **Coal core samples** **Rock core samples** **Core analyses** **Rock core analyses**	**Month 13** **Month 13-14**	**Exploration Geologist Laboratory analyst**
	Geophysical survey (Optional)	**Geophysicist Exploration Geologist**	**Month 13-15**	**Lithology data Structural data**	**Month 13-14**	**Geophysicist**
	Geohydrological survey (Optional)	**Geohydrologist Exploration Geologist**	**Month 13-14**	**Borehole water yield Water samples**	**Month 17-20**	**Geohydrologist**
Phase 2: Non-invasive Prospecting						
	Consultation with landowners	**Mining Rights officer**	**Month 12**	**Legal Access Agreement**	**Month 12**	**Land Tenure Specialist**
Phase	**Activity**	**Skill(s) required**	**Timeframe**	**Outcome**	**Timeframe for outcome**	**What technical expert will sign off on the outcome?**
	Data processing and validation	**Exploration Geologist**	**Month 17-18**	**Stratigraphic correct borehole data Analytical**	**Month 20 – 22**	**Exploration Geologist /Database**

				correct borehole data	Month 20 - 22	administrator Exploration Geologist /Database administrator
	Lithofacies and coal quality modelling	Exploration Geologist	Month 22-24	Contour maps Reserve breakdown	Month 22-24	Exploration Geologist /Modeler
	Inspection/Consultation with landowners	Mining Rights officer	Month 16-17	Rehabilitation clearance certificate	Month 16 - 17	Land Tenure Specialist / Environmental officer
Phase 3: Invasive Prospecting						
	Diamond drilling (5 borehole)	Exploration Geologist	Month 25	Borehole core data Coal core samples Rock core samples Coal core analyses Rock core analyses	Month 25 Month 25-60	Exploration Geologist Laboratory analyst
	Directional drilling (Optional)	Exploration Geologist	Month 24-30	Lithological data	Month 24-60	Exploration Geologist
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 25-27	Lithology data Structural data	Month 25-60	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 25-26	Borehole water yield Water samples	Month 29-60	Geohydrologist
Phase 3: Non-invasive Prospecting						
	Consultation with landowners	Mining Rights officer	Month 24	Legal agreement	Month 24	Land Tenure Specialist

	Data processing and validation	**Exploration Geologist**	**Month 29-30**	**Stratigraphic correct borehole data Analytical correct borehole data**	**Month 32 – 60** **Month 32 - 60**	**Exploration Geologist /Database administrator Exploration Geologist /Database administrator**
	Lithofacies and Coal	**Exploration Geologist**	**Month 34-36**	**Contour maps** **Reserve breakdown**	**Month 34-60**	**Exploration Geologist /Modeler**
	Inspection/consultation with landowners	**Land Tenure Specialist**	**Month 28-29**	**Rehabilitation clearance certificate**	**Month 28 - 60**	**Land Tenure Specialist / Environmental officer**

4.3 Ancillary activities

4.3.1 Access roads

Access to the proposed prospecting area is through a gravel road that extents from the R543 road, refer to ***Figure 5*** to see the access road to the site. There are pathways that exist within the project area which will be used to access the borehole locations. As a result, no new roads will be constructed.

Access road to the farm

Access road from the main road (R543) to the farm

Figure 5: Access roads. (Singo consulting (Pty) Ltd , 2022)

4.3.2.Water supply

The proposed drilling system utilizes air only, which ensures that only on-site workers will need water for drinking and general purposes. A temporary storage tank to provide drinking water and general use will be placed on site, see ***Figure 6***. Water will be purchased from the local water suppliers in water containers. Best practice guidelines will be implemented during prospecting activities to prevent contamination in the waterbodies.

Figure 6: Temporary water storage tank

4.3.3.Ablution facilities

Enough mobile toilets will be installed on site for ablution purposes, thus reducing potential pollution associated with erecting sewage pipes underground. Mobile toilets are dynamic, they can be moved from drill site to drill site, once drilling activities ceases, mobile toilets will be easily removed from the drill site, an agreement will be signed between the applicant and sewage people to collect waste from ablution at least twice a week.

Figure 7: Typical example of mobile toilet

4.3.4.Accommodation

No accommodation for staff and workers will be provided on-site, Workers will be transported to and from the prospecting site daily. Night security staff will be employed once equipment has been established on site.

4.3.5.Temporary office area

A temporary site office shaded area will be erected at the drill site. This will be used for daily project administration.

Figure 8: Typical example of temporary site office

4.4. Blasting

Blasting is beyond the scope of this project as no bulk sampling is possible under the Prospecting Work Programme (PWP), no bulk sampling was planned. Instead, the project will include geological mapping, exploration drilling, sampling, resource modelling, and resource reporting.

4.4.1.Storage of dangerous goods

During drilling activities, limited quantities which is 1000L of diesel fuel, oil and lubricants will be stored on site. The only dangerous goods that will be stored in any significant quantity is diesel fuel, above-ground diesel storage tanks will be used for storage of diesel to prevent contamination, see ***Figure 9*** below.

Figure 9: Diesel storage tank.

5. POLICY & LEGISLATIVE CONTEXT

Table 6: 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 Notre Coal (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. DMRE REF: **MP 30/5/1/1/2/ 17554 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 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 (GNR. 151 dated 23 February 2007, as amended in GNR. 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.
Mkhondo Local Municipality Integrated Development Plan (IDP) Strategic Development Framework (SDF)	Needs and Desirability, socio-economic needs. Land use	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: a) to an environment that is not harmful to their health or wellbeing; and b) to have the environment protected, for the benefit of present and future generations,	BAR & EMPr	Prospecting activities and its associated impact has been documented in the BAR and EMPR. EMPR impacts will be mitigated to avoid potential impacts on human health or wellbeing

through reasonable legislative and other measures that i) prevent pollution and ecological degradation: ii) promote conservation; and iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.		
National Heritage Resources Act, 1999	Management measures	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.

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).

Prospecting activities do not offer many tangible benefits as it is the initial phase of mining. Prospecting precedes mining; however, it is during the prospecting phase that findings are established on whether the available reserves can be mined at an economic gain. It is understood that the mining plays a pivotal role in South African economy and boast a large labour force; hence a greater significance is placed on prospecting for realization of mining benefits.

Although prospecting activities are not labour intensive, approximately 10 people will be hired to assist with general activities. The services required can also be sourced locally depending on their availability thus growing the economy of Delmas.

Prospecting activities are needed to:

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

The Department of Environmental Affairs has released an updated Need and Desirability Guideline Document dated 2017. Need and desirability is based on the principle of sustainability, set out in the Constitution and in NEMA, and provided for in various policies and plans, including the National Development Plan 2030 (NDP). Addressing the need and desirability of a development is a way of ensuring sustainable development – in other words, that a development is ecologically sustainable, socially, and economically justifiable – and ensuring the simultaneous achievement of the triple bottom-line.

The concept of "need and desirability" relates to, amongst others, the nature, scale, and location of development being proposed, as well as the wise use of land. While essentially, the concept of "need and desirability" can be explained in terms of the general meaning of its two components in which need primarily refers to time and desirability to place (i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed?), "need and desirability" are interrelated and the two components collectively can be considered in an integrated and holistic manner. Having regard to the above, the need for and desirability of an application must be dealt with separately and in detail, inter alia the following questions:

Table 7: 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?	Yes, Prospecting is an integral part of its rationale to make use of the abundant natural resources in the area to create strong, resilient, and prosperous district.
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 as of 2016 was 23.9% according to Census. High youth unemployment in particular means young people are not acquiring the skills or experience needed to drive the economy forward Notre Coal (Pty) Ltd will have a positive impact on the socio-economic conditions of the Annysspruit community once operations commence. The prospecting will sustain the

		proposed areas and once the stage of mining has been reached, it will contribute to the socio-economic development of the region as a whole through social upliftment and the creation of jobs as key agents
4.	Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	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. The mining sector contributed 10% of the GVA of the local economy during 2010 and 1.2% towards the local economy's employment. The average annual GVA growth between 1995 and 2010 is -8.5% with an annual average formal employment contribution of 1.1% during the same period. In addition, The National Development Plan (NDP) Vision for 2030 offers a long-term perspective. It defines a desired destination and identifies the role different sectors of society need to play in reaching that goal. The main goals highlighted in the NDP which pertain to the proposed project are employment. 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.
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 Ecca 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.)?	the impacts on well-being, following mitigation, will be as follows: • Visual: Medium -Low • Dust: Low • Noise: Low • Sense of place: Low Strict adherence to the recommendations & mitigation measures identified will be ensured.
13.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	No. 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. In South Africa coal and clay have contributed to funding impressive economic growth and stability.
14.	Will the proposed land use result in unacceptable cumulative impacts?	No. The proposed project has only been identified to have minimal cumulative impacts that can be mitigated to an acceptable level. The measures outlined in the EMP attached will serve as a method to keep the proposed project from having any serious long term cumulative impacts on the receiving environment.

7. MOTIVATION OF THE OVERALL PREFERRED SITE.

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

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

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

- The site offers the mineral sought after,
- Very little natural vegetation needs to be disturbed in order to establish the prospecting area (0.9 ha).
- The prospecting area can be reached by using a gravel road that extends from either R543 road.
- No residual waste as a result of the prospecting activities will be produced that needs to be treated on site. The general waste produced on-site will be contained in sealed refuse bins to be transported to the local municipal landfill site.
- As maintenance and servicing of the equipment will be done at an off-site workshop, the amount of hazardous waste to be produced at the site will be minimal and will mainly be as a result of accidental oil or diesel spillages.
- Contaminated soil will be removed to the depth of the spillage and contained in sealed bins until removed from site by a hazardous waste handling contractor to be disposed of at a registered hazardous waste handling site, more information will be discussed after the granting of the prospecting right.

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.)

Prospecting is conducted in phases, where the activities and location of drilling and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report. Positioning of invasive prospecting planned in the sensitive areas and buffer zones should be conducted with a suitably qualified ecologist in order to avoid and/or minimize the destruction of any sensitive vegetation or habitats occurring in these areas.

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)

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

The proposed prospecting area is situated on Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT, which falls within the Magisterial District of Mkhondo. The project area is situated approximately 6.80 km southeast of Ngema Tribal Trust and 19.06 km east of Piet Retief Township. Within the 15 km radius of the proposed prospecting area, there are two coal mines namely Kiepersol Mine and Savmore Colliery, located approximately 4.76 km south-west and 4.21 km north-west of the proposed area respectively, and also Heyshope Dam approximately 9.85 km north, Assegaairivier approximately 10.5 km northwest, Röhrs Farm Guesthouse approximately 5.99 km east and Bodenstadt Country Lodge approximately 12.2 km southeast of the proposed prospecting project and It can be accessed through a gravel road that extents from the R543 road .

The prospecting right application directly affects the whole Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT farm. The development footprint encircles 767,811 ha.

(b) The type of activity to be undertaken

Main activity conducted to determine the Coal resources present in an economic feasible quality and quantity is drilling. The boreholes will be drilled with the diamond drilling method so the geologists can get a clear understanding of the actual subsurface setting of the lithologies. As outlined in the Prospecting Work Programme (PWP) all activities will be conducted in a phase approach whereby the execution of a new phase will depend on the results of the preceding phase. Prospecting activities will not compromise any future land uses on the study area as the applied activities are temporary

(c) 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

(d) Technology Alternatives

The technologies listed in the PWP have been selected as they are proven effective in the determination of resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include a literature survey, field reconnaissance/mapping, and geophysics survey of the geology, outcrops. Invasive technology alternatives have also been considered. It is hereby noted that the different phases and timeframes of the prospecting herein envisaged are, by their nature, dependent on the results obtained during the preceding phases of such prospecting. The proposals set out in the Prospecting Work Programme are therefore made on the basis that results obtained during the preceding phases may necessitate reasonable changes and adaptations to such proposals, which will be reported as prescribed

(e) The operational aspects of the activity

A prospecting period of three 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.

(f) 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.

9. 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 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.

9.1. 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 or "public" in the context of development activities.

A stakeholder is any person, group of 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).

9.2. 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.

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

9.3. Identification of interested and affected parties

Interested and Affected Parties Identification Procedure

The Interested & Affected Parties for this project will be consulted through e-mail media communications in order to share the valuable objections or interests in a draft BAR and EMPR. Other means of Identification & notification adopted was through sharing the hardcopies to the stakeholders, the print media (in a form of newspaper) and placement of notices in public spaces.

9.4. 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 **05th of August 2022** to notify all the Interested & Affected Parties of the proposed development. See ***Figure 11*** for the published newspaper Advertisement.

Figure 10: face- face Consultation. *(Singo consulting (Pty) Ltd , 2022)*

Van my kant af

Versigtig om iets te berde te bring?

Daar sal altyd 'n ietsie van 'n geliefde, vriend, familielid of kollega wees wat dalk mag krap.

Mense wat vir mekaar omgee moet nie versigtig/bang/onseker wees om hul kaarte op die tafel te lê nie.

Wanneer 'n situasie wat lankal krap, opgehaal word, moet partye betrokke dit in liefde uitpraat. Dit moet ook nie as kritiek beleef word of persoonlik opgeneem word nie.

Maar . . . Daar is baie maniere om met iemand 'n saak te bespreek. Hoe jy die persoon benader maak gewoonlik die verskil tussen iets oplos of jarelange kwaaivriendskap saai.

Dit is waar dat die meeste mense konflik probeer vermy, deur dit te ignoreer of weg te redeneer. Daar is egter 'n paar punte wat ons in gedagte moet hou tydens die proses:

- Bly kalm en dink voor jy reageer
- Goeie konflik bou op en slegte konflik breek af
- Wees geduldig en verdraagsaam
- Onthou die persoon is in jou lewe vir 'n rede
- Moenie 'n volgende persoon verneder omdat jy verneder is nie.

Daarom moet julle meelewend, goedgesind, nederig, sagmoedig en verdraagsaam wees. Wees geduldig met mekaar en vergewe mekaar as die een iets teen die ander het.

(Kolossense 3:12-13)

Bone cancer awareness sponsored walk by Mphazima Foundation

The attendees after the event

Siphokazi during her speech

David Mkhonta

On Saturday morning 30 July, the Mphazima Foundation hosted a bone cancer awareness walk event where attendees converged at the Town Hall at approximately 07:30. Arranged transport drove them to the starting point.

The walk officially started at the Paulpietersburg T-junction (outside of town) where they walked back to the Town Hall. Traffic officials and the Mkhondo municipal emplo-yees joined the participants in the walk.

This was an initiative for sarcoma and bone cancer awareness. The aim was to educate the community about cancer, living a healthy lifestyle and giving back to the people. The event was also a fundraiser for Siphokazi Mthethwa, who is currently living with bone cancer. She was a keynote speaker on the day.

Siphokazi shared her story of bone cancer and passed on some in-depth knowledge about sarcoma cancers. The 24-year-old from Paulpietersburg has been battling with this for six years, which has led her to put her studies on hold and focus on treatment and getting better.

"It's important to inform people and make them aware about cancer. The first symptom that most patients experience is pain. Pain is the main symptom in every disease. Patients always consult doctors because of pain," she said.

Speaking on symptoms, she mentioned that bone cancer tends to develop slowly. It develops on the type, location, and size of the tumour. Pain is the most frequent symptom, sometimes a firm, slightly tender lump on the bone can be felt through the skin. In some cases, bone cancer interferes with normal movements and cause the bone to break. These symptoms are not necessarily signs of cancer. They may be caused by other, less serious problems. Only a doctor can tell for sure. If pain and/or swelling persist for more than two weeks, then one should consider consulting a doctor.

Cancer is also one of the diseases that cause pain. Moreover, it is a progressive disease. It starts in one localized part of the body.

Making a diagnosis of cancer is not easy. For one to reach a definitive diagnosis many tests need to be done which is costly. However, a good clinical examination by a doctor will help to reach a diagnosis.

She further mentioned that Osteosarcoma, is the most common type of bone cancer in young people. It usually occurs between the ages of 10 and 30. Males are affected more often than females. Osteosarcoma often starts in the end of bones. It usually affects the long bones that make up the arms or legs.

If cancer is treated at an early prognosis, it might be manageable.

She pleaded for more support regarding cancer because more and more people are being diagnosed with this type of cancer and its always better to be well informed. When people support us living with cancer, we feel loved and know that we are not alone. She further thanked the Mphazima Foundation for organising the event in order to serve the community with dignity, respect and to always follow their core values of caring for

Figure 11: Newspaper Advertisement (encircled with red polygon)

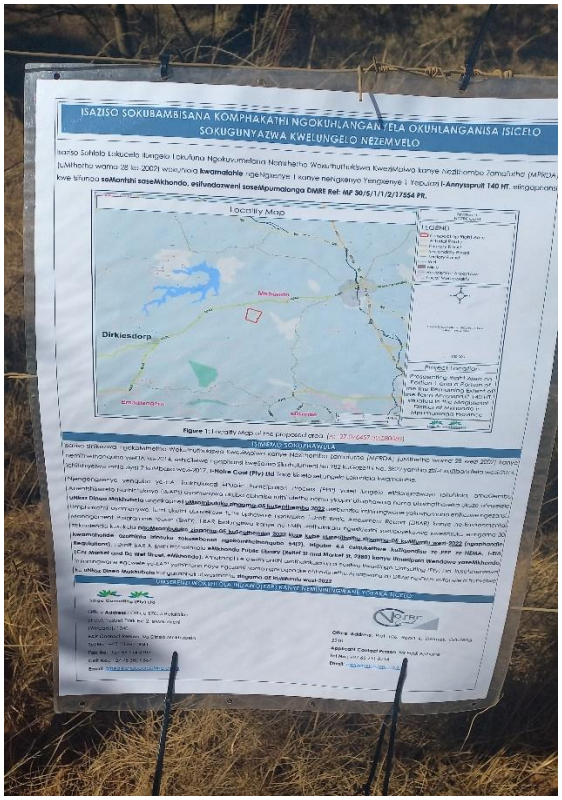
9.5. Site Notices

Site notices were placed around the farm boundaries, adjacent properties, the local municipality, and Mkhondo Public Library on the **14th of August 2022** as another means of notifying any person/s who would be Interested & Affected by the proposed development. Refer to ***Figure 12*** for Proof of site Notice Placement.

Etshondo Primary School

Mkhondo Public Library

Dirkiesdorp Clinic



Entrance of the proposed pospecting farm

Figure 12: Site notice placement. *(Singo consulting (Pty) Ltd , 2022)*

Table 8: Windeed Search Results

Deeds Office Property

HT, ANNYSSPRUIT, 140, 1, 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	2022/07/29 07:27	Farm Number	140
Reference	-	Registration Division	HT
Report Print Date	2022/07/29 07:28	Portion Number	1
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	Deeds Office

PROPERTY INFORMATION			
Property Type	FARM	Diagram Deed Number	T2061/1929
Farm Name	ANNYSSPRUIT	Local Authority	MKHONDO LOCAL MUNICIPALITY
Farm Number	140	Province	MPUMALANGA
Registration Division	HT	Remaining Extent	NO
Portion Number	1	Extent	10.6695H
Previous Description	-LG797/963	LPI Code	T0HT00000000014000001
Suburb / Town**	10KM NORTH OF KWANGEMA	Co-ordinates (Lat/Long)**	-27.090535 / 30.60358

OWNER INFORMATION (1)			
REHEIVO BOERDERY CC			Owner 1 of 1
Company Type**	CLOSE CORPORATION	Document	T24875/2003
Registration Number	200712846623	Microfilm / Scanned Date	-
Name	REHEIVO BOERDERY CC	Purchase Price (R)	985 000
Multiple Owners**	NO	Purchase Date	2002/12/11
Multiple Properties**	NO	Registration Date	2003/03/04
Share (%)	-		

LexisNexis

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

ENDORSEMENTS (7)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	B16628/2003	ABSA BANK LTD	625 000	-
2	B17453/2006	ABSA BANK LTD	650 000	-
3	B890/2015	ABSA BANK LTD	4 000 000	-
4	K4809/1998RM	DUMBE BOERDERY PTY LTD	-	1998 103 4 :44:38
5	VA218/2015	REHEIVO BOERDERY CC	-	-
6	HT,140,1	-	-	-
7	INFO FROM PRETORIA DEEDS REGIS	-	-	-

HISTORIC DOCUMENTS (4)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T64217/1980	ZYL ALMA LOUISE VAN	Unknown	1997 070 0 :00:85
2	T58973/1997	DUMBE INV PTY LTD	560 000	-
3	T58973/1997	DUMBE BOERDERY PTY LTD	560 000	-
4	T24875/2003	REHEIVO BOERDERY PTY LTD	985 000	-

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 05th September 2022 to 05th October 2022.

Hard 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 Mkhondo Public Library & another copy submitted at the Mkhondo 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 this BAR and EMPR.

9. LIST OF AUTHORITIES IDENTIFIED AND NOTIFIED

The following authorities have been identified and notified of the proposed Prospecting right application project:

- Mkhondo Local Municipality
- Gert Sibande District
- Gerald Sekoto Public Library
- Mpumalanga Department of Rural, Environmental and Agricultural Development
- Mpumalanga Department of Water and Sanitation
- Mpumalanga Department of Rural Development and Land Reform
- Mpumalanga Department of Agriculture
- Mpumalanga Department of Agriculture, Forestry and Fisheries
- Mpumalanga Department of Mineral Resources and Energy
- National Department of Forest, Fishier and the Environmental
- Mpumalanga Tourism and Park Agency
- South African National Roads Agency Ltd (SANRAL)
- Eskom SOC Limited

Summary of issues raised by I&APs

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

Table 9: Summary of issues raised

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received (Call, Fax, emails)	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.
AFFECTED PARTIES					
Landowner/s					
REHEIVO BOERDERY					

Local Municipality:					

Mkhondo Local Municipality					
Organs of state (Responsible for infrastructure that may be affected: Roads, Departments, Eskom, Telkom& DWA)					

water & sanitation Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA					
SANRAL					
Eskom					
Communities					
Tribal leaders					
environmental affairs Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA					

agriculture, land reform & rural development Department: Agriculture, Land Reform and Rural Development REPUBLIC OF SOUTH AFRICA					
Mpumalanga TOURISM AND PARKS AGENCY					
TRANSNET					
Other Affected Parties					
Interested parties					

N/B: Due to POPI Act sensitive information will not be disclosed to the public

10. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

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

10.1 BASELINE ENVIRONMENT

Socio Economic Context

The proposed Prospecting Project is located within the Magisterial District of Mkhondo under, the Gert Sibande District Municipality. See ***Figure 13*** or ease of reference.

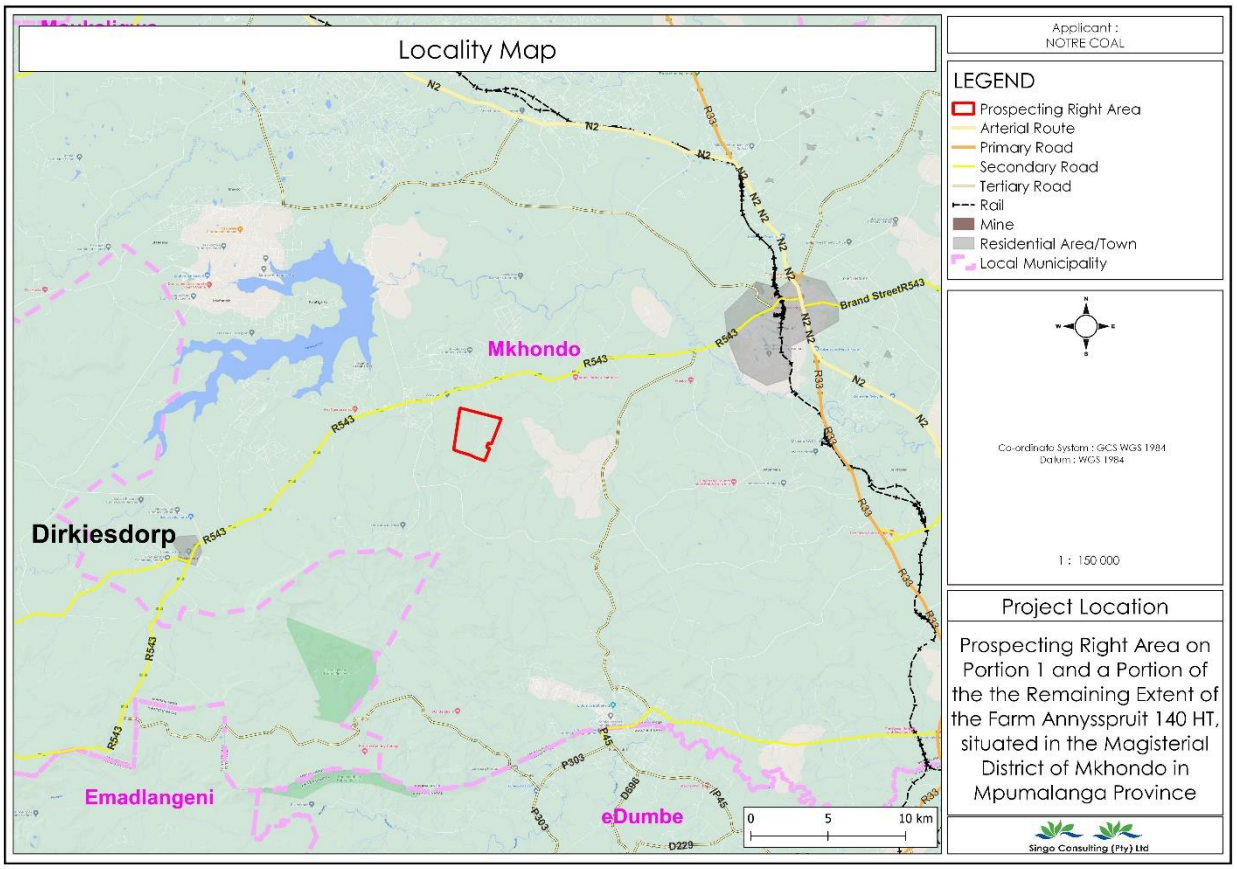


Figure 13: Project location. *(Singo consulting (Pty) Ltd , 2022)*

11. SOCIO-ECONOMIC ENVIRONMENT

Reference to the following section has been made from (2017 - 2022) Draft Integrated Development Plan of Mkhondo Local Municipality.

Municipal Administration Units and Wards

The Mkhondo Local Municipality comprises of 32 Wards and a total population of approximately 378 481 (CS 2021). The municipality has an area of approximately 2,384 km².

According to Mkhondo Local Municipality's IDP 2020-2021, the local population had 2.1% growth rate per annum which led from 171 982 in 2011 to 189 036 in 2016. Mkhondo Local Municipality is mostly dominated by African black people, followed by coloured people, indian or Asian and white people from 1996 to 2016. Mkhondo has an HDI of 0,53 which then falls within the United Nations Category of Low Human Development. Mkhondo local Municipality ranks very low compared to other local municipalities in Mpumalanga Province. Mkhondo local Municipality's Gini coefficient has remained at 0.58 in 2011 and 2015 *(Stats SA)*. With reference to Stats SA (2016) the number of people not older than 21 years, without parents has decreased from 7112 in 2011 to 4602 in 2016. The number of people with 'no schooling' has declined from 2001 to 2011, mean while those with matric has increased. According to the Final MLM Draft SDF (2016) the settlements with the lowest education level are Ngema Tribal Trust, Mkhondo Non-urban, Saul Mkhizeville and KwaNgema. These are the settlements that are located in close proximity to traditional areas or informal settlements with the highest education levels are eMkhondo, Iswepe and Amsterdam *(UP Enterprise, 2016)*.

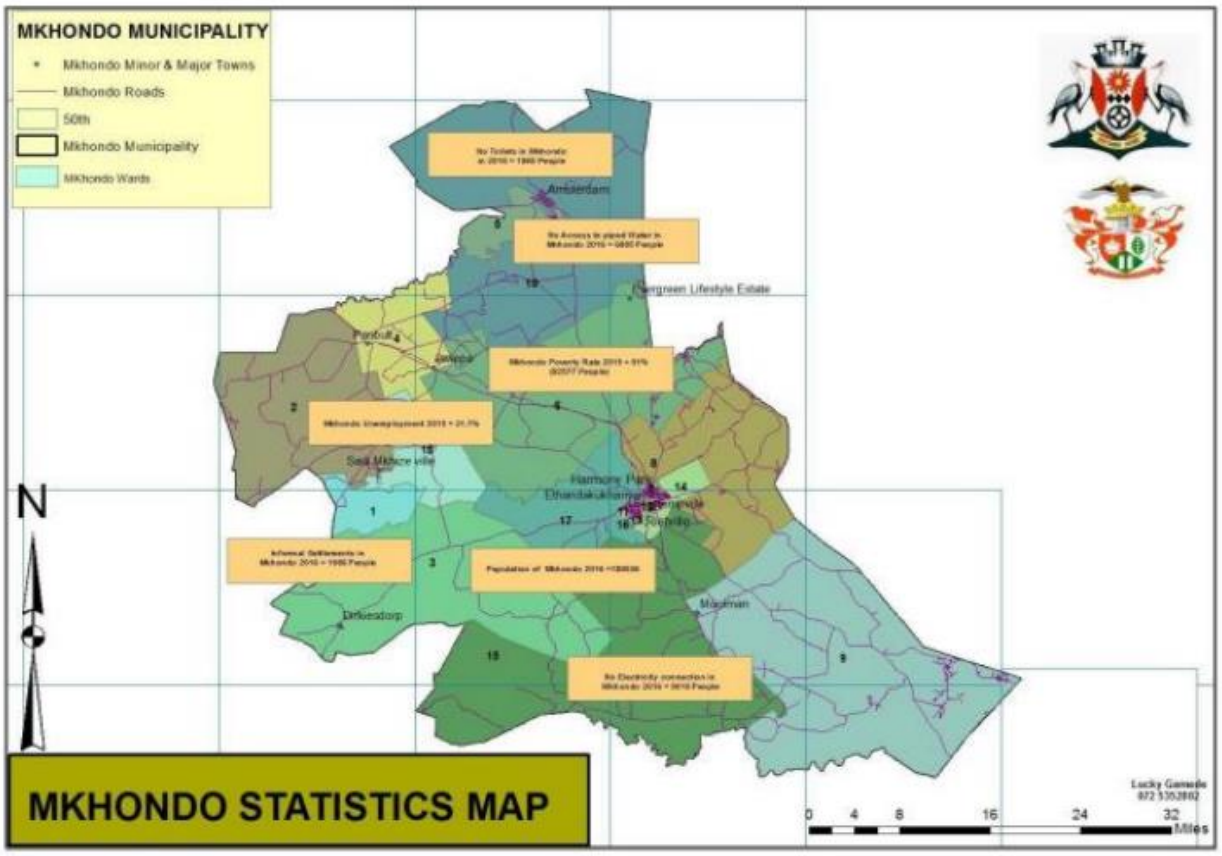


Figure 14: Mkhondo Local Municipality Statistics Map

Population Distribution of MLM

The population of Mkhondo increased from 171 982 in the year 2011 to 189 036 in 2016. The population increased with approximately 17 054 individuals. When a population increases, this is directly proportional to the number of houses in the same region hence there was an increase of 8 162 in the number of households from 37 433 in 2011 to 45 595 in 2016. The number of households living in RDP houses and in informal settlements also increased. Not everyone can afford to purchase or build for themselves a formal and proper house.

Table 10: Population distribution of Mkhondo Local Municipality (Mkhondo Local Municipality (IDP), 2017-2022)

	2011	2016
Population	171 982	189 036
Number of Households	37 433	45 595
Households living in RDP House	10 342	11 733
Households in Shacks within Informal Settlements	642	1086

Racial Composition

According to Mkhondo Local Municipality IDP 2017-22, the Black African Race dominates the footprint of MLM mean while the population of Whites and Indians/Asian race decreased from 2011 to 2016. In areas such as Amsterdam, there has been a shift in racial composition, with the white population declining from 37,4% of population in 2001 to 7,4% in 2011 and the black population increasing from 60,1% in 2001 to 90,4 % in 2011.

Table 11: Racial Composition of MLM (Mkhondo Local Municipality (IDP), 2017-22)

RACE	1996	2001	2011	2016
Black African	91 554	136 523	162 322	185 025
Coloured	502	587	894	1232
Indian/Asian	1063	773	1417	670
White	6750	5195	6447	1880

Education

The average number of people with no schooling in MLM has fluctuated from an increase from 18 000 in 1996 to a declined from 22 806 in 2001 to 15 914 in 2011 and to an increase from 2011 to 38 045 in the year 2016. The average number of people with grade 7, grade 12 and higher than grade 12 has kept an increasing trend from the year 1996 to 2016.

Table 12: Education Background Stats of MLM (Mkhondo Local Municipality (IDP), 2017-2022)

EDUCATION BACK-GROUND	1996	2001	2011	2016
No Schooling	18 000	22 806	15 914	38 045
Grade 7	3 360	4 304	4 543	7880
Grade 12	5 594	8 674	22 600	30841
Higher than Grade 12	1 759	2 411	4 575	

GVA Contribution

According to the Mkhondo Local Municipality, the biggest contribution comes from community services. Mining contributes 11.9% of the GVA Contribution of Mkhondo Local Municipality

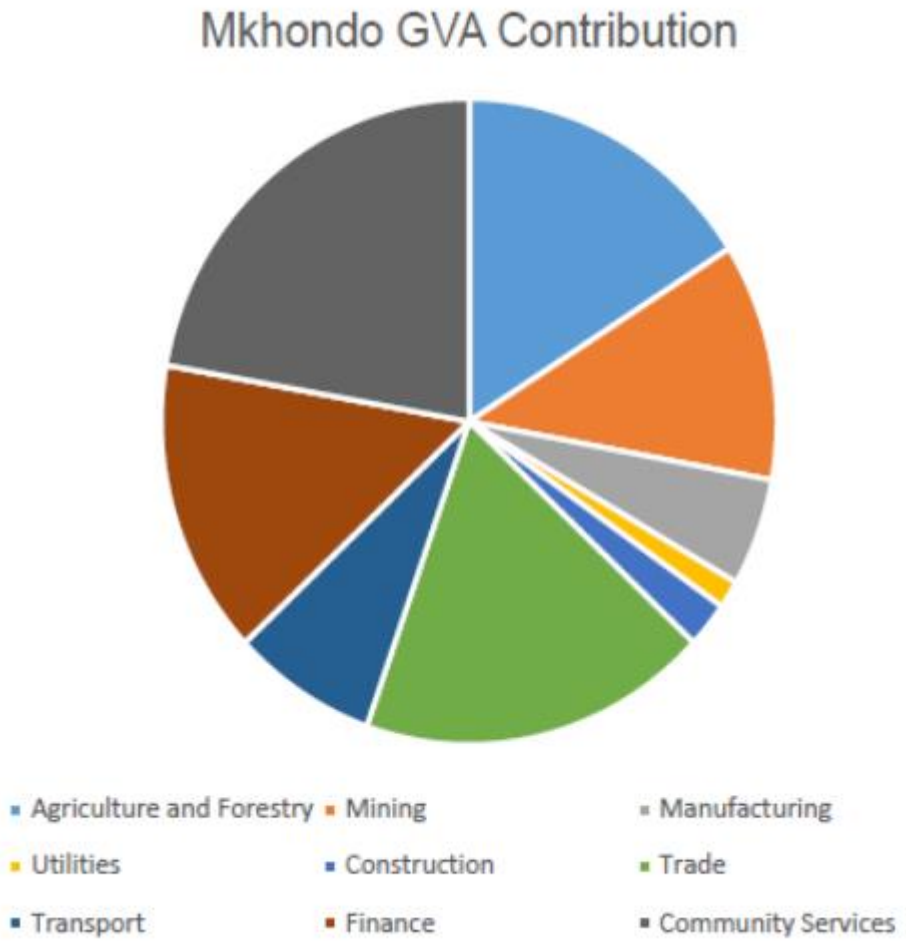


Figure 15: GVA contribution with MLM (Mkhondo Local Municipality (IDP), 2017-22)

Table 13: GVA contribution within Mkhondo Local Municipality (Mkhondo Local Municipality (IDP), 2017- 2022)

INDUSTRY	MKHONDO
Agriculture and Forestry	16
Mining	11.9
Manufacturing	5.4
Utilities	1.4
Construction	2.3
Trade	18.4
Transport	7.6
Finance	14.8
Community Services	22.2
Total	100

Unemployment and Employment Levels

With reference to the IDP 2017-22, unemployment decreased from 2001 to 2011. Unemployment rate decreased from 33.3% in 2011 to 29.3% in 2016.

Table 14: Unemployment rate statistics (Mkhondo Local Municipality (IDP), 2017-2022)

UNEMPLOYMENT RATE	1996	2001	2011	Unemployment rate 2011 (%)	Unemployment rate 2016 (%)
Employed	21 550	24 216	30510		
Unemployed	10 524	20 476	17 123	33.3 %	29.3%

Sources: STATS SA

Water Provision

According to Mkhondo Local Municipality IDP 2017-2022, 17% of the population obtain water from streams, rivers, and boreholes and the 83% is water provided by the municipality to the community. Below are the Statistics obtained from Stats SA regarding access to water and water provision.

Table 15: Water Provision (Mkhondo Local Municipality (IDP), 2017-2022)

2011		2016	
Inside dwelling	11556	Inside dwelling	11556
Inside the yard	10371	Inside the yard	10371
Access point outside the yard	7467	Access point outside the yard	7467
No access to piped water	8039	No access to piped water	8039

12. **SENSITIVITY STUDIES**

Reference to the following section has been made from Singo Consulting (Pty) Ltd Specialists studies (Hydrogeological **Studies, Hydrological Studies, and Soil Studies)**

12.1 GEOLOGY

a) Regional Geology

Karoo Supergroup

The sedimentary part of the Karoo Supergroup is subdivided into four main lithostratigraphic units, which from the base up are the Dwyka, Ecca, Beaufort and Stormberg *(Molteno, Elliot and Clarens formations)* groups (Johnson et al., 1996; SACS, 1980) as shown ***Figure 16***. These are capped by some 1.4 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 as seen on ***Figure 16***.

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 dropstone-bearing varved mudstones. The easily identifiable lithologies form a good marker below the coal bearing Ecca 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

The Ecca Group of Karoo Supergroup is a sedimentary rock sequence that deposited between the Late Carboniferous *(Dwyka Group)* and the Late Permian-Middle Triassic *(Beaufort Group)*. The Ecca Group sequence contains considerable carbon content. In the southwestern Karoo Basin, the Ecca Group has a total thickness of approximately 1,300 metres. The Ecca Group sediments of the north-eastern Karoo Basin have attracted attention in the past because of economic deposits of coal found in the coalfields centred on Vryheid *(Blignaut and Furter, 1940)*

and Witbank. The Ecca Group consists predominantly of sandstones and siltstones. Initially, rapid progradation under conditions of rapid basin subsidence led to the deposition of coarsening-upward deltaic sequences which show a transition from relatively deep-water facies to progressively shallow prodelta and delta front sequences. This resulted in inward migration of the basin margin so that the deltaic sequences are overlain by fining-upward fluvial sequences.

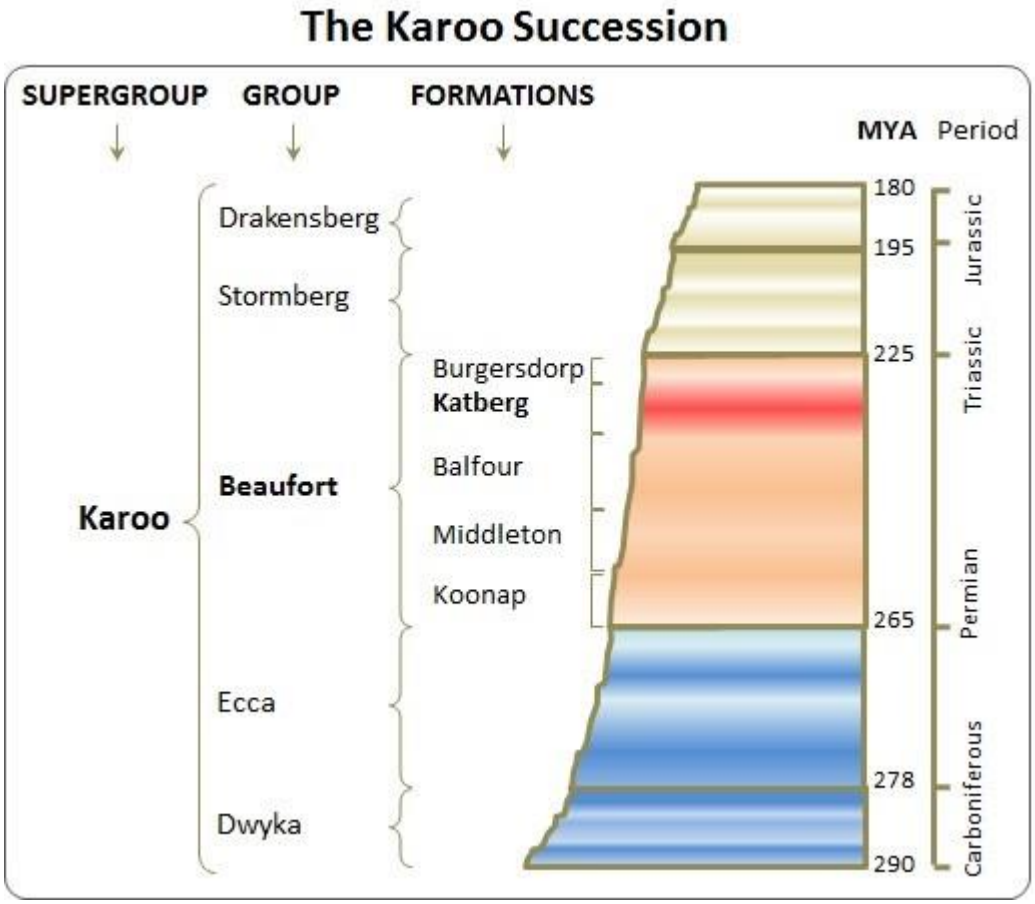


Figure 16: Karoo group Succession

b) Local Geology

Volksrust Formation

Volksrust Formation SACS (1980) applied the name Volksrust Shale Formation to the old "Upper Ecca Beds", with the choice of name based on a description given by Blignaut et al. (1952). The general thickness of the unit is between 150-250 m, and it is dominated by dark grey-green siltstones and mudstones, with phosphatic/carbonate/sideritic concretions. Cadle (1975) documents that the Volksrust Formation shows an overall coarsening-upward trend. Coals occur interbedded with the mudstones in places. The Volksrust Formation is postulated to have formed in shallow to deep water basinal conditions. Palaeontologically the Volksrust Formation is probably best known for its low diversity trace fossil assemblage (Tavener-Smith et al., 1988) and various organic microfossils. Macrofaunal remains include only various insects (Van Dijk, 1981) and

a rare bivalve assemblage (Cairncross et al., 2005). Plant remains and fossilised wood are also known.

Vryheid Formation

This formation has been subdivided into three different lithofacies arrangements. They are dominated by fine-grained mudstone, carbonaceous shale with alternating layers of bituminous coal seams, and coarse-grained, bioturbated immature sandstones respectively. The rock sediments are predominantly arranged in upward-coarsening cycles, although some fining-upward cycles are found in this formation's easternmost deposits. The alternating rock types observed in the Vryheid Formation indicate seasonal variations of storms and fairer weather in a pro-delta setting. The carbonaceous shales were formed below the water surface in anoxic conditions and the coal formed from compacted plant matter deposited at the bottom of peat swamps. These swamps formed on abandoned alluvial plains where stagnant water accumulated. The Vryheid Formation reaches a maximum of 1030m in Nongoma, KwaZulu-Natal, within the Nongoma Graben

Normandien Formation

The Normandien Formation comprises three sandstone members (lower Frankfort, Rooinek, upper Schoondraai) each overlain by an argillaceous interval. Two informal plant fossil assemblage zones are distinguished in the field: a "Christina assemblage zone" defined by Morphotype Pnc1, Morphotype Pnc2, Morphotype Pnc3 and Morphotype Pnc7, between the Frankfort and Rooinek sandstones; a younger "Moorfield assemblage zone" between the 8 Rooinek and Schoondraai sandstones, defined by Morphotype Pnm1, Morphotype Pnm2, Morphotype Pnm3, Rigbya arberioides and Sphenophyllum speciosum. These two proposed plant fossil assemblage zones enable subdivision of the Dicynodon therapod assemblage zone coincident with the Normandien Formation, and the two plant fossil zones have been successfully mapped out over a large area.

Karoo Dolerite Suite

The Karoo dolerite, which includes a wide range of petrological facies, consists of an interconnected network of dykes and sills and it is nearly impossible to single out any particular intrusive or tectonic event. It would, however, appear that a very large number of fractures were intruded simultaneously by magma and that the dolerite intrusive network acted as a shallow stockwork-like reservoir. Dolerite dykes, like many other magmatic intrusions, develop by rapid hydraulic fracturing via the propagation of a fluid-filled open fissure, resulting in a massive magmatic intrusion with a neat and transgressive contact with the country rock. This fracturing mechanism is in contrast to the slow mode of hydraulic fracturing responsible for breccia-intrusions (i.e., kimberlite). For the intrusion to develop the magma pressure at the tip of the fissure must overcome the tensile strength of the surrounding rock.

Dykes can develop vertically upwards or laterally along-strike over very long distances, as long as the magma pressure at the tip of the fissure is maintained. The intrusion of dolerite and basaltic dykes are therefore never accompanied by brecciation, deformation or shearing of the host-rock, at least during their propagation. The average thickness of Karoo dolerite dykes ranges between 2 and 10m. The country rock is often fractured during and after dyke emplacement. These fractures form a set of master joints parallel to its strike over a distance that does not vary greatly with the thickness of the dyke (between 5 and 15m).

One of the most prominent features of the present Karoo landscape is the large number of dolerite sills and ring-complexes. These structures often display a sub-circular saucer-like shape, the rims of which are commonly exposed as topographic highs and form ring-like outcrops. The Karoo dolerite sills and ring-complexes have the same geographical distribution as the dolerite dykes, and they are by far the most common type of intrusion in the Karoo basin. The dolerite sills and dykes form a complex intrusive network that probably acted as a shallow magma storage system. The lithology of the country-rock strongly controlled the emplacement of the sills.

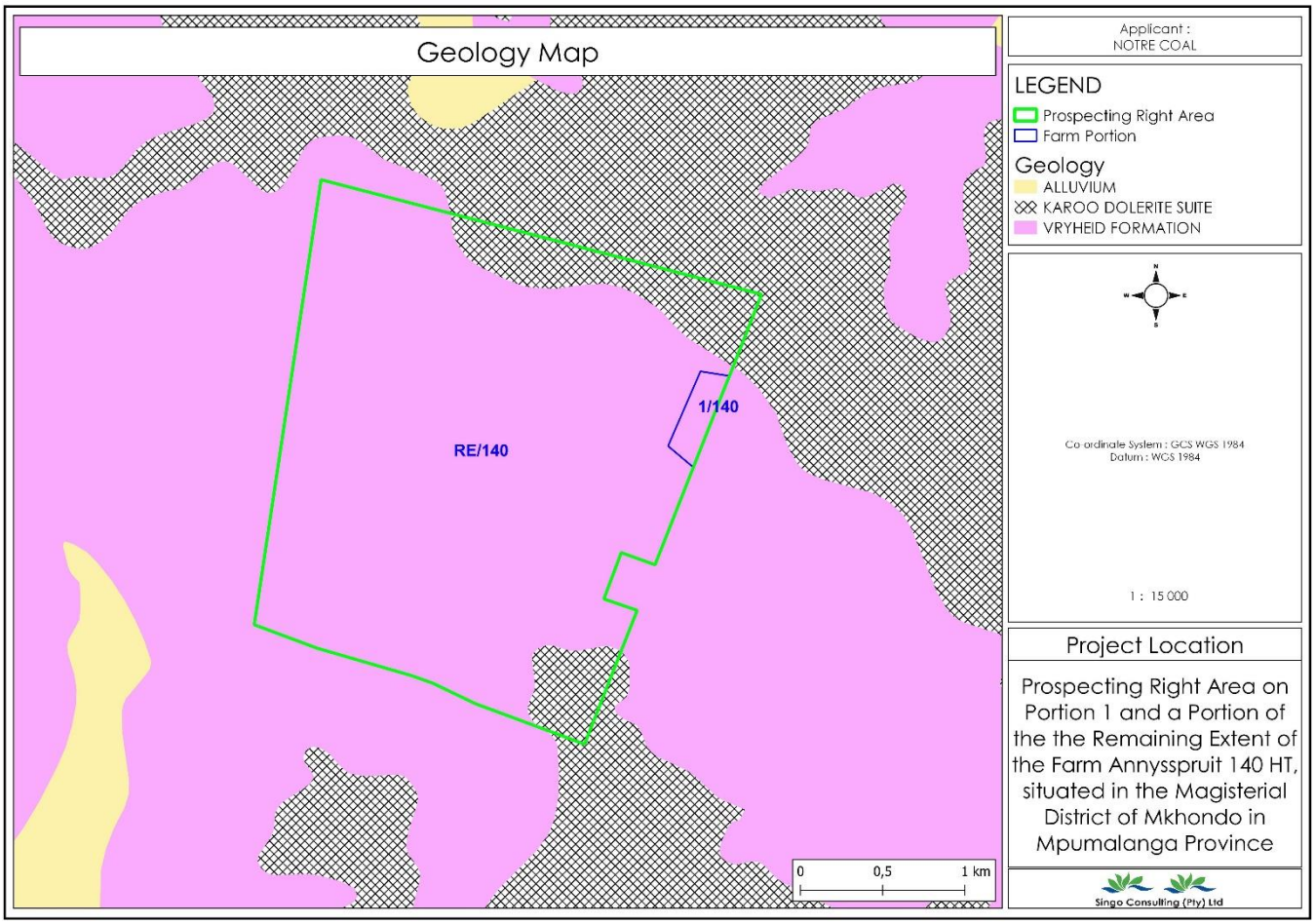


Figure 17: Geology map of the study area. *(Singo consulting (Pty) Ltd , 2022)*

12.2 SOILS

According to the baseline soil study conducted by Singo Consulting (Pty) Ltd in 2022, the soil classes map in ***Figure 18* below**, shows that the prospecting right area is largely covered with the **Association of classes 1 to 4: Undifferentiated structureless soils**. The other portion of the study area is situated on **the freely drained, structureless soils**.

The Association of classes 1 to 4: Undifferentiated structureless soils and the Freely drained, structureless soils:

The association of classes 1 to 4: undifferentiated structureless soils and the freely drained, structureless soils can be defined based on their soil depth, Soil Drainage, erodibility, and natural fertility.

Soil depth

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

Soil Drainage

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

Erodibility

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

Natural Fertility

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

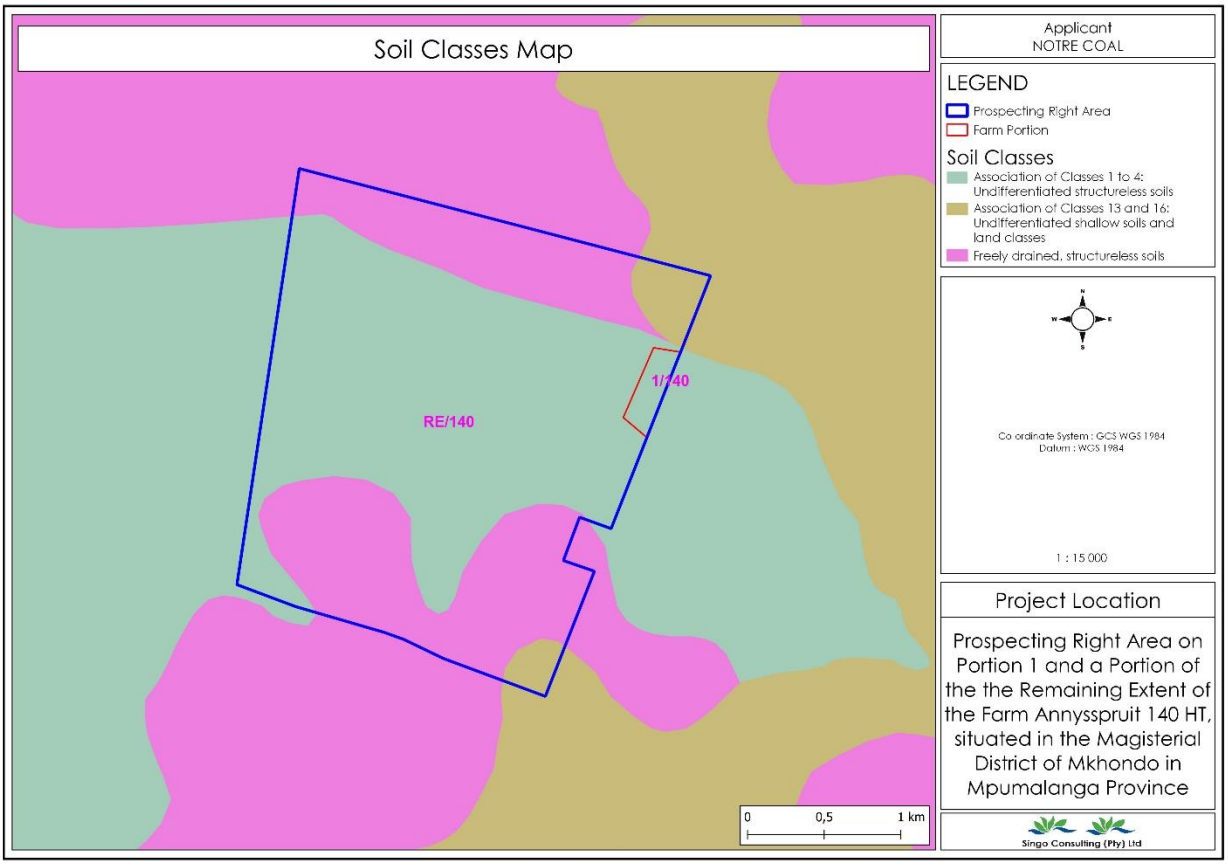


Figure 18: Soil Classes map of the proposed project area. *(Singo Consulting (Pty) Ltd, 2022)*

Figure 19: Soil type found on site. *(Singo Consulting (Pty) Ltd, 2022)*

12.3 LAND CAPABILITY

According to the map produced by the GIS technician see ***Figure 20***, the land capability of the area is said to be arable land and grazing. Arable land is any land capable of being ploughed and used to grow crops. The site assessment conducted on the 14th of August 2022 correlates to the current land use on site. Most of the proposed project area consists of crops while the other half is natural and used by livestock for grazing (see ***Figure 21*** below). This information also correlates to the info produced by the screening tool, which states that the area is within a very high agricultural sensitivity zone.

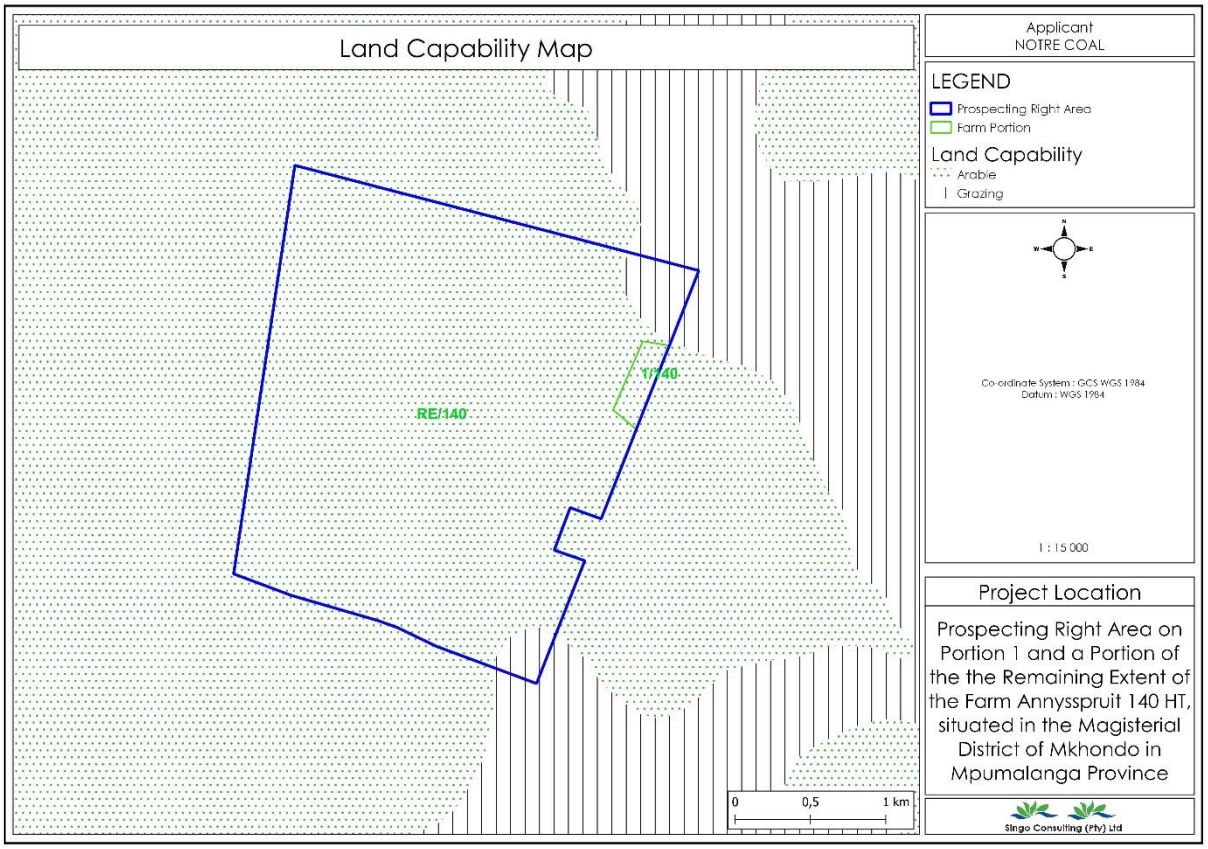


Figure 20: Land capability map. *(Singo Consulting (Pty) Ltd, 2022)*

12.4 FAUNA

Fauna that was observed during ground truthing were cows, goats, and housedogs. It is concluded that due to the nature of the agricultural activity, these faunas will be present on the site throughout the life of prospecting. It is not foreseen that there will be any other animals present on the site. This is because the proposed project area is fenced.

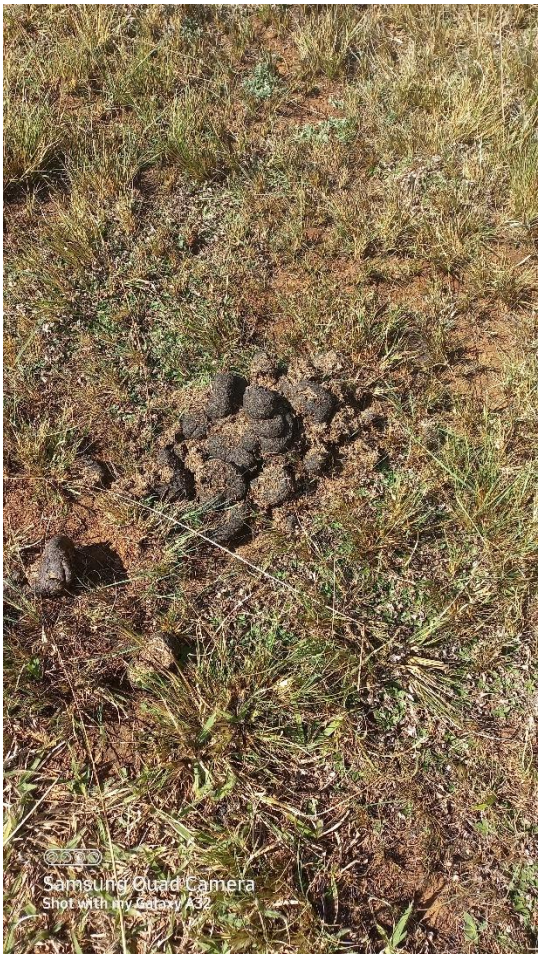
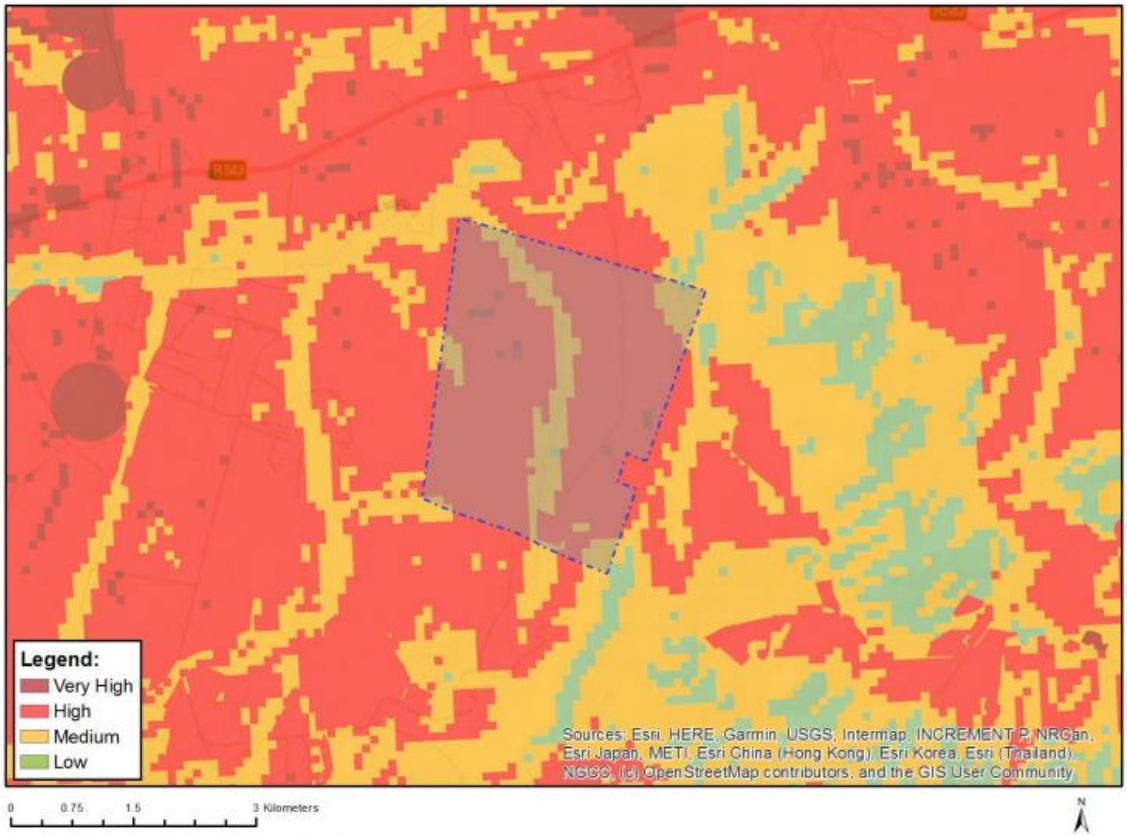


Figure 21: Agriculture and wilderness land. (Singo consulting (Pty) Ltd , 2022)

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Subsistence Farming 1;Land capability;09. Moderate-High/10. Moderate-High
High	Subsistence Farming 1;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Land capability;11. High/12. High-Very high/13. High-Very high/14. Very high/15. Very high

Figure 22: Agriculture theme sensitivity *(Source: Screening Tool)*

VEGETATION

Distribution: The vegetation area is between Mpumalanga and Swaziland, and marginally into northern KwaZulu-Natal: Occurs along the gentle slopes of the Escarpment, from the Phongolo Valley in the south, northwards to the Usutu Valley and to the uppermost Lomati Valley near Carolina, including the western grassland areas of Swaziland. Altitude 880–1 740 m.

Vegetation & Landscape Features: Largely comprised of undulating hills and plains that occur on the eastern edge of the Escarpment. This unit is transitional between the Highveld and Escarpment and contains elements of both. The vegetation structure is comprised of a short, closed grassland layer with many forbs, and a few scattered shrubs on the rocky outcrops.

Conservation: According to (Mucina and Rutherford, 2006) the area is Vulnerable. The conservation target 27% with only 0.4% protected within any formally proclaimed nature reserves (Malalotja, Nooitgedacht Dam and Songimvelo). A number of private conservation areas protect small patches of this unit. It is well suited for afforestation and 30% has already been converted to plantations of alien trees. A further 6% is under cultivation. Erosion potential very low (55%) and low (7%). However, the screening report illustrates low - medium sensitive plant species within and around the application area (see ***Figure 23***below).

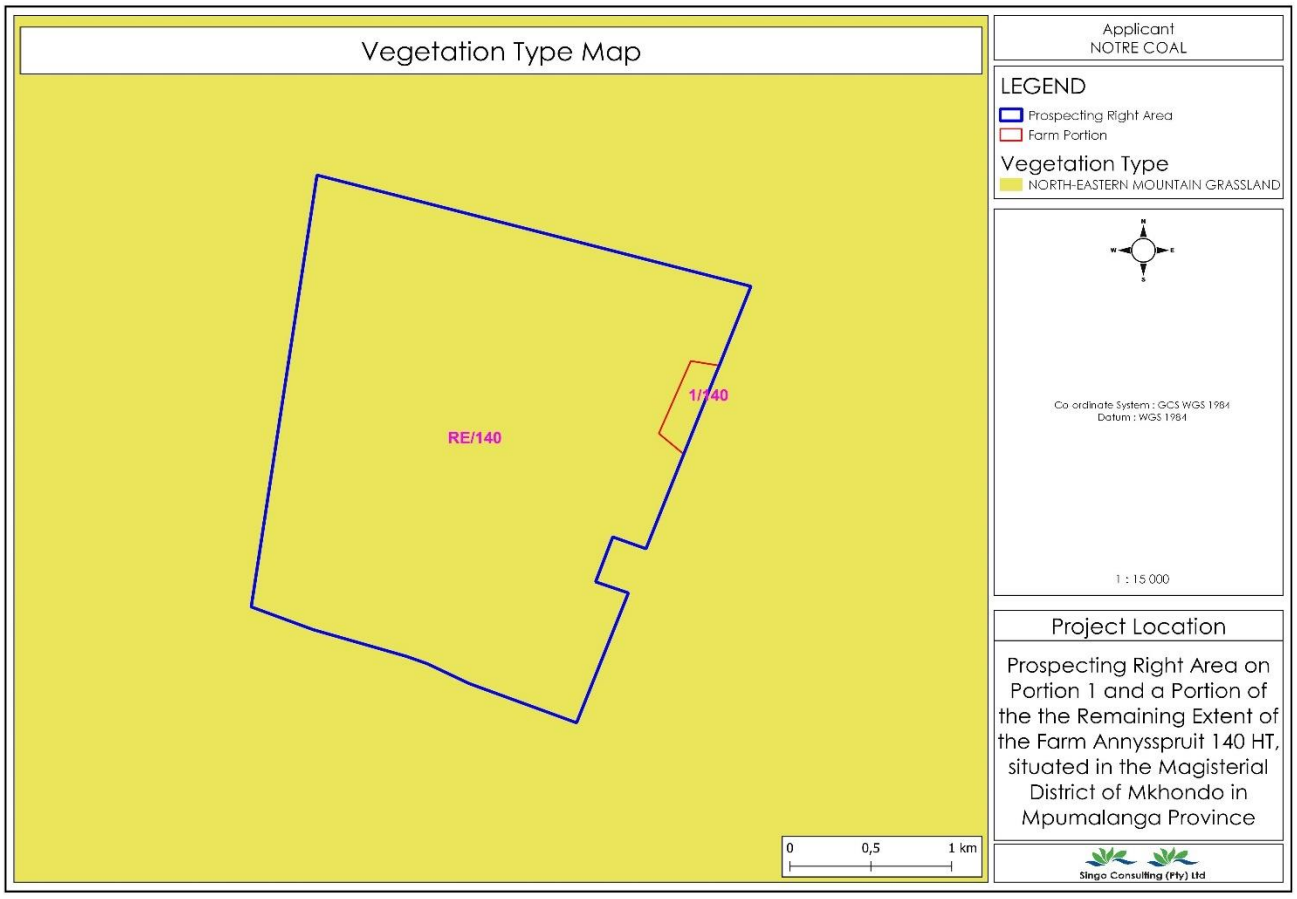
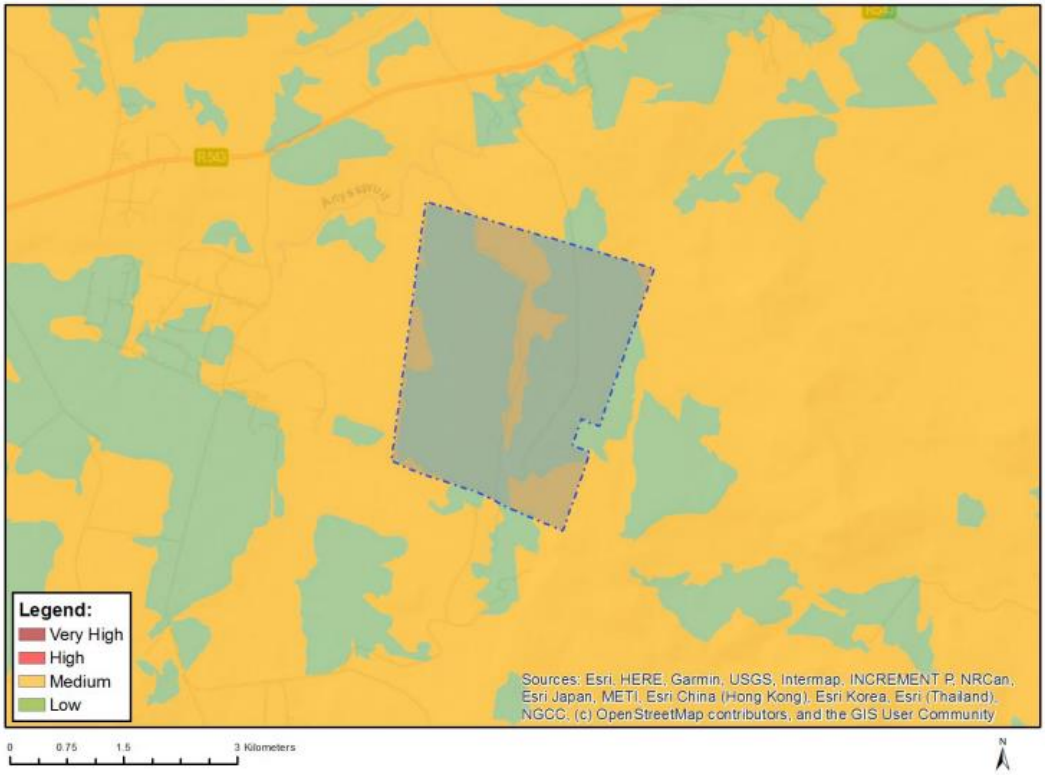


Figure 23:Vegetation type map. *(Singo consulting (Pty) Ltd , 2022)*

Figure 24: Current common vegetation in the area. *(Singo Consulting (Pty) Ltd, 2022)*

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 1252
Medium	Bowkeria citrina
Medium	Melanospermum italae
Medium	Sensitive species 1003
Medium	Dracosciadium italae
Medium	Lotononis amajubica
Medium	Sensitive species 41
Medium	Sensitive species 691
Medium	Sensitive species 998
Medium	Sensitive species 1219
Medium	Sensitive species 1152
Medium	Sensitive species 313

Figure 25: ***Relative plant species sensitivity map.*** *(Source: screening report)*

The Terrestrial biodiversity Map illustrates the CBA of the proposed project area. As shown in the map the area is situated within a heavily modified and moderately modified old lands.

This map (Terrestrial biodiversity Map) along with the freshwater map (see ***Figure 26***) influenced the positioning of the proposed boreholes. Boreholes have been placed strategically on open spaces within the field. According to the maps as well as the borehole map produces by the inhouse GIS technician, no boreholes will be placed near the wetland and infrastructure that is found within the proposed project area.

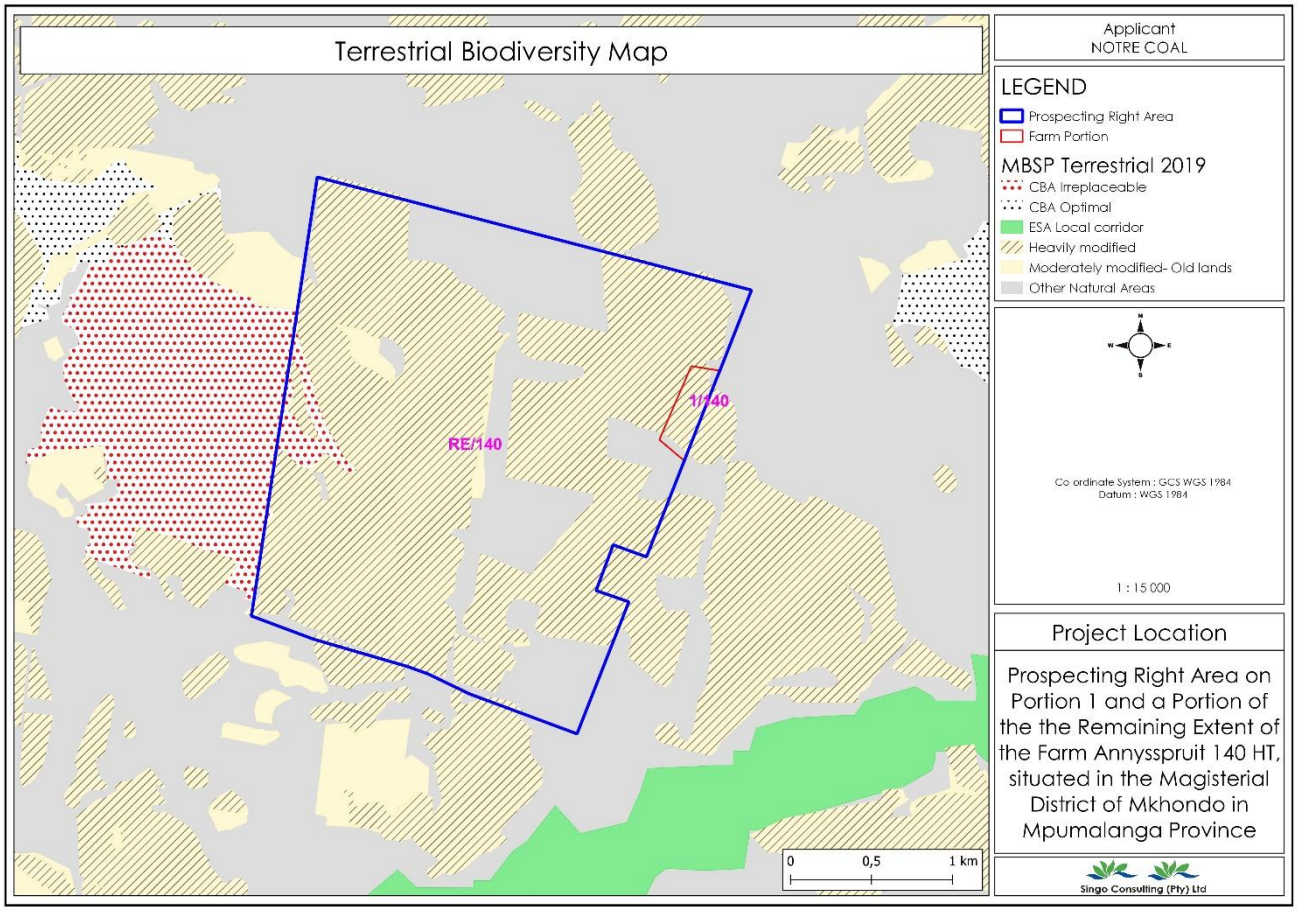


Figure 26: Biodiversity map. *(Singo Consulting (Pty) Ltd, 2022)*

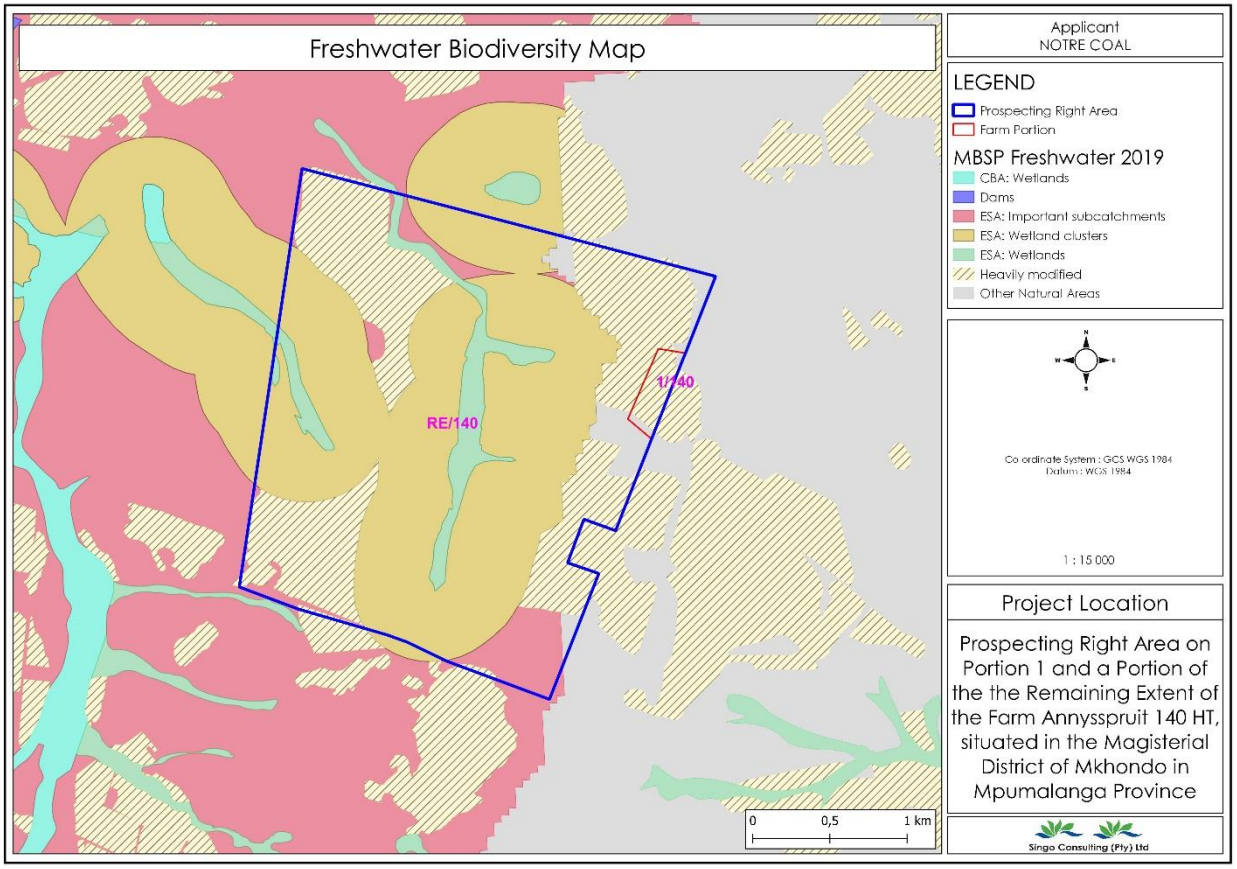


Figure 27: Freshwater map. *(Singo Consulting (Pty) Ltd, 2022)*

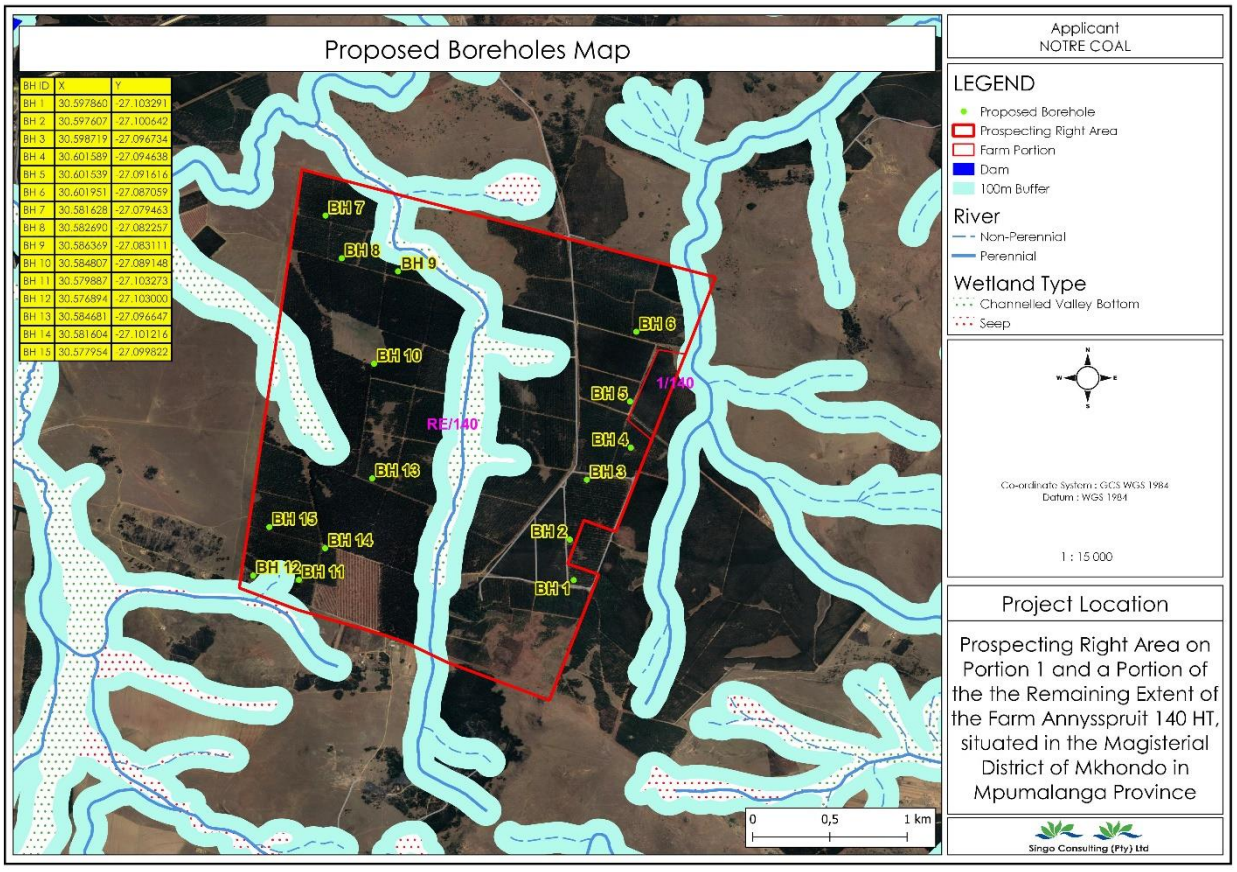


Figure 28: Proposed boreholes. *(Singo Consulting (Pty) Ltd, 2022)*

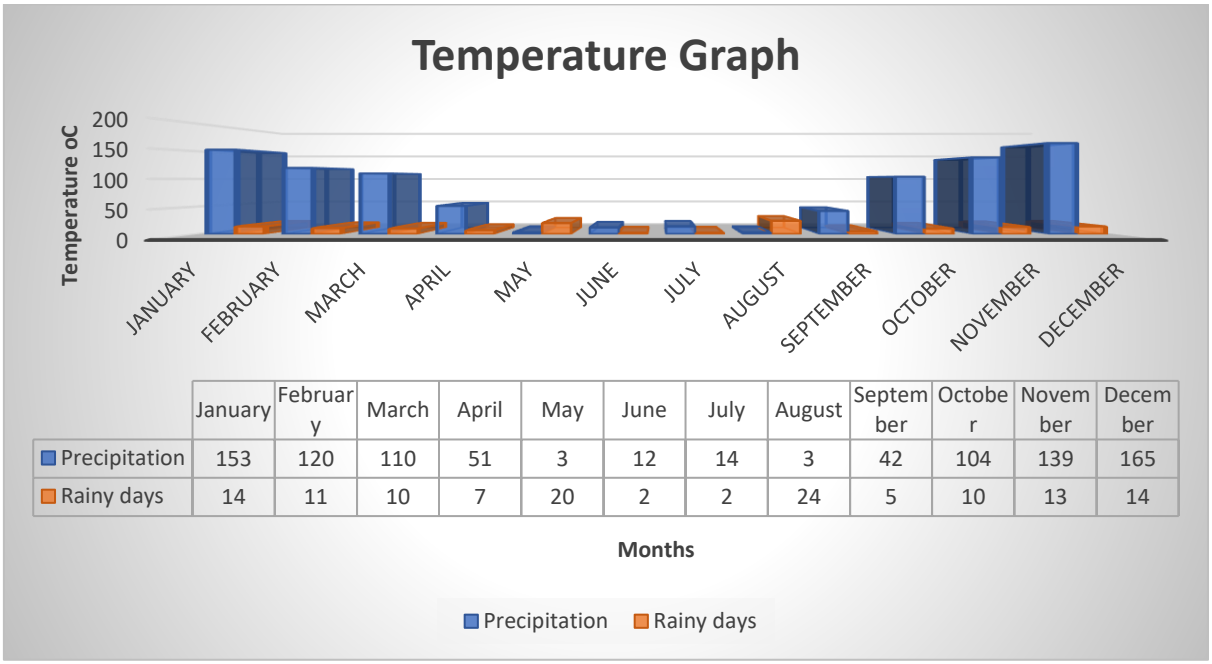
12.5 CLIMATE

Climate is the state of the atmosphere over long time periods, such as over years, decades, centuries or greater and weather is defined as atmospheric conditions of an area over a short period of time (Naomi, 2004). Climate for the purpose of the study is chosen based on the fact that it does not change over a long period of time whereas weather conditions fluctuate more rapidly, and its data cannot be relied upon.

The climate here is mild, and generally warm and temperate. According to Köppen and Geiger, this climate is classified as Cwb. In Mkhondo, the average annual temperature is 16.1 °C. About 954 mm of precipitation falls annually. Precipitation is the lowest in June, with an average of 12 mm. The greatest amount of precipitation occurs in December, with an average of 165 mm. At an average temperature of 19.5 °C, February is the hottest month of the year. The lowest average temperatures in the year occur in July, when it is around 11.0 °C. Between the driest and wettest months, the difference in precipitation is 153 mm. The variation in temperatures throughout the year is 8.4 °C.

Temperature

The project site is located where the mean annual temperature map is between 0.1- 2 Degree Celsius seen in ***Figure 29*** low and the Mean Annual precipitation ranges between 601 – 800 mm as seen in ***Figure 32.***



	January	February	March	April	May	June	July	August	September	October	November	December
Precipitation	153	120	110	51	3	12	14	3	42	104	139	165
Rainy days	14	11	10	7	20	2	2	24	5	10	13	14

Figure 29: Temperature (High and Low) at Mkhondo.

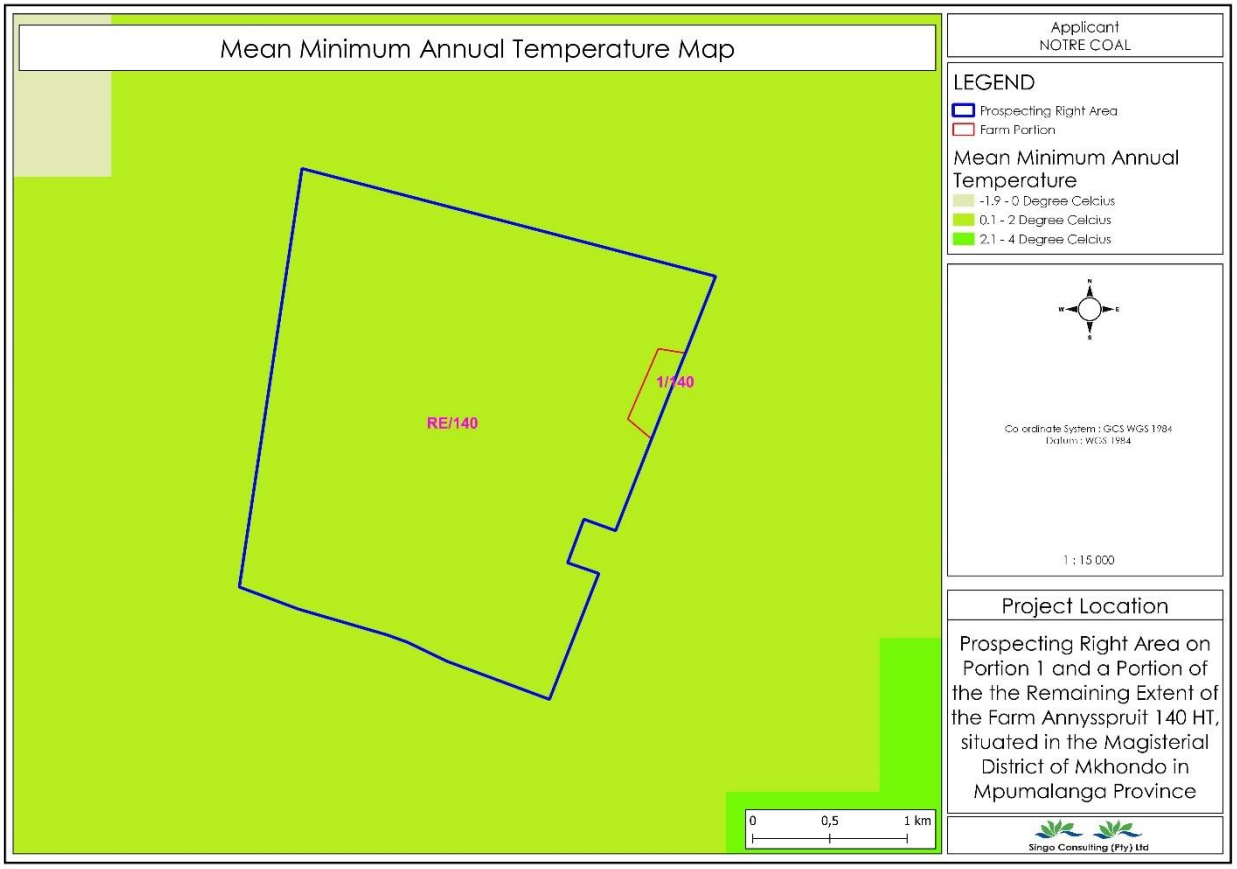


Figure 30: Average temperature graph. (Singo consulting (Pty) Ltd , 2022)

12.6 RAINFALL

The proposed project area receives mean annual rainfall of 601mm to 1000mm. The driest month is June, which receives an average of 12 mm precipitation, and the wettest month is January, which receives the most precipitation, averaging 153 mm. The mean annual rainfall for the project is shown in ***Figure 31*** below.

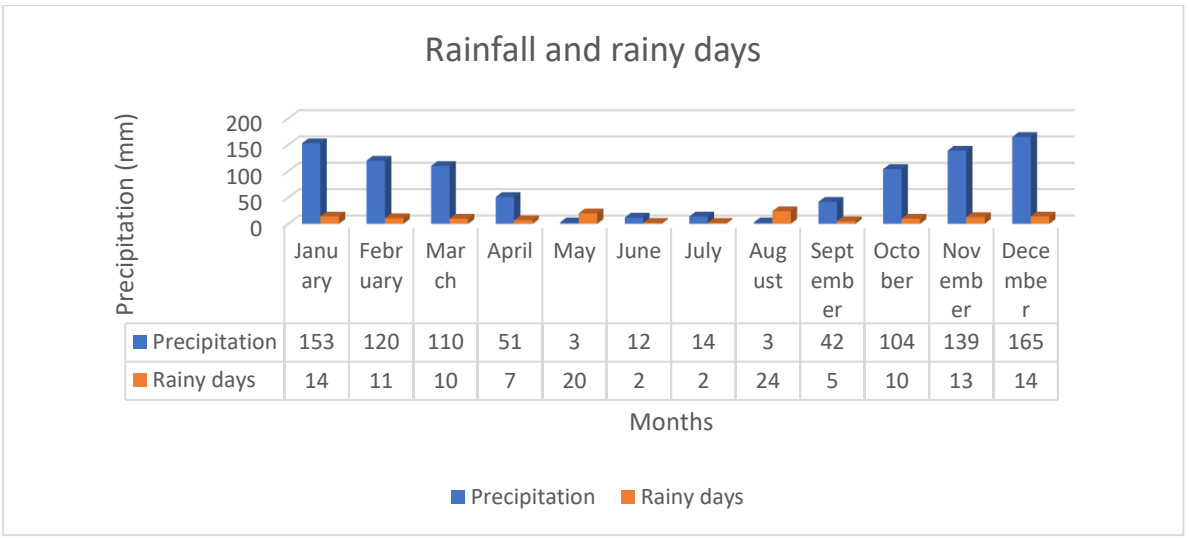


Figure 31: Precipitation data at Mkhondo

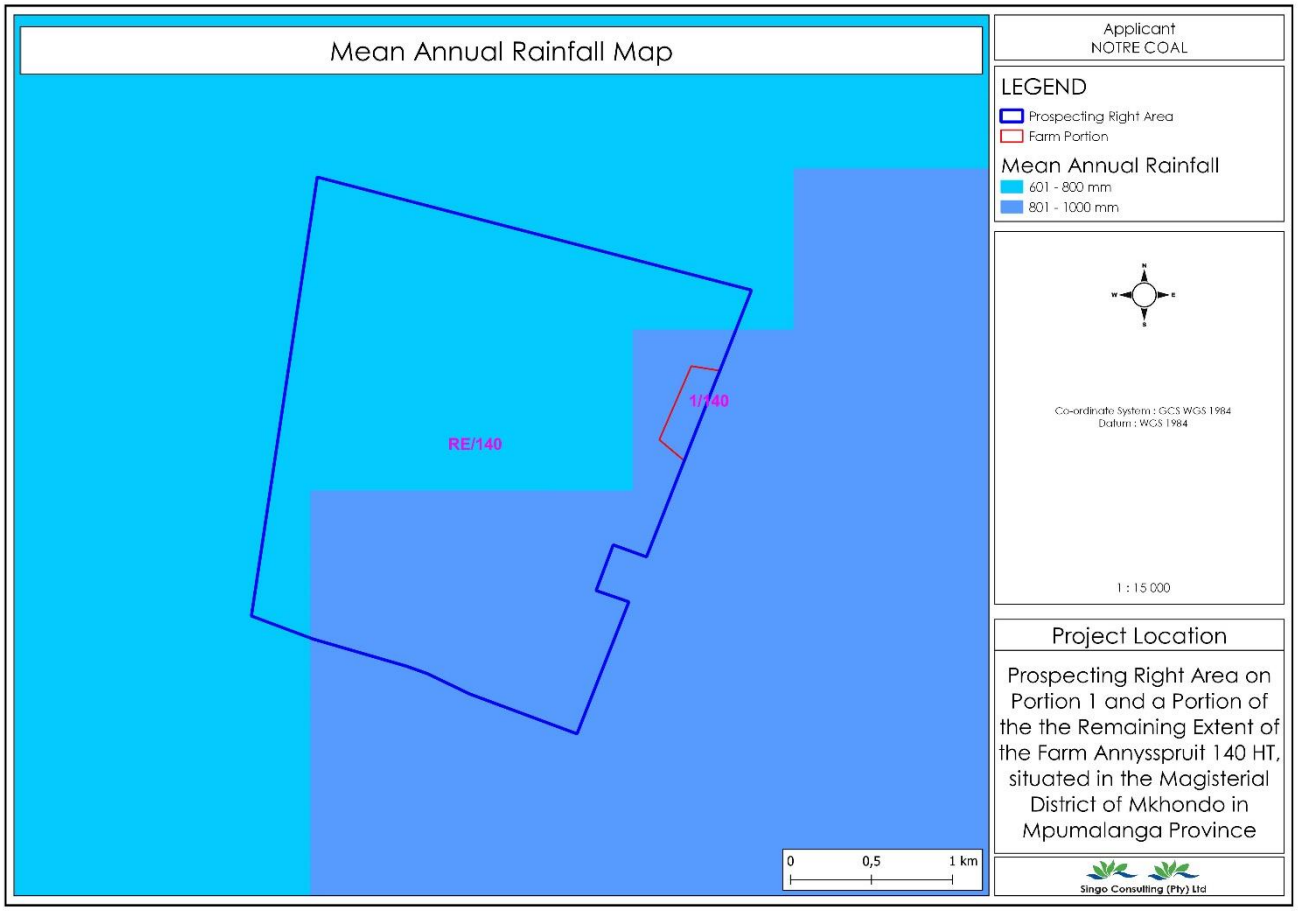


Figure 32: Mean annual rainfall for the project area. *(Singo consulting (Pty) Ltd , 2022)*

12.7 TOPOGRAPHY

The topology of the area is illustrated by ***Figure 35*** below. A Topographic map is a map which indicates, to scale, the natural features of the Earth's surface, as well as human features, with features at the correct relationship to each other *(Oxford Dictionary; 2020)*. The topography map other than showing landform features, rivers, and associated water resources, it also shows the height above sea level with the use of contour lines. Contour lines are an Imaginary line on the ground surface joining the points of equal elevation.

In this environmental project, topography is used to determine how surface water flows during rainy seasons or how it would flow during the existence of the project. The topography also influences groundwater vulnerability, as topography also influences run-off and infiltration rate by means of residence time. The map used is of 1: 15000, which implies that 1 unit of measurement on the map is equal to 15000 units of measurement on the ground.

The study area is located at average elevation of 1540 - 1900 mamsl. As shown on ***Figure 35***, the study area is characterized by Valleys, and Mountainous areas, this was observed during site. assessment, which was undertaken on the 14th of August 2022, an example of the Topography is seen on ***Figure 33***.

Slopes identified within the study area:

- **Convex Slope:** A slope which becomes progressively steeper downhill. This slope is observed along the Valley identified in the boundary of the study area in the northern direction. The contour lines with spacing interval of 20m are closely spaced with decrease in Mean above mean sea level (Mamsl).

Figure 33: Observed Topography. *(Singo consulting (Pty) Ltd , 2022)*

Landform identified includes:

- **Valley:** A valley is an elongated low area often running between hills or mountains, which will typically contain a river or stream running from one end to the other. The valley identified is found at an elevation of 1680 mamsl.

Figure 34: Valley identified onsite. *(Singo Consulting (Pty) Ltd, 2022)*

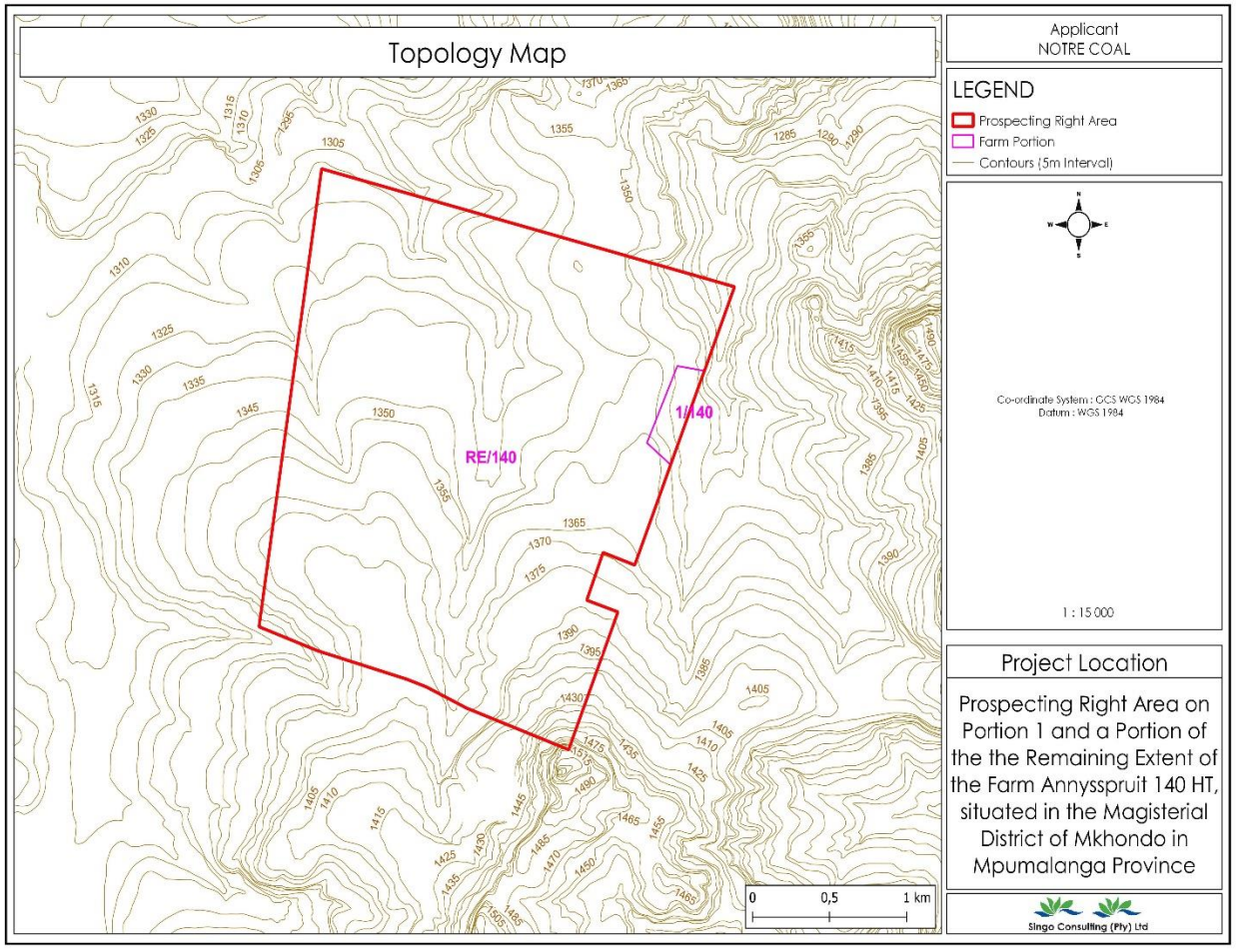


Figure 35: Topology of the application area. *(Singo consulting (Pty) Ltd , 2022)*

Drainage

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 existence.

- **Non-perennial river:** These are rivers that flow only during certain seasons. A non-perennial river flowing towards the northwestern direction. Non-perennial streams were observed during site assessment forming a dendritic pattern.
- **Perennial River:** A river which has continuous flow throughout all seasons of the year, in a particular region or area. The stream was observed along the valley found in the northern direction of the study area, flowing towards the eastern direction as seen on ***Figure 36***.
- **Seep:** A seep is referred to as a wetland and is identified at an approximate elevation of 1260 mamsl.
- **Depression:** A depression is a pan like or oval in shape wetland. Within the study area it is identified in the southwestern direction outside the boundaries of the study area at an approximate distance of 0.5 km.

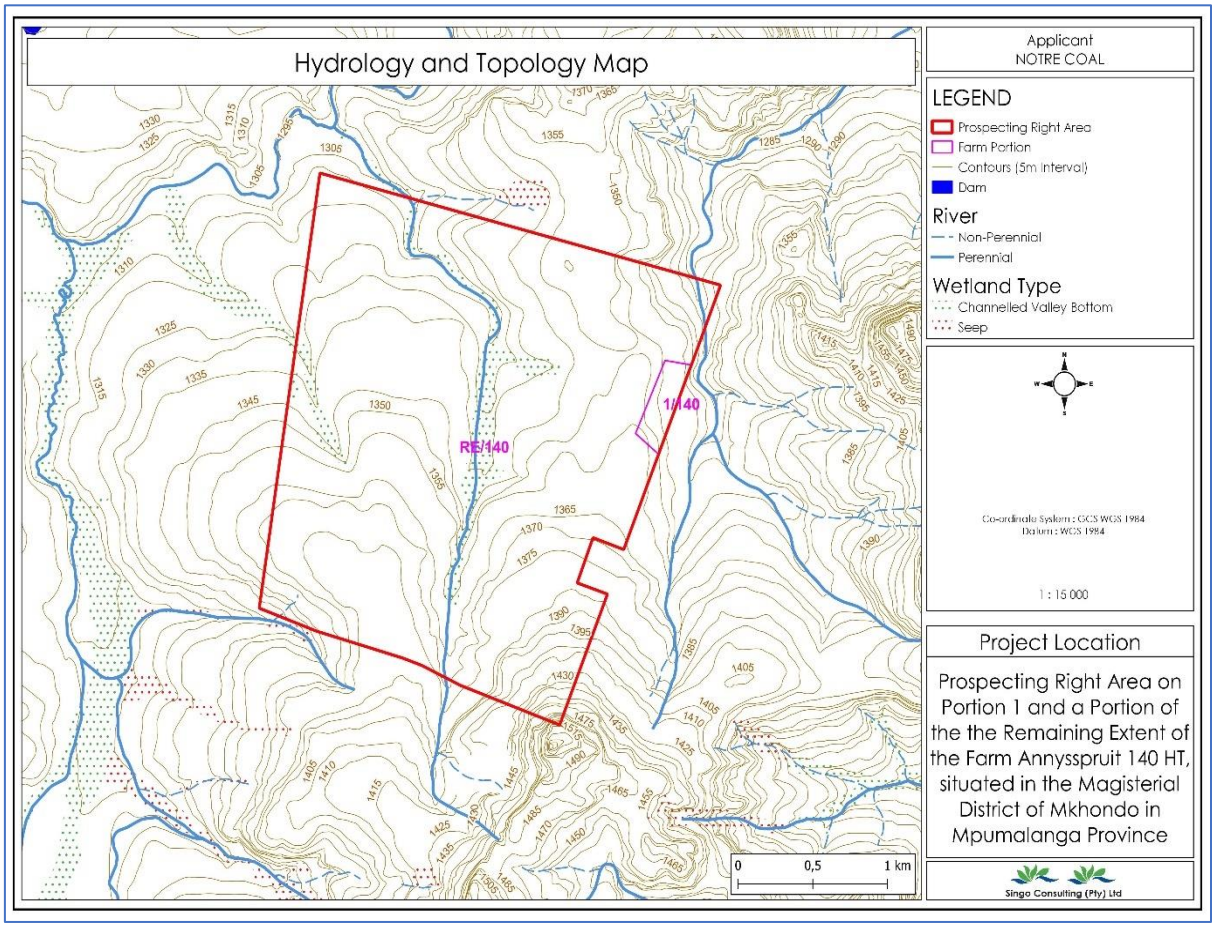


Figure 36: Drainage of the study area. *(Singo Consulting (Pty) Ltd, 2022)*

Drilling process is associated with a sump which is filled with dirty, or wastewater used during the drilling process**.** As such the sump should not be allowed to overflow since the placement of boreholes is closer to the waterbodies, as a recommendation, the sump should be on the side of the water body that is at a lower elevation, so that should overflow occur, it does not get into contact with freshwater.

The waterbodies identified were found to be within 500 m from the boundaries of the study area. There will be procedures and guidelines put in place for this project to avoid the risk of water contamination through onsite and nearby water resources, such as ensuring strict management of waste material and buffering of 100 m. It will be advised on more mitigation measures to ensure the waterbodies as seen on the hydrology map are not contaminated. As shown in ***Figure 37,*** a 100m buffer will be applied around the water bodies present within the prospecting right area.

Buffer Zones

The natural environment is still being destroyed at an alarming rate, all over the globe *(Ebregt and Greve, 2000)*. According to the National Environmental Management: Protected area Act of 2003 no 57, Buffers are areas peripheral to a specific protected area, where restrictions on resource use and special development measures are undertaken to enhance the conservation value of the protected area. Within and around the study area, there is a presence of the following identified waterbodies, the waterbodies identified and must be buffered

- Seep wetland
- Channelled valley bottom
- Dam
- Perennial river
- Non-perennial River

To ensure that such water bodies remain protected throughout the existence of the project, buffers are put in place to mitigate the impacts which such project will have on the protected area. For the proposed site, buffers in place are 100 m, which implies that the proposed project should not operate within 100m from the waterbody.

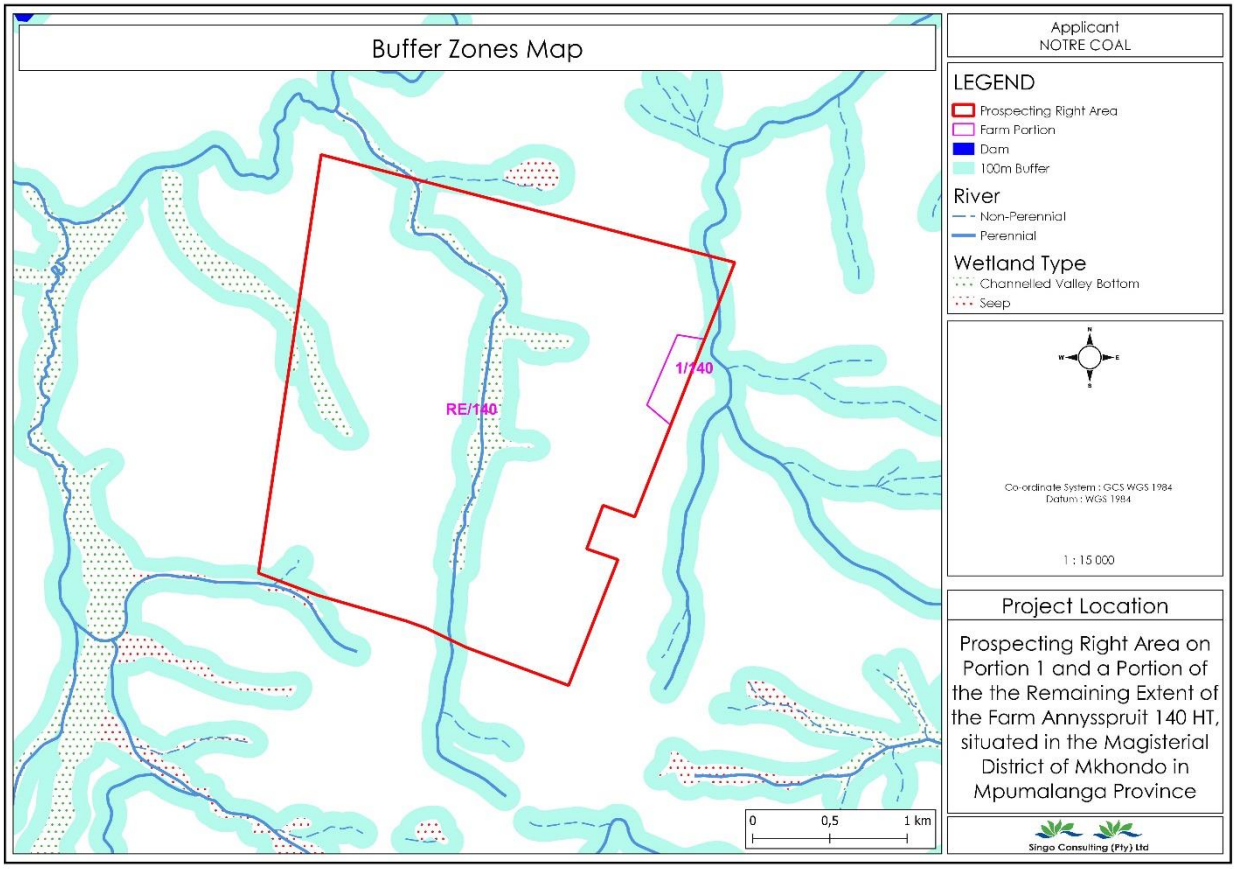


Figure 37: Buffer zone map of the project area. *(Singo consulting (Pty) Ltd , 2022)*

Catchment Information

South Africa's water resources are divided into quaternary catchments, which are the country's primary water management units *(DWAF 2011)*. In a hierarchical classification system, a quaternary catchment is a fourth order catchment below the primary catchments. The primary drainages are further classified as Water Management Areas (WMA) and Catchment Management Agencies (CMA). In accordance with Section 5 subsection 5(1) of the National Water Act, 1998, the Department of Water and Sanitation (DWS) has established nine WMAs and nine CMAs as outlined in the National Water Resource Strategy 2 (2013). (Act No. 36 of 1998). The purpose of establishing these WMAs and CMAs is to improve water governance in various regions of the country, ensuring a fair and equal distribution of the Nation's water resources while ensuring resource quality is maintained.

The study area falls within the Inkomati- Usutu Water Management Area (WMA) as shown on ***Figure 38***. The quaternary catchment is W51A. The WRC 2012 study, presents hydrological parameters for each quaternary catchment including area, mean annual precipitation (MAP) and mean annual runoff (MAR).

Table 16: WRC 2012 Report, WMA, QC

Quaternary Catchment	Water Management Area	S-Pan Evaporation		Rainfall		
		Evaporation Zone	MAE (mm)	Rainfall Zone	MAP (mm)	Catchment Area
W51A	Inkomati-Usuthu water management	13A	1400	W5A	922	624

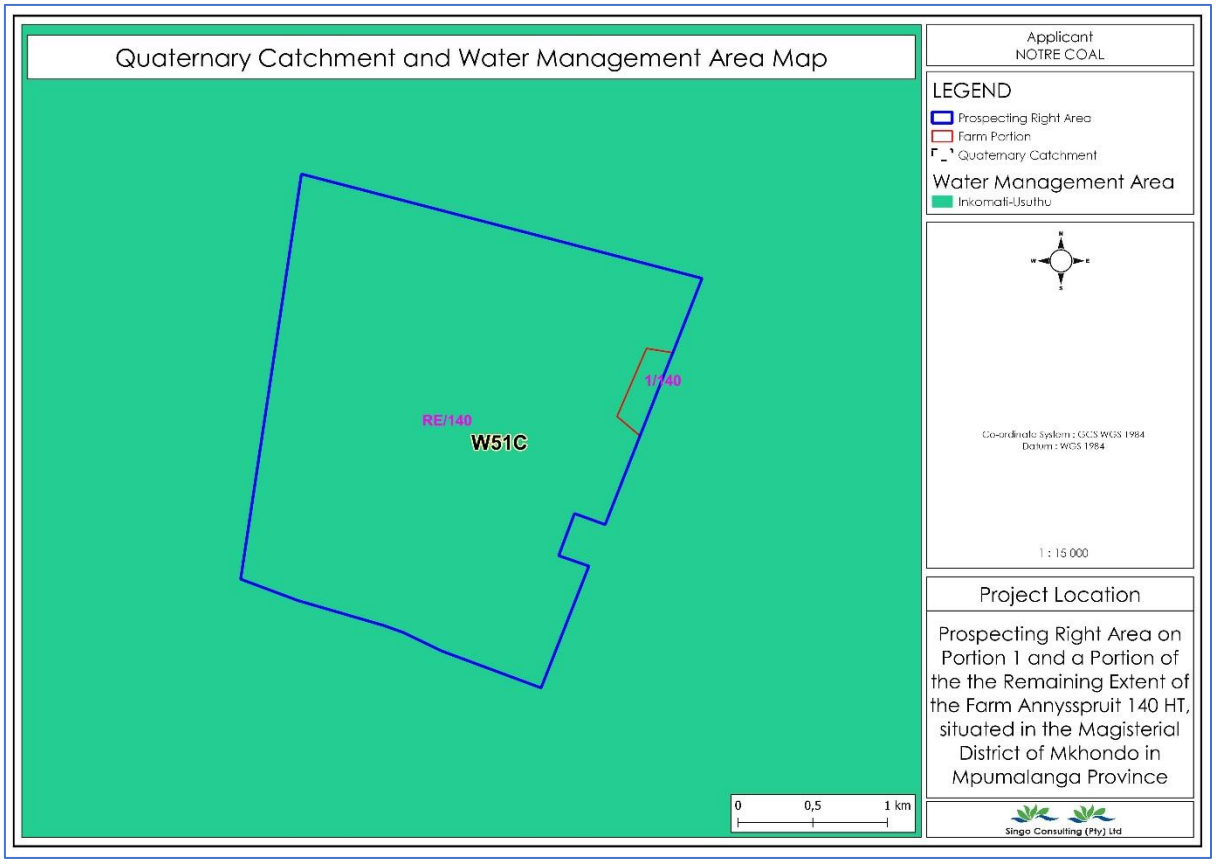


Figure 38: Quaternary Catchment of the study area. *(Singo consulting (Pty) Ltd , 2022)*

12.8 HYDROLOGY

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 on the 14th of August 2022 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 (see ***Figure 39*** below).

Figure 39: Perennial River on the proposed area. *(Singo consulting (Pty) Ltd , 2022)*

The hydrology map illustrates the following water bodies exists within, around or outside the project area:

- Non – perennial river
- Perennial river
- Channelled Valley Bottom
- Seep

According to MTPA (***Figure 40***), a portion of the area is a CBA wetland and aquatic species which are areas with a high biodiversity significance and are needed to meet biodiversity targets. In addition, parts of the proposed area are within an ESA wetland which is the ideal option for supporting the ecological functioning of critical biodiversity and needs to be maintained. A buffer map was produced to ensure that no impact results on the water bodies that are not within the borrow pits.

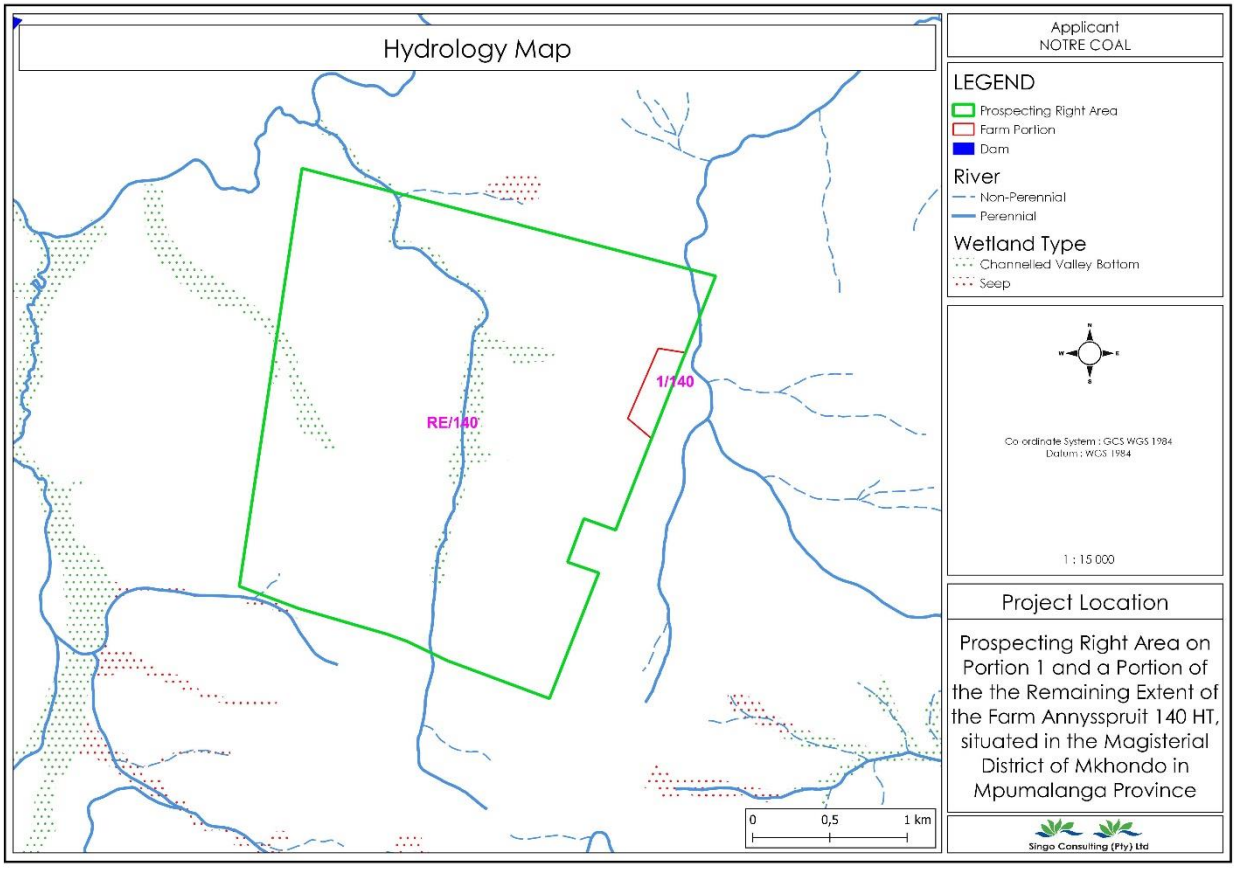


Figure 40: Hydrology Map. *(Singo consulting (Pty) Ltd , 2022)*

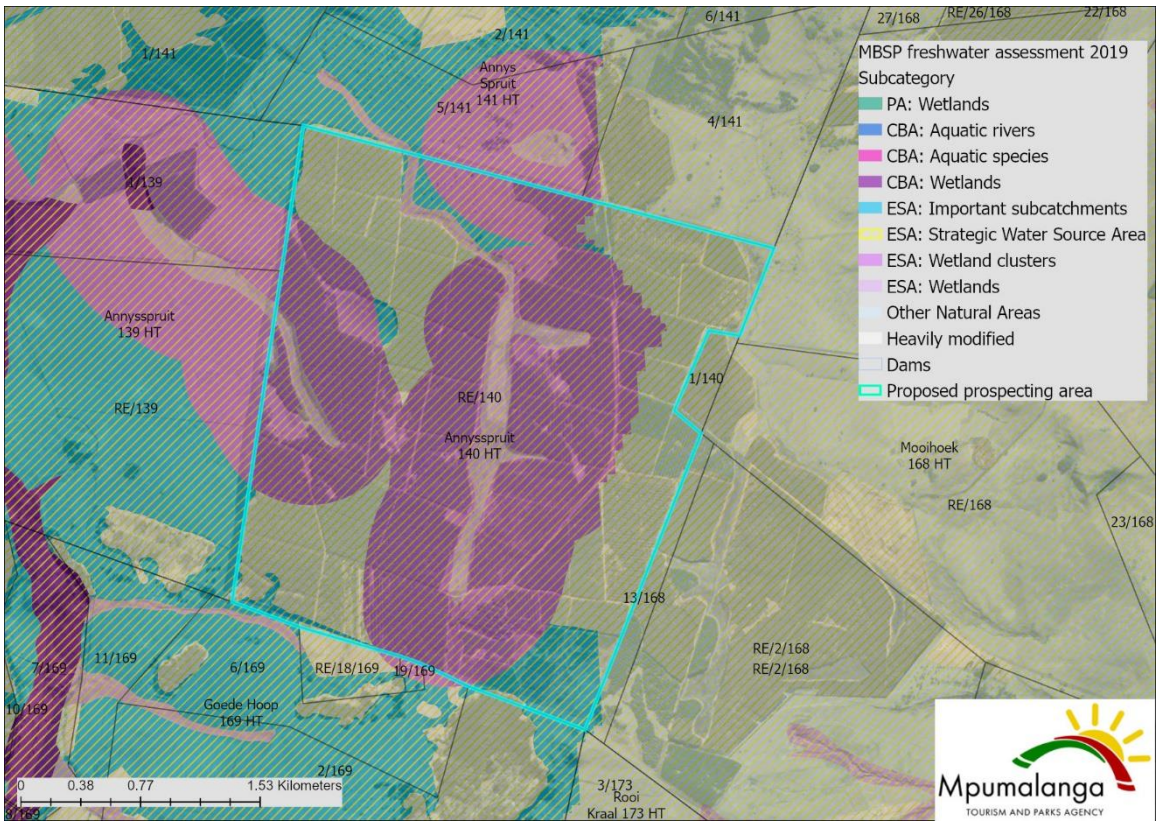


Figure 41: MBSP freshwater assessment 2019. *(MTPA, 2022)*

Aquifer Classification

The **Error! Reference source not found.** below illustrates aquifer classification of different areas in S outh Africa. It can be deduced that the project area at **magisterial district of Mkhondo** comprises of minor aquifers and the dominant water source is surface water. **Error! Reference source not found.** interprets the meaning of the aquifer classification and when an area is said to have minor aquifer it means that the aquifer is low yielding or unacceptable quality aquifer.

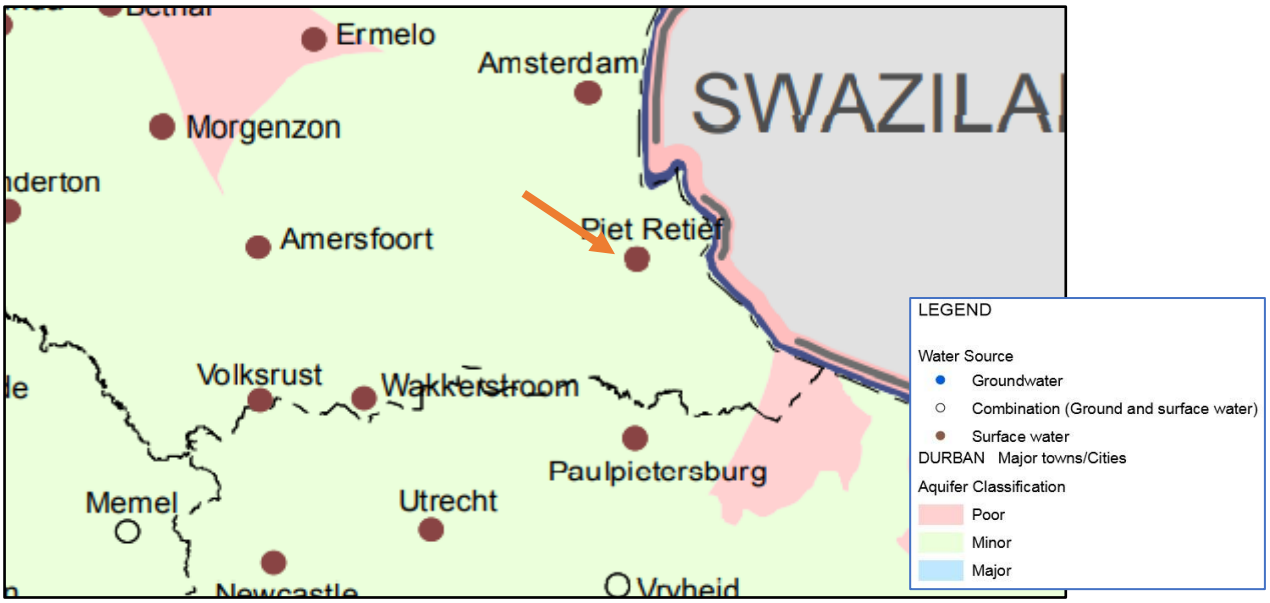


Figure 42: Aquifer Classification of the study area. *(Vegter & Seymour,2012).*

Table 17: Aquifer characterization

Sole source aquifer	**An aquifer used to supply 50% or more of urban domestic water for a given area, for which there are no reasonably available alternative sources should this aquifer be impacted upon or depleted.**
Major aquifer region	High-yielding aquifer of acceptable quality water.
Minor aquifer region	Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.
Poor aquifer region	Insignificantly yielding aquifer of good quality or moderately yielding aquifer of poor quality, or aquifer that will never be utilised for water supply and that will not contaminate other aquifers.

Drilling and sitting of boreholes.

Exploration boreholes will be dug one at a time at various locations throughout the proposed project area. Drill hole depths will average 100 meters and will be determined onsite as the drilling program advances, depending on past hole depths and dips. Between certain wetlands and waterways, a 100-meter buffer will be maintained. A 100-meter buffer must be maintained from public highways.

After the drill site has been gated off, cleared, and drilled, drilling will begin. Following the drilling, immediate rehabilitation will take place. The site will be repaired after each hole is drilled before the drilling crew moves on to the next planned hole. This procedure will be repeated until all holes have been drilled

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 to not 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.

12.9 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 below sourced from the screening report, the proposed project area has low sensitivity of Archaeological and Cultural Heritage combined. During a brief site assessment, no Archaeological or Cultural Heritage areas were observed.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

Figure 43: Archaeological and cultural heritage theme sensitivity. *(Source: screening report)*

19. MITIGATION MEASURES

19.1 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 because 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 next to the proposed project area who are the closest sensitive receptors. These sensitive receptors are approximately 796 m from the closest borehole (BH11). 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.

19.2 Environmental aspects which may require protection and/or remediation

A perennial river has been identified within the proposed project area and is approximately 195 m from the nearest proposed borehole (BH 9). 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.

20. DESCRIPTION OF THE CURRENT LAN USES

The application area is served by gravel roads which are in reasonable condition. The noticeable environment features on site includes water bodies, plantations, residential houses, and schools' infrastructure features.

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

- Natural Vegetation (Cattle farming)
- Plantation
- Built-up area (Homesteads)
- Unpaved roads
- Waterbodies
- Wetlands
- Cultivated land
- Mines
- Bare Land

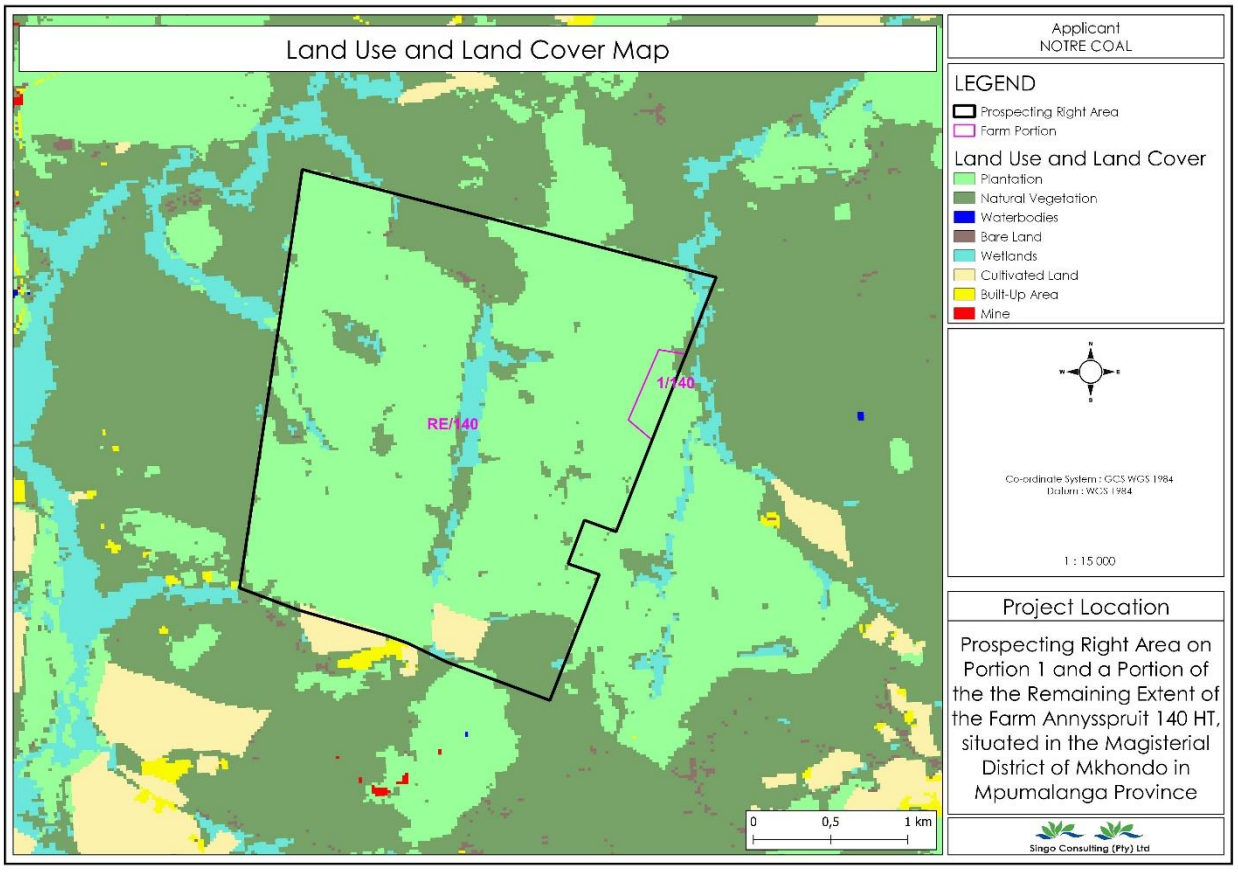


Figure 44: Land use map. *(Singo Consulting (Pty) Ltd, 2022)*

20.1 Description of specific environmental features and infrastructure on the site

The study area is currently and largely covered with Plantations and wetlands.

Plantations

A plantation is an agricultural estate, generally cantered on a plantation house, meant for farming that specializes in cash crops, usually mainly planted with a single crop, with perhaps ancillary areas for vegetables for eating and so on. The crops that are grown include cotton, coffee, tea, cocoa, sugar cane, opium, sisal, oil seeds, oil palms, fruits, rubber trees and forest trees. Protectionist policies and natural comparative advantage have sometimes contributed to determining where plantations are located

Figure 45: Plantations observed onsite. *(Singo Consulting (Pty) Ltd, 2022)*

Wetland

According to the National Water Act (Act 36 of 1998), wetlands are land that is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

Figure 46: Waterbody identified onsite *(Singo Consulting (Pty) Ltd, 2022)*

20.2 Environmental and current land use map

(Show all environmental, and current land use features)

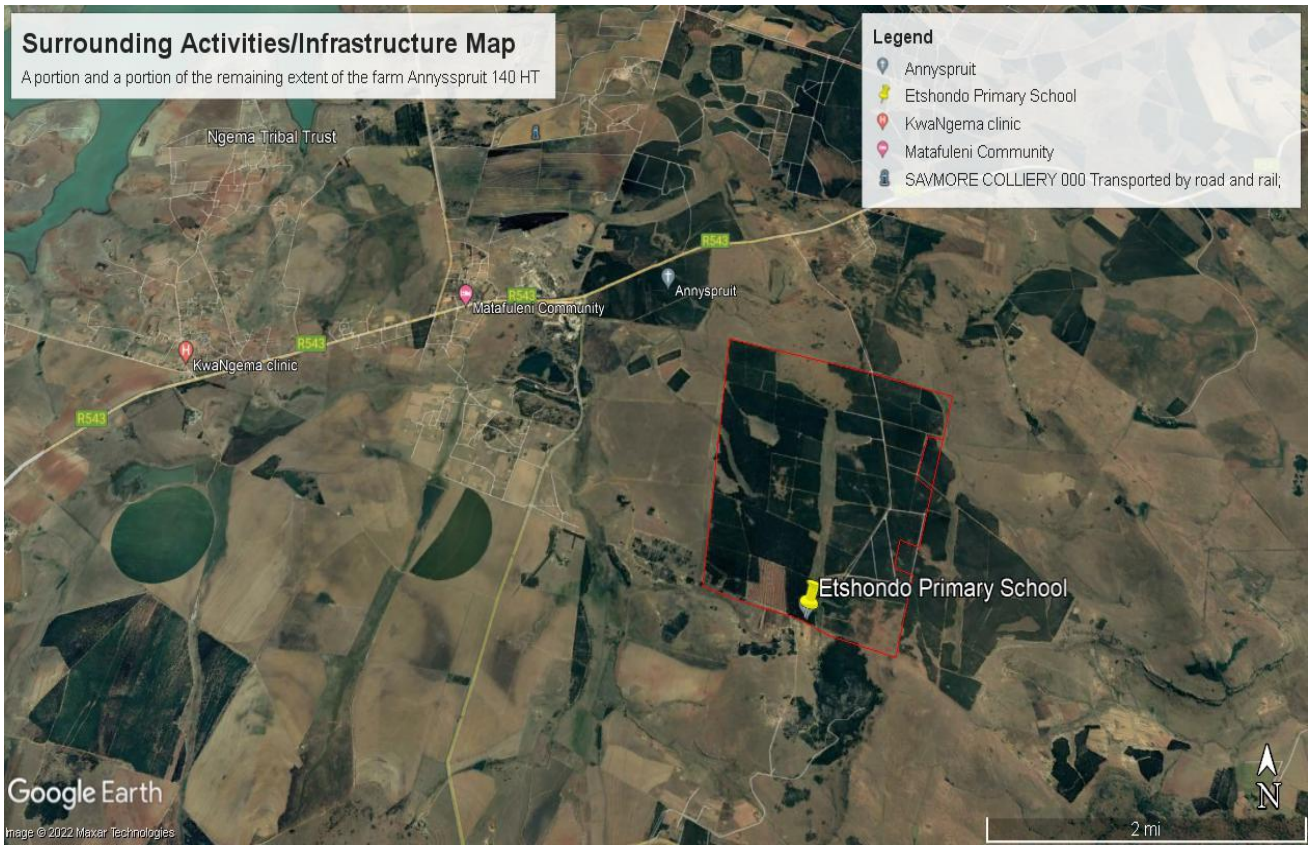


Figure 47: Google Earth view of activities in and around the proposed project site. *(Singo Consulting (Pty) Ltd, 2022)*

21. 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).

A "significant impact" is defined as it is defined in the EIA Regulations (2014): "an impact that may have notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence". The objective of this EIA methodology is to serve as a framework for accurately evaluating impacts associated with current or proposed activities in the biophysical, social and socio-economical spheres. It aims to ensure that all legal requirements and environmental considerations are met in order to have a complete and integrated environmental framework for impact evaluations.

The process of determining impacts to be assessed is one of the most important parts of the environmental impact assessment process. It is of such high importance because the environmental impacts identified can and are often linked to the same impact stream. In this method all impacts on the biophysical environment are assessed in terms of the overall integrity of ecosystems, habitats, populations and individuals affected.

The Environmental Impact Assessment (EIA) 2014 Regulations promulgated in terms of Sections 24 (5), 24M and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA), requires that all identified potential impacts associated with the proposed project be assessed in terms of their overall potential significance on the natural, social and economic environments. The criteria identified in the EIA Regulations (2014) include the following:

- Nature of the impact;
- Extent of the impact;
    - Duration of the impact
    - Probability of the impact occurring;
    - Degree to which impact can be reversed;
    - Degree to which impact may cause irreplaceable loss of resources;
    - Degree to which the impact can be mitigated; and
    - Cumulative impacts.

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 18: Impact Severity rating

Category	Description/definition
High	Impacts will be of high significance if one of the following applies: • 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: • 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: • The extent is local • The duration is temporary to permanent • The severity is low • The probability is probable
Very low	Impacts will be of very low significance if one of the following applies: • 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 the table below

Table 19: 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
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

Rating	Severity		Spatial scale	Duration	Probability
	Environmental	Social/cultural heritage			
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 20: Impact significance.

Probability/Likelihood	Consequence (severity + scale + duration)								
	1	3	5	7	9	11	15	18	21
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 21: 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 22: 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 23*: 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 drill site. 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 24: 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: 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 25: 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 5: 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 26: 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 6: 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 27: 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 7: 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 28: 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 fully replaced in their original state due to the alteration of physical, chemical and biological soil properties during removal of vegetation. The cumulative impact on regional land capability and land use is low due to the land use being predominately used for agriculture and a natural vegetation. 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 perennial river and a channeled valley bottom at 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.

Table 29: 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

22. 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 30: Sensitivity Criteria tables

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

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

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

EXTENT = SPATIAL SCOPE OF IMPACT/ FOOTPRINT AREA / NUMBER OF RECEPTORS	***RATING***
Limited: impact affects the prospecting 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*

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 31: ***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 general workers may be employed	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
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

		Noise	Increased noise levels which can disturb nearby landusers, community and animals.	2	4	2	2	1.0	2.7	2.3	2.3	Moderate	Reduce speed limit to 20 km/hr on access roads; Service Vehicles and other machinery regularly	*1*	4	2	2	0.4	2.3	2.2	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*

		Surface and ground water		*2*	*5*	*4*	*1*	*0,8*	*3,7*	*2,3*	*1,9*	*Low*	*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);*	*2*	*5*	*5*	*2*	*0,6*	*4,0*	*3,0*	*1,8*	*Low*

													Hydrocarbons and explosives storage facilities must be in a hard park bunded facility; and *Vehicles with leaks must have drip trays in place.*									
		Crops	*Clearance of crops where borehole is to be drilled*	*3*	*1*	*1*	*1*	*1, 0*	*1, 7*	*1,3*	*1, 3*	*Low*	*Drilling will only occur after harvest. Drilling will occur during the dry seasons. Area will be rehabilitated immediately to prepare for planting of seeds*	*2*	*1*	*1*	*1*	*1, 0*	*1, 3*	*0, 8*	*0, 8*	*Very low*

		Soil	Soil compaction.	3	1	1	1	0,8	1,7	1,3	1,1	Low	If possible, vegetation clearance can be scheduled to coincide with low rainfall conditions when soil moisture is anticipated to be relatively low such that the soils are less prone to compaction (during dry seasons) The movement of heavy vehicle (drill rig) should be limited to existing roads.	2	1	1	1	0,8	1,3	1,2	0,9	Very low

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*	*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); and* *Vehicles with*	*2*	*5*	*5*	*2*	*0, 6*	*4, 0*	*3, 0*	*1, 8*	*Low*

													leaks must have drip trays in place.									

		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,*	*2*	*3*	*1*	*1*	*0, 4*	*2, 0*	*1, 5*	*0, 6*	*Very low*

													1973 (Act No. 15 of 1973); andVehicles with leaks must have drip trays in place.									

		Fauna	*Loss or health risks to nearby fauna*	*4*	*4*	*2*	*1*	*1.0*	*3.3*	*2.2*	*2.2*	*Moderate*	*Ensure that the fuel and other strong hazardous chemicals are used away from sensitive animal habitats (e.g barrowing animals habitats)* *Close all the chemical containers after us.*	*4*	*2*	*2*	*1*	*0.2*	*2.7*	*1.8*	*0.4*	*Low*

		Flora	Loss or health risks to nearby flora	4	4	2	0.8	1.0	3.3	2.2	2.2	Moderate	Ensure that the fuel and other strong hazardous chemicals are used away from sensitive animal habitats (e.g barrowing animals habbitats) Close all the chemical containers after us.	4	2	2	1	0.2	2.7	1.8	0.4	Low

		Groundwater	*Groundwater contamination*	*4*	*3*	*1*	*2*	*0, 6*	*2, 7*	*2,3*	*1, 4*	*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*	*2*	*2*	*1*	*1*	*0, 4*	*1, 7*	*1, 3*	*0, 5*	*Very low*

													hydrocarbons must be managed according to the Hazardous Substances Act, 1973 (Act No. 15 of 1973); and *Vehicles with leaks must have drip trays in place.*									
4,0	*4. Site clearance as a result of the preparations for temporary surface infrastructure.*	*Air Quality*	*Dust generation emanating from the activities associated with prospecting*	*4*	*4*	*1*	*3*	*1,0*	*3,0*	*3,0*	*3,0*	*Moderate*	*The area of disturbance must be restricted to the required footprint size;* *Ensure that only vegetation within the designated areas is removed;* *Gravel roads to be wetted by a water browser and/or any applicable dust*	*3*	*3*	*1*	*2*	*0,8*	*2,3*	*2,2*	*1,7*	*Low*

													suppressant so as to reduce dust plumes.									
		Topography and Visual Environment	*Disturbance of scenery due to site and machinery*	*3*	*1*	*1*	*1*	*1, 0*	*1, 7*	*1,3*	*1, 3*	*Low*	*Machinery and site set up will only be present during the specified, communicated and agreed upon timeframe.*	*2*	*1*	*1*	*1*	*1, 0*	*1, 3*	*1, 2*	*1, 2*	*Low*
			Soil erosion and generation of dust.	*3*	*3*	*1*	*2*	*0, 8*	*2, 3*	*2,2*	*1, 7*	*Low*	*Dust can be mitigated by suppressants so that the construction phase does not produce bursts of dusts* *Speed will be limited to 30km/hr on the site and close access roads.*	*3*	*2*	*1*	*2*	*0, 6*	*2, 0*	*2, 0*	*1, 2*	*Low*

			Soil compaction.	*3*	*3*	*1*	*1*	*0, 8*	*2, 3*	*1,7*	*1, 3*	*Low*	*If possible, vegetation clearance and commencement of related activities (construction of haul road), can be scheduled to coincide with low rainfall conditions when soil moisture is anticipated to be relatively low such that the soils are less prone to compaction;* *The movement of heavy vehicle should be limited to existing roads*	*2*	*2*	*1*	*1*	*0, 8*	*1, 7*	*1, 3*	*1, 1*	*Low*
			Loss of land capability and land use potential	*3*	*1*	*1*	*1*	*0, 8*	*1, 3*	*1,2*	*0, 9*	*Very low*	*• Any compacted soils must be ripped to alleviate compaction;* *• The footprint should be re-vegetated with the indigenous*	*2*	*1*	*1*	*1*	*0, 6*	*1, 3*	*1, 2*	*0, 7*	*Very low*

												species as soon as possible									
			Loss of vegetation communities.	*4*	*3*	*2*	*2*	*0, 6*	*3, 0*	*2,5*	*1, 5*	*Low*	*• 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 100m away from plantations and sensitive species.*	*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*	*• 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 of 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 Crinum species must be relocated to suitable habitat. • Input of sediment due to any related prospecting activities should be prevented at all cost. • Pollution of the*	*2*	*4*	*4*	*1*	*0, 6*	*3, 3*	*2, 2*	*1, 3*	*Low*

													surface and groundwater. Mitigation for this potential impact includes: *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 include fuel, oil, cement, bitumen etc.;* *o Surface water*									

													draining off contaminated areas containing oil and petrol would need to be channeled towards a sump which will separate these chemicals and oils; *o No uncontrolled discharges of water from the mine to any surface water resources shall be permitted. Any discharge points need to be approved by the relevant authority.*										

			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:• 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*	*2*	*4*	*4*	*1*	*0,6*	*3,3*	*2,2*	*1,3*	*Low*

													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 grass species.• After construction, the land must be cleared of										

													rubbish, surplus materials, and equipment, and all parts of the land must be left in a condition as close as possible to that prior to construction.										

			Erosion and subsequent sedimentation or pollution of proximate moist grassland (watercourse).	*3*	*3*	*1*	*1*	*0, 8*	*2, 3*	*1,7*	*1, 3*	*Low*	*• 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,*	*3*	*2*	*1*	*1*	*0, 6*	*2, 0*	*1, 5*	*0, 9*	*Very low*

													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.									
		Surface and ground water	*Siltation of surface water resources.*	*3*	*2*	*1*	*2*	*0,8*	*2,0*	*2,0*	*1,6*	*Low*	*• Ensure site clearing is limited to the designated areas*	*2*	*1*	*1*	*1*	*0,6*	*1,3*	*1,2*	*0,7*	*Very low*
			Contamination of water resources	*3*	*2*	*1*	*2*	*0,8*	*2,0*	*2,0*	*1,6*	*Low*	*• Ensure that no infrastructure, containers or machinery is leaking during the construction phase.*	*2*	*1*	*1*	*1*	*0,8*	*1,3*	*1,2*	*0,9*	*Very low*

													• *Groundwater monitoring of the water quality and levels must take place. A tray or cover must be in place for objects with hazardous substances to avoid any possible leaks/spillage.*									

		Noise	Noise emanating from the construction of the site and vehicles impacting on surrounding sensitive receptors.	3	2	1	2	0,6	2,0	2,0	1,2	Low	• Ensure site clearing activities are only undertaken during daylight hours; • Ensure equipment and machinery is switched off when not in use.	2	2	1	2	0,6	1,7	1,8	1,1	Low
5,0	Vehicular activity.	Air Quality	Fugitive dust generation emanating.	3	3	1	2	0,8	2,3	2,2	1,7	Low	• Ensure the area of disturbance during the prospecting activities is restricted to the extent of the drilling area • Ensure that dust suppressants are applied to gravel	2	3	1	2	0,6	2,0	2,0	1,2	Low

													or unpaved roads that are in use; • Vehicles will obey speed limits. Maintenance equipment and heavy vehicle speeds should be reduced, where possible, to prevent dust emissions.									
		Topography and Visual Environment	Topography change and disruption of surface water flow	3	2	1	2	0,8	2,0	2,0	1,6	Low	• Ensure that existing access roads are used as much as possible. • Ensure that dust suppressants are applied to gravel or unpaved roads that are in use; and • Vehicles will obey speed limits.	2	2	1	1	0,6	1,7	1,3	0,8	Very low

		Soil	Soil contamination and degradation.	3	3	1	2	1,0	2,3	2,2	2,2	Moderate	• 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	2	3	1	2	0,8	2,0	2,0	1,6	Low

													facility; and• Vehicles with leaks must have drip trays in place.									
		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*	*• 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	*Contamination and sedimentation of the wetland systems and aquatic ecosystems*	*2*	*2*	*1*	*2*	*1,0*	*1,7*	*1,8*	*1,8*	*Low*	*• 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*	*2*	*1*	*1*	*2*	*0,6*	*1,3*	*1,7*	*1,0*	*Low*

													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.									
		Surface Water	Contamination and sedimentation of clean water resources.	3	2	1	2	0,8	2,0	2,0	1,6	Low	• 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 arounhd project area to identify	2	1	1	1	0,6	1,3	1,2	0,7	Very low

												potential contamination.									
		Noise	*noise emanating from prospecting and vehicular activities impacting on surrounding sensitive receptors.*	*4*	*4*	*1*	*2*	*1,0*	*3,0*	*2,5*	*2,5*	*Moderate*	• *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 to*	*2*	*4*	*4*	*1*	*0,8*	*3,3*	*2,2*	*1,7*	*Low*

													the Management Plan.									
		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*	*• 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 to the Management Plan.*	*2*	*2*	*1*	*2*	*0, 4*	*1, 7*	*1, 8*	*0, 7*	*Very low*

6,0	*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*	*• 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	• 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	• The sewer waster collected from the workings must be disposed of at a licensed sewage treatment facility; • Monitor surface water resources up and downstream of	3	2	1	2	0,6	2,0	2,0	1,2	Low

													the Project area to identify potential contamination; *• Remove core log after analysis* *• Waste must be separated at source and stored in appropriately designated areas for disposal at a licensed facility or by a reputable contractor.*										

22.1 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)

The proposed prospecting activities to be undertaken include the use of both invasive and non-invasive prospecting techniques. There will therefore be physical disturbance to the application area although this disturbance will be limited to the identified borehole sites and not the entire application area. Another negative impact of the proposed activity would be the interference with landowners or communities and the existing land uses. The actual invasive work only covers a few properties within the application area itself and therefore the disturbance due to invasive work will be minimal.

The positive impact of the proposed activity is the discovery of an economically viable mineral resource within the identified Local Municipalities, whose economy is dependent of the mining industry.

It should be noted that this report made available to I&APs for review and comment and their comments and concerns will be taken into account in this BAR & EMPr. Furthermore, it should be noted that the impact scores themselves will include the results of the public response and comment. Please refer to Section 21 for the Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.

The following provides a description and assessment of the potential impacts identified in the impact assessment process. The topographical and geophysical surveys will see an increase in the use of access tracks by vehicles driving around the site. The access roads may over time and continuous use deteriorate and become damaged. The potential exists for a group of unfamiliar workers to enter the project area during the prospecting activities. This impact could potentially affect the local communities; however, the impact will be minimal as people on site will be limited to the Applicant, contractor, and geologists for the topographical and geophysical surveys.

Access to the application area for the topographical and geophysical survey, prospecting drilling and resource definition drilling will be required which may interrupt the existing land uses, such as grazing and residential developments. However, this impact will be minimal as it is of short duration. Approximately 0,9 ha of vegetation will be cleared during prospecting, however, care will be taken to be ensure that any protected species identified are relocated outside the footprint of the prospecting activities. Provisions have been made for the rehabilitation of all areas disturbed during prospecting, including access tracks.

The prospecting activities will generate general waste during the construction/ operational phase. This waste must be collected during site visits to be disposed of at appropriate landfill sites.

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.

22.2 POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK

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

The following sections provide a description and assessment of the mitigation measures for each potential impact identified in the impact assessment process. The impact scores below are reflective of the impacts post the implementation of mitigation measures. A second score indicating the final significance of each potential impact is also reflected below. This score indicates the degree of potential loss of irreplaceable resources, the cumulative nature of the impact, as well as the degree of public concern regarding the impact. It should be noted that this report will be made available to I&AP's for review and comment and their comments and concerns will be addressed in the final report to be submitted to the DMRE for adjudication. Furthermore, it should be noted that the impact scores themselves will include the results of the aforementioned public response and comment. The results of the public consultation will be used to update the impact scores upon completion of the public review period, where after the finalized report will be submitted to the DMRE for adjudication.

The following mitigation types have been associated with the potential impacts identified:

- 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).
- Remedy through application of mitigation measures in EMPr.
- Avoid and control through implementation of preventative measures (e.g., monitoring, communication with landowners, emergency response procedures).
- Avoid through implementation of preventative measures (e.g., consultation and communication).
- Avoid and remedy impacts and risks to the community through ongoing communication with the community. In this regard, quarterly community meetings shall be held with the affected communities.
- 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).
- Avoid through preventative measures (e.g., bunding, spill kits).
- No invasive prospecting activities to be undertaken within 500m of a watercourse.
- Should any watercourse be affected, then the necessary water use licenses should be obtained from the Department of Water and Sanitation.
- No ablution of site laydown areas is to be located within 500m of a watercourse.
- Where shallow aquifers are encountered, a survey of the drinking water/ livestock watering boreholes should be undertaken (within 100 m of the prospecting borehole sites). A detailed groundwater monitoring programme should be developed for these drinking water/ livestock watering boreholes and pre- and post-prospecting water quality samples should be taken.
- 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).

The following impacts will result from the proposed prospecting activities:

- Job creation
- Clearance of vegetation
- Compacting of soils
- Drilling impact on identified lithic scatters
- Deterioration and damage to existing access roads and tracks
- Safety and security risks to landowners and lawful occupiers
- Interference with existing land uses
- Generation and disposal of waste
- Contamination of surface and groundwater
- Introduction/invasion by alien species
- Noise
- Impact on fauna
- Pollution of soils
- Dust
- Erosion due to vegetation clearance
- Impact on surface water features
- Impact on groundwater
-

23. MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED

Prospecting is conducted in phases, where the activities and location of drilling and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. The overall prospecting area is indicated in Section 2 above. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report. Positioning of invasive prospecting planned in the sensitive areas and buffer zones should be conducted with a suitably qualified specialist in order to avoid or minimize the destruction of any sensitive vegetation, habitats or fossils occurring in this area.

Since exploration is temporary in nature, no permanent structures will be constructed. Negotiations and agreements will be made with the farm owners to use any existing infrastructure like access roads. The property is located in an area where the geological formation is known to host the desired mineralization, as evidenced by existing mines within a radius of 6 kilometers, such as Savmore Colliery (4.24 km), Kiepersol Mine (5.20 km), and Jindal Mining (5.38 km).

Figure 48: Availability of the minerals. *(Singo Consulting (Pty) Ltd, 2022)*

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.

23.1 STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE

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

The proposed project area as discussed above, has been selected due to the geology of the site and the anticipated favorable tectono-stratigraphic setting of the proposed prospecting area. No prospecting activities will occur within 100m from the watercourses should the Water Use license be not issued. The land or properties affected are mostly remain unused and as a result, the potential discovery of viable mineral resources within the proposed project area would be beneficial in terms of diversifying the use of land in the area. Negotiations and agreements will be made with the farm owners to use any existing infrastructures 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.

24. 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 will be conducted:

- Hydrogeology study
- Soil study
- Hydrological 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 and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and core drilling cannot be predetermined.

The following alternatives were investigated as feasible alternatives:

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

  The proposed prospecting area is situated on Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT, which falls within the Magisterial District of Mkhondo. The project area is situated approximately 6.80 km southeast of Ngema Tribal Trust and 19.06 km east of Piet Retief Township. Within the 15 km radius of the proposed prospecting area, there are two coal mines namely Kiepersol Mine and Savmore Colliery, located approximately 4.76 km south-west and 4.21 km north-west of the proposed area respectively, and also Heyshope Dam approximately 9.85 km north, Assegaairivier approximately 10.5 km northwest, Röhrs

Farm Guesthouse approximately 5.99 km east and Bodenstadt Country Lodge approximately 12.2 km southeast of the proposed prospecting project and It can be accessed through a gravel road that extents from the R543 road .

The prospecting right application directly affects the whole Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT farm . The development footprint encircles 767,811 ha.

- **The type of activity to be undertaken**

  Main activity conducted to determine the Coal resources present in an economic feasible quality and quantity is drilling. The boreholes will be drilled with the diamond drilling method so the geologists can get a clear understanding of the actual subsurface setting of the lithologies. As outlined in the Prospecting Work Programme (PWP) all activities will be conducted in a phase approach whereby the execution of a new phase will depend on the results of the preceding phase. Prospecting activities will not compromise any future land uses on the study area as the applied activities are temporary

- **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

- **Technology Alternatives**

  The technologies listed in the PWP have been selected as they are proven effective in the determination of resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include a literature survey, field reconnaissance/mapping, and geophysics survey of the geology, outcrops. Invasive technology alternatives have also been considered. It is hereby noted that the different phases and timeframes of the prospecting herein envisaged are, by their nature, dependent on the results obtained during the preceding phases of such prospecting. The proposals set out in the Prospecting Work Programme are therefore made on the basis that results obtained during the preceding phases may necessitate reasonable changes and adaptations to such proposals, which will be reported as prescribed

- **The operational aspects of the activity**

  A prospecting period of three 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.

- **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.

- **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.

25. 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 32: Potential environmental impacts and mitigation measures.

Potential environmental impacts and sources	Measures to prevent, mitigate, minimise, or manage the impacts
Impact: Air pollution (dust, gaseous emissions) **Source: Establishment of camp site, movement of vehicles on access roads and drill rigs,**	• 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. • Ensure that chemical containers are always closed
Impact: Water pollution (surface water, groundwater and wetlands) **Source: Spillages from machines on site**	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: • Control and manage storm water • Prevent soil erosion and keep the water channel clean • Monitor the ground water • Spill kit must always be onsite • Place a container under a leaking part to collect the leakages
Impact: Land degradation, land-use and capability **Source: Poor waste management**	• 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

Impact: Ecological degradation **Source: Uncontrolled vehicle movement and poor rehabilitation**	• 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.
Impact: Land pollution **Source: Lack of proper waste management**	• 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. • 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.
Impact: Aesthetic, pollution **Source: Machinery**	• The visual impact will be of temporary nature. • The surrounding trees and dense vegetation will also serve as the screen to the prospecting area.
Impact: Noise **Source: Vehicle movements and drill rigs**	• 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. • Servicing vehicles, machinery and equipment very often.

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.
		Animal life	Discomfort of the nearby animal species due to noise and vibrations caused by vehicles
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.

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	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.

	not be triggered by the NEMA list of activities.	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	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 could lead to soil erosion and soil loss.

	equipment onto and off-site. If need be, they will be upgraded.	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. 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.

23. 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 WERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Hydrogeological study	➢ On site there should be regular maintenance of the mobile toilets. ➢ Once drilling, the team should rehabilitate the area and ensure the core is out of site. ➢ Drilling within 100 meters of water resources should be avoided ➢ The drilling machine used should be of minimum vibrations to avoid creating fissures in underlying rocks which could influence groundwater migration and leads to water contamination ➢ 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).	X	Section 6.1.6 of this report

	➢ No onsite vehicle or machinery repairs such as changing oil. ➢ No onsite storage of oil, diesel, or petrol.		
Hydrological study	➢ Vegetation clearance and the exposure of soils must be kept to an absolute minimum. ➢ Temporary erosion control measures (e.g., sediment nets, berms, etc.) must be employed around working areas. ➢ The recommended water quality monitoring programme is implemented at least a year prior to construction, to obtain a suitable baseline for the wet and dry seasons. ➢ The proposed SWMP is implemented. Erosion and sediment control, as well as the containment and management of dirty water runoff, are the most important aspects to prevent negative impacts on the Blosbokspruit River. ➢ Energy dissipation measures are implemented at steep sections as well as at the exits of the proposed stormwater channels. ➢ The river must be appropriately diverted around working areas, and the generation of sediment must be controlled through suitable measures. ➢ Sufficient freeboard in the PCDs and other dirty water dams must be ensured at all times. The dams must be strictly managed in accordance with GN704 regulations.	X	Section 6.1.6 of this report

	➢ Dirty water must not be discharged to the environment. Excess water within the mine water circuit, must be appropriately dealt with, in agreement with the DWS. ➢ Abstractions from the Blosbokspruit River during the dry season months should be avoided as far possible. The use of water from flooded surrounding historical adits, or the construction of suitably sized PCDs should be investigated. ➢ Stormwater management and erosion control along the proposed mine roads must be ensured. It is recommended that runoff is diverted off the roads through suitably spaced berms. ➢ Exemption from GN704 is obtained for infrastructure that is located within the floodlines or watercourses, or 100 m horizontal distance from a watercourse. ➢ Suitably sized culverts are placed where linear infrastructure crosses the minor non-perennial drainage lines. ➢ Post mine closure, rehabilitation must ensure that erosion prevention is adequate for the long-term. ➢ The recommended mitigation measures and monitoring plans are implemented.		
Soil study	➢ The exploration geologist must be advised to drill and sample more than 500m away from the waterbody on site.	X	Section 6.1.6 of this report

	➢ 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 resource during precipitation events. ➢ Absorbent kits should be made available near the drill rigs during drilling activities.		

24. 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. A diamond core drill rig will be used for drilling.
- There are impacts associated with the water courses that is located onsite. The proposed prospecting area falls within the Inkomati-Usuthu Water Management Area (W51C).
- The proposed prospecting area falls within the heavily or moderately modified as well as other natural areas.

Key findings for the socio-economic environment:

- Consultation with all relevant Interested and Affected Parties as well as stakeholders and landowners is conducted in order to capture any comments or concerns regarding the proposed activities and to ensure that they are kept informed and allowed to raise issues. The concerns raised will be included in the final BAR & EMPr

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)

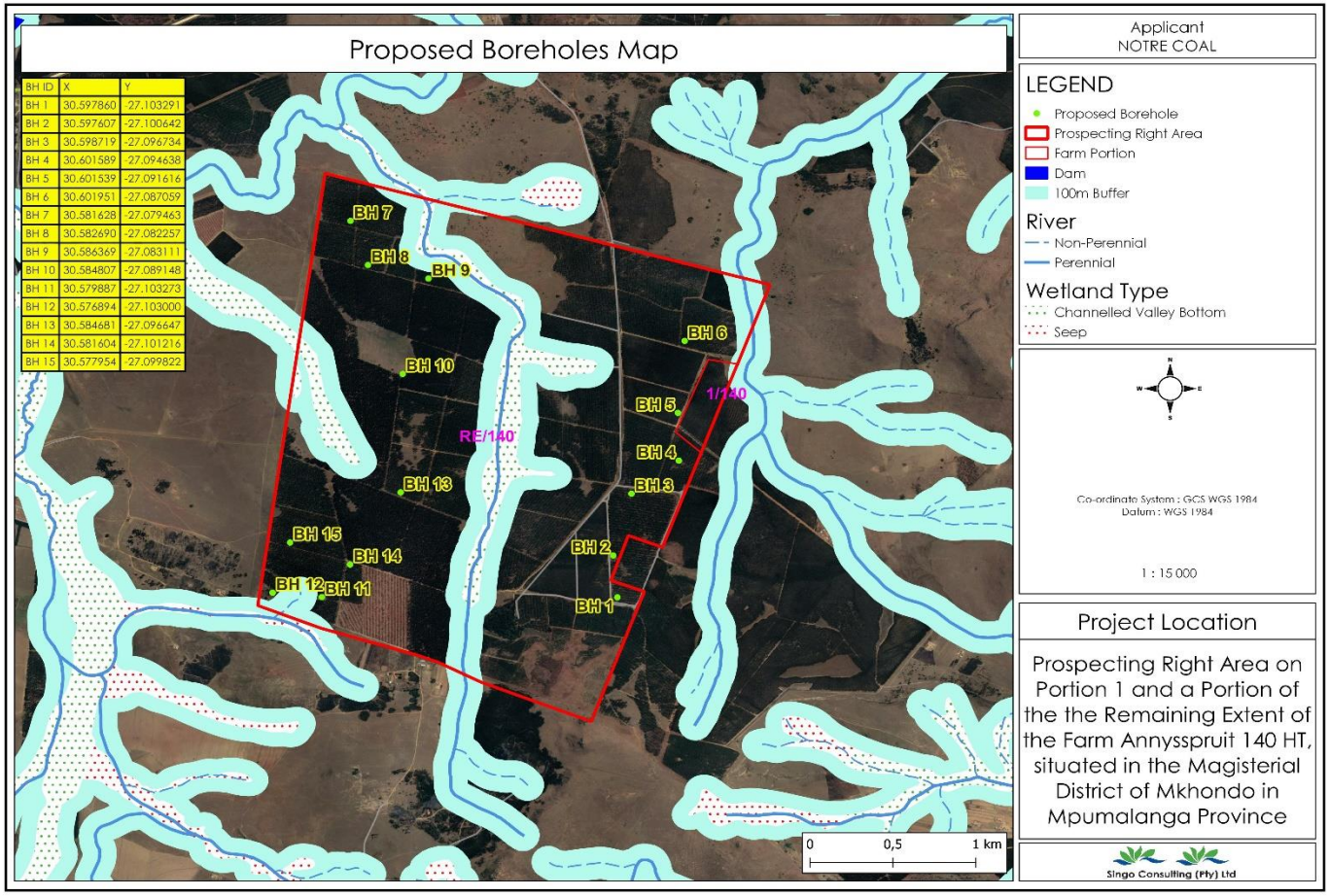


Figure 49: Proposed borehole map. *(Singo Consulting (Pty) Ltd, 2022)*

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

Although non-invasive techniques will be utilized as part of the proposed prospecting activities, the implementation of the proposed mitigation measure will ensure that the negative implications and risks of the project are minimal.

The Potential positive impacts are as follows:

- Discovery of an economically viable mineral resources
- Additional information to Geological Database
- Positive contribution to the South African Gross Domestic Product
- Concurrent rehabilitation during prospecting

The potential negative impacts are as follows:

- Clearance/Disturbance of vegetation
- Compacting of Soils
- Drilling impact on identified lithic scatters
- Deterioration and damage to existing access roads and tracks
- Invasion of privacy: Land access agreements will be signed before prospecting starts
- Interference with existing land uses
- Generation and disposal of waste
- Contamination of surface and ground water
- Introduction/invasion by alien species
- Noise
- Impact on faunal species
- Pollution of Soils
- Dust
- Erosion due to vegetation clearance
- Impact on surface water features
- Impact on groundwater
- Loss of fossil heritage.
- No drilling will occur within 100m of a heritage artefact

The EMPr has identified appropriate mechanisms for avoidance and mitigation of these negative impacts.

25. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR.

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

- The 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 mitigated against it as far as possible.

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

26. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

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

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

- 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 Notre Coal (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.

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

(Which relate to the assessment and mitigation measures proposed)

The following assumptions, uncertainties, and gaps in knowledge are applicable to this BAR & EMPr: The location of drill sites is not yet known and will be identified through the phased approach of the prospecting work programme. This assessment is therefore based on a desktop approach at a broad scale and assuming that drilling could occur within the proposed Prospecting Right area. Once drill sites have been identified, then it is recommended that focus should be given to these sites in order to identify any cultural or heritage resources of significance, any ecologically significant areas that may occur as well as re-engaging landowners regarding the intention to access and conduct drilling activities on their property.

- The investigations undertaken by specialists during the BA process, indicate the development site as suitable and technically acceptable
- 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

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

a) Reasons why the activity should be authorized or not

In general, it is recognized 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 wilderness 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 utilize the reserves for future mining and the minerals will be sterilized 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, minimized, 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 Notre Coal c(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.

29. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

This Environmental Authorisation is required for a period of 3 years

30. 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).

It is confirmed 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 BAR and the EMPR.

31. FINANCIAL PROVISION

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

An amount of **R38 435.00** is required to manage and rehabilitate the environment. The financial provision amount was calculated utilizing 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.

Table 33: Quantum Calculation

CALCULATION OF THE QUANTUM

Applicant: Notre Coal

Evaluator: **Makhubela Dineo**

Ref No.: **MP 30/5/1/1/2/17554 PR**
Date: **2-Sep-22**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	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	1280.25	49	0.03	1	1881.9675
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	28906.8075

1	Preliminary and General	3468.8169	weighting factor 2: 1	3468.8169
2	Contingencies	2890.68075		2890.68075
			Subtotal 2	35266.31
			VAT (15%)	3168.52
			Grand Total	**38435**

SIGN Makhubela Dineo

DATE 2/9/2022

31.1 Explain how the aforesaid amount was derived

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 PWP.

This information has been provided in the Prospecting Work Programme that was submitted to the DMRE. The drilling contractor will be responsible for rehabilitating the drill pad once the drilling activities have been completed at each exploration hole. The financial guarantee was calculated using the DMRE official financial quantum calculator.

31.2 Confirm that this amount can be provided for from operating expenditure

Notre Coal here with 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. The amount is also reflected in the Prospecting Work Programme submitted to the DMRE.

32. 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: -

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

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

The potential impacts on the socio-economic conditions have the potential to include:

❖ Safety and security risks to landowners and lawful occupiers

The potential exists for a group of unfamiliar workers to enter the project area during the prospecting activities. This impact could potentially affect the local communities; however the impact will be minimal as people on site will be limited to the Applicant, contractor and geologists for the topographical and geophysical surveys.

❖ Interference with existing land uses

Access to the application area for the topographical and geophysical survey will be required which may interrupt the existing land uses, such as livestock grazing, residential developments and game activities. However, this impact will be minimal as no heavy equipment will be brought on site and it is of short duration. The consultation process will allow directly affected parties to raise their concerns. Further to this, it must be noted that I&AP's, including directly affected parties such as landowners, have the opportunity to review and comment on this report. The results of the public consultation have been included in the final report submitted to the department for adjudication.

32.2 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).

From these previous research records conducted in the area; the specialist concluded that the general region is significant from a heritage perspective. Heritage sites are likely to include graveyards, Iron Age/Farmer and Historical remains. Since heritage sites, e.g. graves, are not always clearly identifiable as it might consist of stone cairns, it is advised that a qualified archaeologist inspect the proposed prospecting sites prior to drilling to establish whether the sites might be sensitive from a heritage perspective.

The following recommendations were made in terms of the National Heritage Resources Act (Act No. 25 of 1999) in order to avoid the destruction of heritage remains in areas demarcated for prospecting:

- Prior to any development, construction or prospecting, a qualified archaeologist should conduct a site inspection on the areas demarcated for geotechnical drilling/prospecting. Proposed access roads to the drill sites should also be surveyed in order to avoid the destruction of heritage material;
- Should the prospecting outcome result in further development or construction and mining, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered.
- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (see National Heritage Resources Act (Act No. 25 of 1999) Section 36 (6)).

33. 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 EAP included all aspects as required by the EIA regulations, 2014 for the EIA and EMPR as described in the Executive Summary of this report. Please refer to Part A

PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME

34. DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

34.1 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(1.1) 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(1.1) of this report.

34.2 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 (4) (4.1) 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 (4) (4.1) herein as required.

34.3 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 Figure 2 above

34.4 Description of Impact management objectives including management statements

(g) 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.

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

Limited water will be consumed by the surface dust suppression activities (water mist added for dust suppression when required). If diamond drilling is to take place, then it is estimated that up to 20 000 litres per day could be required

(i) Has a water use licence been applied for?

No, Water Use Licence has been not applied 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.

35. IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Table 34: 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	• 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	767,811 ha short term and localized	• 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	• 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 DWAF Best Practice Guidelines NHRA	Throughout Construction and operation
Storage of construction vehicles	Construction and Operation	short term and localized	• 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	NWA DWAF BPG	Throughout Construction and operation

			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.		
Transportation/ access to and from drill sites	Construction and Operation	short term and localized	• 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; • 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	NEMA NEMBA CARA NEMAQA Dust Regulations Road Traffic Act	Throughout Construction and operation

			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	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.	NWA NEMWA DWAF BPG NEMA	Throughout Construction and operation

Prospecting boreholes: **15 sites ,with a footprint of 600 m^2 each**	Construction and Operation Decommissioning	0,9 ha, short term	• 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 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 ECA Noise Regulations	Planning Phase Throughout Construction and operation

			• 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 will be collected in drilling areas where disturbances will be encountered and 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;	NEMAQA Dust Regulations NWA DWAF BPG NHRA	

			• On-site vehicles must be limited to approved access routes and areas on the site so as to 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 Phase2 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.		
Refuelling	Construction and Operation	Short term and localized	• 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	• 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	• 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 very high pH of the material, chemicals contained. Therein. As a result, the contractor shall ensure that: • Concrete shall not be mixed directly on the ground;	NWA DWAF BPG	Throughout Decommissioning and Closure

			• 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 o All excess Coal shall also be removed.		
Removal of surface infrastructure	Decommissioning	Short term and localized	• 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	• 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

Rehabilitation	Rehabilitation	All disturbed areas	• 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	• 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	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. The monitoring activities during this period will include but not be limited to: • Biodiversity monitoring; and • Re-vegetation of disturbed areas where required. 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.	MPRDA Rehab Plan	Post-operation

36. IMPACT MANAGEMENT ACTIONS AND OUTCOMES

Table 35: Summary of impact management actions and outcomes

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
• **Clearing of vegetation and topsoil.** **Stockpiling of overburden positioned for**	Minor loss and disturbance to topsoil as a result of clearing of vegetation and drilling and trenching. When vegetation is cleared and the topsoil is stripped, the soil's natural structure is disturbed and as a result	**Prevent and reduce through management measures.** **Stripping of topsoil:** Clearing of areas to take place a maximum of one month prior to intended prospecting in the area;	Impact avoided. All topsoil used in concurrent rehabilitation.	Rehabilitation objectives and standards	Prospecting Invasive Phase

later rehabilitation. • **Prospecting including diamond core drilling, logging and sampling of the borehole core, trenching will involve the digging of excavation trenches down to approximately 3 metres below surface using graders and excavators.**	the natural cycle is brokenexposing the bare soil to erosion. Vehicles driving on these soils cause compaction of soils and reduces the soils' abilityto be penetrated by root growth. Compaction also increases erosion potential. When soils are not stripped and stockpiled according to the soil stripping guidelines these soils would have lost their natural physical and chemical	• Stripping of topsoil will not take place during rain or excessive wind; and • The top 30 cm of vegetation and topsoilis to be stripped from the area to be prospected. **Storage of topsoil / overburden:** • Topsoil (top 30cm) is to be stored in predetermined topsoil berms, (+/- 5m) outside the boundary of the specific area; and • Topsoil stockpiles will be restricted to 1.5to 2m in height. **Maintenance and monitoring of topsoil stockpiles:** • The stored topsoil should be used as soon as possible in concurrent rehabilitation; • Weekly visual inspections to be conducted.	Rehabilitation objectives and standards		

	properties, reducing the topsoil's ability to be a plant growthmedium. The above factors allcontribute to a loss of thetopsoil's ability to be a resource through alterations				

• **Dust Suppression.**	Hydrocarbon spills on soil can occur 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.	**Prevent and reduce and remedy through management measures.** • All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks; • All leaks will be cleaned up immediately using an absorbent material and spill kits, in the prescribed manner; and ***<u>Hydrocarbons and hazardous waste</u>*** • All hazardous waste generated shall be kept separate and shall not be mixed with general waste; and All hazardous waste shall be stored within a sealed drum on an impermeable surfaced area within the central waste storage and transition area.	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination. Meet rehabilitation objectives and standards.	Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) Section 4 Duties of persons who may be exposed to hazardous chemical substances SANS 10234: 2008: Globally Harmonized	Prospecting Invasive Phase

				System of classification and labelling of chemicals (GHS)	
	Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	**Prevent and reduce and remedy through management measures.** • The existing SMP updated, where applicable for present and future activities should include the management of stormwater during excavation, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area;	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination. Meet rehabilitation objectives and standards.	Rehabilitation objectives and standards Spill procedure GN704 Regulations in terms of the National Water Act, 1998 (Act No	Prospecting Invasive Phase
			• Temporary stormwater management systems (such as sand bags) will be installed to prevent stormwater from entering or exiting the area where prospecting		36 of 1998) Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended]

			will occur, which could result in silt laden surface water from draining		
		• The slopes of the area where prospecting activities will occur, should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scrub (hydrologic action by water that causes erosion). A maximum gradient of 1:3 is recommended; If necessary, temporary diversion • channels should be constructed ahead of the stockpiles (if relevant) to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream (down gradient) of the prospecting area; • Existing vegetation must be retained as far as possible to minimise erosion problems; • Rehabilitation of the prospecting area shall be planned and completed (after conclusion of the prospecting activities) in such	•	Section 2 Declaration of grouped hazardous substances; - Section 9 (1) Storage and handling of hazardous Chemical substances -Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995)	

		a way that the runoff water (if any) will not cause erosion; Visual inspections shall be done on a weekly basis with regard to the stability of the temporary			
	Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	**Prevent and reduce and remedy through management measures.** • The existing SMP updated, where applicable for present and future activities should include the management of stormwater during excavation, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area; • Temporary stormwater management systems (such as sand bags) will be installed to prevent stormwater from entering or exiting the area where prospecting will occur, which could result in silt laden surface water from draining	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination. • Meet rehabilitation objectives and standards.	Rehabilitation objectives and standards Spill procedure GN704 Regulations in terms of the National Water Act, 1998 (Act No36 of 1998) Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended]	Prospecting Invasive Phase

		• The slopes of the area where prospecting activities will occur, should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scrub (hydrologic action by water that causes erosion). A maximum gradient of 1:3 is recommended; If necessary, temporary diversion • channels should be constructed ahead of the stockpiles (if relevant) to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream (down gradient) of the prospecting area; • Existing vegetation must be retained as far as possible to minimise erosion problems; • Rehabilitation of the prospecting area shall be planned and completed (after conclusion of the prospecting activities) in such a way that the runoff water (if any) will not cause erosion;		Section 2 Declaration of grouped hazardous substances; - Section 9 (1) Storage and handling of hazardous chemical substances -Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) Section 4 Duties of persons who may be	

		• Visual inspections shall be done on a weekly basis with regard to the stability of the temporary water control structures, erosion and siltation (if required). • Sediment-laden run-off from cleared areas should be prevented from entering rivers and streams; • No river or surface water may be affected by silt emanating from the prospecting area (especially aimed at prevention of siltation of the nearby watercourse); and • No wastewater may run freely into any of the surrounding naturally vegetated areas. •		exposed to hazardous chemical substances SANS 10234: 2008: Globally Harmonized System of classification and labelling of chemicals (GHS)	
	Contamination of stormwater runoff and groundwater, caused by chemicals such as hydrocarbon based fuels andoils or lubricants spilled fromheavy vehicles andmachinery and fuel storage area.	**Prevent and reduce through management measures.** In accordance with Government Notice 704 (GN 704), the onsite management should: • Keep clean and dirty water separated; • Contain any dirty water within a system;and	Impact avoided. Nosigns of soil contamination and loss oftopsoil due to contamination.	Rehabilitation objectives and standards Spill procedure	Prospecting Invasive Phase

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• Prevent the contamination of cleanwater. In order to achieve these objectives, the following stormwater management measures must be implemented on the site to ensure that those potential stormwaterimpacts are kept to a minimum: • Clean and dirty stormwater needs to be	Meet rehabilitation objectives and standards.	GN704 Regulations in terms of the National Water Act, 1998 (ActNo 36 of 1998) Hazardous	

		separated. Dirty stormwater may not be released into the environment and should be contained and treated on site; • All temporary stormwater infrastructure(if any) on-site shall be maintained and kept clean throughout the prospectingperiod; • Immediate reporting of any polluting or potentially polluting incidents so that appropriate measures can be implemented; • Fuel and oil spills shall be treated immediately by appropriate mop-up products. Several hydrocarbon absorption/remediation products (i.e. Spill kits) must be placed throughout the site;		Substances Act,1973 (Act 15 of 1973) [as amended] • Section 2 Declaration of grouped hazardous substances; - Section 9 (1) Storage and handling of hazardous	

		• Use of bunds or traps to ensure full containment of hydrocarbon and other hazardous materials are mandatory; Any contaminated material is disposedof in an appropriate manner and the potential risks associated with such spills are limited; Stormwater leaving the site must in no way be contaminated; Ensure good housekeeping practices; Increased runoff should be managed using berms and other suitable structures as required to ensure flow velocities are reduced; and Removal ofspills, rainwater and waste produced during clean-up of the bunds – shall be done in accordance to relevant specifications • •	·	chemical substances - Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) - Section 4 Duties of persons who may be exposed substances to hazardous chemical	

		• • •			

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
				SANS 10234: 2008: Globally Harmonized System of classification and labelling of • chemicals (GHS)	
	Minor loss of natural vegetation and destruction of habitat will result in associated loss of fauna and flora species.	**Reduce through management measures.** • A suitably qualified specialist (ecologist) to accompany the site manager to demarcate areas for prospecting, in order to avoid damaging sensitive vegetation as identified during the specialist study and according to the sensitivity maps provided in this report; • Only vegetation falling directly into	Meet rehabilitation objectives and standards. Alien and invasive vegetation management	Meet rehabilitation objectives and standards. Alien and invasive vegetation management plan implemented	Prospecting Invasive Phase

		demarcated access routes or project			
		sites should be removed; • No further vegetation clearance except for the removal of alien invasive species will be allowed; and	plan implemented and outcomes achieved.	and outcomes achieved.	
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
		• All remaining indigenous vegetationshould be conserved wherever possible.			

	Disruption in the movement patterns of fauna species may impact on biodiversity. Noise, dust and potential light pollution, as well as migration of pollutants such as hydrocarbons in the soils, dust and emissions from vehicle and machinery altering air quality will all have an impact on biodiversity.	**Prevent and reduce through management measures.** • Reduce the levels of disturbance on areas indicated by the Environmental Control Officer (ECO) as migratory routes, if any; • Environmental awareness training should include that no hunting, trapping or killing of fauna are allowed; • Any animals rescued or recovered willbe relocated in a suitable habitat away from the mining operations and associated infrastructure; • Any lizards, snakes or monitors encountered should be allowed to escape to a suitable habitat away	NEMBA: National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	NEMBA: National Environmental Management: Biodiversity Act,2004 (Act No. 10 of 2004)	Prospecting Invasive Phase

		fromdisturbance. • No reptile should be intentionally killed, caught or collected during any phase			

		of the project; and • General avoidance of snakes is the best policy if encountered. Snakes should not be intentionally harmed or killed and allowed free movement away from the area.			

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
	Introduction and spread of alien invasive species. The moving of soil and vegetation resulting in opportunistic invasions after disturbance and the introduction of seed inconstruction materials and on vehicles. Invasion of alien plants can impact on hydrology, by reducing the quantity of water entering a watercourse throughstormwater, and outcompete natural	**Prevent and control through manageme nt measures.** • An alien vegetation management plan should be drawn up and implemented; • Regular removal of invasive alien species should be undertaken. This should extend through to the closure phase of the project; and • No spreading of alien vegetation onto adjacent properties should be allowed.	Rehabilitation Objectives and Standards Alien and invasive vegetation management plan implemented and outcomesachieved. Proof of alien vegetation control. No listed species visible on the site.	Alien and Invasive Species ManagementPlan Rehabilitation Objectives and Standards Alien and Invasive Species Regulations (Government Notice 598 of 2014) and Alien and Invasive Species List, 2014 in terms of NEMBA (Government Notice 599 of 2014)	Prospecting Invasive Phase

	vegetation, decreasing the natural biodiversity. Once in a system, alien plants can spread throughout the catchment. If allowed to seed before control measures are implemented, alien plants can easily colonise and impact on downstream users.			Notice 2 Exempted Alien Species in terms of Section 66 (1) - Notice 3 National Lists of Invasive Species in terms of Section 70(1) – List 1, 3-9	
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**

				Exempted Alien Species in terms of Section 66 (1) - Notice 3 National Lists of Invasive Species in termsof Section 70(1) – List 1, 3-9	
				& 11 - Notice 4 • Prohibited Alien Species interms of Section 67 (1) – List 1, 3-7, 9-10 & 12	

	Alteration of archaeological, historical and palaeontological resources that may be discovered during earthworks and drilling.	**Protect heritage resources through developing and implementing procedures.** • Prior to any development, construction or prospecting, a qualified archaeologist should conduct a site inspection on the areas demarcated for geotechnical drilling/prospecting.	No loss of newly discovered material.	National Heritage Resources Act,1999 (Act No. 25 of 1999) and associated regulations.	Prospecting Invasive Phase
Activity Including **Size/ scale**	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
		Proposed access roads to the drill site should		• South African Heritage Resources Agency Guidelines	.

		•also be surveyed in order to avoid the destruction of heritage material; Should the prospecting outcome resultin further development or constructionand mining, a full Phase 1 Archaeological Impact Assessment must be conducted on the affectedarea if triggered; Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the development and construction phases,in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed during development and construction phases, all activities must be suspended and			

		•			

		the relevant heritage resources authority contacted (see National Heritage Resources Act (Act No. 25 of 1999) Section 36 (6)). Should culturally			

		significant material or skeletal remains be exposed during prospecting all activities must be suspended pending further investigation by a qualified archaeologist (Refer to the National Heritage and Resources Act, 25 of 1999 section 36 (6)); • Should any objects of archaeological or paleontological remains be found during activities, work must immediately stop in that area and the Environmental Control Officer (ECO) must be informed; • The ECO must inform SAHRA and contact an archaeologist and / or paleontologist, depending on the nature of the find, to assess the importance and rescue them if necessary (with the relevant SAHRA permit). No work may be resumed in this area without the permission of the ECO and SAHRA.			

	Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.	**Reduce through controlling management measures.** • Unnecessary lights should be switched off during the day and / or night to avoid light pollution;	Rehabilitation objectives and standards	• Rehabilitation objectives and standards	Prospecting Invasive Phase
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
		• If lighting is required, the lighting will be located in such a place and such a manner so as to minimise any impact on the surrounding community and fauna; • Install temporary lights that will not create a night sky glow; such a way as to minimise emissions onto undisturbed areas on site and should face downwards; • Housekeeping on site should be enforced;			

		• Rehabilitation measures such as re-vegetation and plan to be implemented; • Reduce the prospecting period through careful planning and productive implementation of resources; • Plan the placement of lay-down areas and any potential temporary prospecting camps in order • to minimise vegetation clearing;			
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
		• Restrict the activities and movement of workers and vehicles to the immediate prospecting site and existing access roads;			

		• Ensure that rubble, litter and issued materials are managed and removed regularly; • Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way; and • Reduce and control dust through the use of approved dust suppression techniques.			
	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.	**Reduce through controlling measures.** • Vehicles and machinery will be regularly serviced to ensure acceptable noise levels are not exceeded; • Silencers will be utilised where possible; • Heavy vehicle traffic should be routed away from noise sensitive areas wherepossible; • Noise levels should be kept within acceptable limits. All noise and	Impact reduced. Records of service of all operational vehicles. Silencers utilised where applicable. All employees wear PPE where	Meet the South African National Standard SANS 10103:2008 Meet South African Bureau of Standards (SABS) specificationsfor	Prospecting Invasive Phase

		soundsgenerated should adhere to South African Bureau of Standards (SABS) specifications for maximum allowable			

		noise levels for construction sites. Nopure tone	required.	maximum allowable noise levels for constructionsites. • Meet the requirements of theMine Health and Safety Act(Act 29 of 1996)	

		sirens or hooters may be utilised except where required in terms of SABS standards or in emergencies; With regard to unavoidable very noisy activities in the vicinity of noise sensitive areas, the Site Manager (SM) should liaise with local residents and a suitably qualified ecologist and how best to minimise impacts, and the local population should be kept informed of the nature and duration of intended activities; The SM should take measures to discourage labourers from loitering in the area, causing noise disturbance; Noise impacts should be minimised by restricting the hours (between 06h00 and 18h00 on Monday to Friday, and 06h00 and 13h00 on Saturdays), duringwhich the offending activities are			

		carried out and, where possible, by insulating machinery and/or enclosingareas of activity; No noisy activities to occur on Sundaysor public holidays;			
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
		• Personal Protective Equipment to all persons working in areas where high levels of noise can be expected; Signswhere it is compulsory; • Regular inspections and maintenance of equipment, vehicles and machinery to prevent unnecessary noise.			

	Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.	**Reduce through controlling measures.** • Dust suppression shall be implemented during dry periods and windy conditions; • All exposed surfaces should be minimised in terms of duration of exposure to wind and stormwater; • Excavation, handling and transportation of erodible materials shall be avoided under high wind conditions (excess of 35km/hr) or when a visible dust plume ispresent; • Ensure that the shortest routes are usedfor material transport; • Ensure that stockpile height is kept to aminimum; • Minimise travel speed on unpaved roads;	Impact reduced. Speed limit road signs, complying with the South African Road Signs Manual on site. Dust fall monitoring programme should be implemented. Dust fallout and ParticulateMatter	South Africa National Standard 1929:2005: Ambient Air Quality: Limits for common pollution Meet the requirements of the National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1	Prospecting Invasive Phase

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• Implement monthly site inspection to • check for possible areas of dust • generation not addressed or not effectively managed; • Spray areas to be cleared with water; • Ensure minimum travel distance between working areas and stockpiles; • Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation; • Ensure graded areas are sprayed with water; • Minimise the amount of graded areas; Load and offload material, as far as possible, downwind of topsoil stockpiles.	(PM) levels may not exceed the limits as set out in the Dust Control Regulations above. Monitoring dust stands occurring on site.	November 2013 (GNR 827 of 1 November 2013), in terms of the National Environmental Management:Air Quality Act 39 of 2004	

	Gaseous emissions from vehicles and machinery may cause an impact on ambientair quality.	All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and toreduce risk of leaks; Proper planning of movements (vehicle trips) and working of machinery should take place, in order to avoid unnecessary trips and hours of operation.	Rehabilitation objectives and standards	Rehabilitation objectives and standards	Prospecting Invasive Phase

	Generation of additional general waste, litter and building rubble and hazardous waste.	**Control through management measures.** • A central waste storage and transition area shall be established within the site camp; • The central waste storage and transitionarea shall be surfaced and demarcated appropriately; • Portable wheelie bins shall be placed throughout the drill site as well as at the remainder of the site and at all workingareas in the field; • Wheelie bins shall be colour coded and labelled to identify the waste stream forwhich it is intended; • All portable wheelie bins and other containers shall be emptied at the central waste storage and transition area a minimum of once a week or when filled, as to avoid waste build up; • The waste shall be removed (within	Waste management on site visible.	Waste management on site visible. Waste Classificationand Management Regulationsand Norms and Standards for the assessmentof for landfill disposal and fordisposal of waste to landfill, 2013 (Government Notice 634 – 635 of 2013) promulgated in terms of the	Prospecting Invasive Phase

		30days) by a licensed waste service			

		provider as shall be disposed of at a licensed waste landfill site and recordsof safe disposal (as required for hazardous wastes) shall be supplied to the Contractor. These records shall be kept on site by the ESM;		National Environmental Management:	

		• Wherever possible and practical, waste materials generated on site must be recycled; and Waste specific (hazardous, timber, steel etc.) mitigation measures to be implemented. •		Waste Act, 2008 (Act No. 59 of 2008)[s amended] and: Regulations regarding the planning and management of residuestockpiles and residue deposits from a prospecting, mining, exploration or production operation (GNR. 632 of 2015)	

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
				SANS 10234: 2008: Globally Harmonized System of classification and labelling of • chemicals (GHS)	

	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.	**Reduce through controlling management measures.** • Energy savings measures to be implemented at the site e.g.: o No lights to be switched onunnecessarily; o Only security lights to be switched onat night; • Energy saving bulbs to be installed; and • Water should be recycled as far as possible to avoid any additional water usage.	Impact avoided. Recycling of used and contaminated water through wastewater and sewage treatment andreuse.		Prospecting Invasive Phase
	Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existingtraffic.	**Reduce through controlling management measures.** • Where feasible heavy vehicles should not operate on public roads during peakhours; and	Impact reduced. Speed limit road signs, complying	Reduce through controlling measures	Prospecting Invasive Phase
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**

		• Heavy vehicles should adhere to the speed limit of the road.	with the South African RoadSigns Manual on site.	Set Speed Limits • South African Road Signs Manual	

	Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.	**Prevent through controlling management measures.** • Drivers will be enforced to keep to set speed limits; • Trucks will be in a road-worthy condition; • Roads and intersections will be signposted clearly. Only main roads should be used; • Where feasible vehicles should not operate on public roads during peak hours; • Vehicles should adhere to the speed limit of the road; • Heavy vehicles should always travel withtheir headlights switched on; • Heavy vehicles should not stop on the road to pick up hitchhikers – No stopping on the road approaching	Impact reduced. Speed limit road signs, complying withthe South African Road Signs Manual on site. South Africa National Standard 1929:2005: Ambient Air Quality: Limits for common pollution	Reduce through controlling measures Set Speed Limits South African Road Signs Manual South Africa National Standard 1929:2005: Ambient Air Quality: Limits for commonpollution	Prospecting Invasive Phase

		the site will be allowed;			

		Abelusi Logistics and Projects (Pty) Ltd shall be responsible for ensuring that suitable access is maintained for publictraffic to all relevant businesses and properties; and All traffic accommodation measures are to conform to the latest edition of the South African Road Signs Manual.	Meet the requirements of the NationalDust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 (GNR 827 of 1 November 2013), in termsof the National Environmental Management:Air Quality Act 39of 2004 Dust fall monitoring	National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 (GNR 827 of 1 November 2013), in terms of the National Environmental Management:Air Quality Act 39 of 2004 Approved dust fall monitoring programme	

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
			programme should be implemented. Dust fallout and Particulate Matter (PM) levels may notexceed the limits as set out in the Dust Control Regulations above. Monitoring duststands		

			occurring on site.		
	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	**Prevent through controlling management measures.** • All workers will be sensitized to the risk offire; • Smoking is only allowed in designatedsmoking areas and disposal of cigarette butts safely in sand buckets;	Mine Health and Safety Act (Act 29 of 1996) An Emergency Plan (including and chemicals storage	Impact avoided.No incidents of fires occurring onsite. Fire Protection	Prospecting Invasive Phase

	and workers.		containers;		
		• The Applicant shall ensure that the basic firefighting equipment is available on the site; • Extinguishers should be located outside hazardous materials	Fire response and evacuation: • An Emergency Plan (including Fire Protection, Response and Evacuation Plan) is to be Response and Evacuation Plan) Veld and Forest	No one smoking in unauthorised areas. Proof / records of training in terms of the risk of fire and of the emergency management plan.	.

			Fire Act, 1998(Act No. 101 of 1998) [as amended] -Section prepared by the Applicant and conveyed to all staff on the site; • Identify major risks to minimise the environmental impacts e.g., air pollution and contaminated effluentrunoff.	• Basic fire-fighting equipment located inthe correct locations onsite 12 (1) Duty ofthe landowner to prevent fire from spreading to neighbouring properties.	
	Increased risk to public and worker safety: If not fenced off, the public and workers may fall into excavated areas and trenches.	• A health and safety plan in terms of the Mine Health and Safety Act (Act 29 of 1996) should be compiled and implemented to ensure worker safety; • A health and safety control officer	Mine Healthand Safety Planavailable on site and proof that it is being implemented.	Health safetyterms Mine Healthand Safety Act (Act 29 of 1996)	Prospecting Invasive Phase

		• should monitor the implementation of the health and safety plan for the operational phase; • Any health and safety incidents should be reported to the Site Manager (SM) immediately; First aid facilities should be available on site at all times; • Workers have the right to refuse work in unsafe conditions; • Material stockpiles or stacks should be stable and well secured to avoid collapse and possible injury to workers. • Site Access to excavation must controlled; • Excavated areas should be temporarily fenced off; and • Excavations willbe backfilled landscaped as soon as possible	Proof of training in awareness of health and safety procedures. Proof/records of health and safely audits available on request. • No Health and safety incidents reported. • Proof / record of stockpile and stacks inspections taking place. Health safety signssite appropriatelocations.		
Activity Including Size/ scale	**Aspects and potential impacts**	**Mitigation type and Measures**	**Standards to be achieved**	**Compliance with standards**	**Phase and / or time period for implementation**
	Potential creation of very limited extent short term employment opportunities for the local community, duringthe prospecting phase.	Local labour to be sourced where possible.	-		Prospecting Invasive Phase

	Multiplier effects on local economy will be positive, but very limited in extent and onlyshort term.	Supplies to be bought locally as far as possible.	-		Prospecting Invasive Phase

37. 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.

37.1 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.

37.2 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 remain proposed. Mapping of prospecting activities can also not be conducted.

Due to the small extent and 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.

37.3 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.

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

The closure cost assessment will be conducted, if required. The report will be submitted to the Department of Mineral Resources & Energy together with the Final Basic Impact Assessment report, if required.

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

It is confirmed that the amount for financial provision is anticipated to be an operating cost and is provided for as such in the Prospecting Work Programme. Notre Coal (Pty) Ltd herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted

38. 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

Table 36: Mechanisms 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
		PROSPECTING PHASE		
➢ **Clearing of vegetation and topsoil.** ➢ **Stockpiling of overburden positioned for later rehabilitation.**	Surface Water	➢ The existing SMP updated, where applicable for present and future activities should include the management of stormwater during excavation, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area. This Stormwater	Applicant Engineer	After rain / storm events; and Weekly

➢ **Prospecting including diamond core drilling, logging and sampling of the borehole core, trenching will involve the digging of excavation trenches down to approximately 3 metres below surface using graders and excavators.** ➢ **Dust Suppression.** ➢	Dust and air quality pollution	➢ Visual inspections shall be done on a weekly basis regarding the stability of the temporary water control structures, erosion, and siltation ➢ Monthly air quality report will be required as per the regulations to: ▪ Ensure that the environmental mitigation and control measures are implemented; ▪ Monitor environmental performance of the mining operations; ▪ Tracking of progress due to pollution control measure implementation;. ▪ Verify compliance with all relevant legal and statutory requirements; ▪ Promote environmental education and protection; and ▪ Determine sources of significant pollution.	Applicant Environmental Specialist	Monthly

➢ **Spreading of alien invasive vegetation and impacts on habitat and vegetation.**	Specialist monitoring on Faunal and Floral aspects include the monitoring of effects operational processes have on vegetation and accompanied animal life within the immediate or surrounding areas of the operations. • Alien vegetation control and management. • Habitat and vegetation management; • Rehabilitation services include the	➢ Environmental Specialist	Visual inspections during all phases of the activities.	

	rehabilitation of operational disturbed areas and hydrocarbon spill areas. • Sloping and re-vegetation of disturbed area to surrounding landscape; and Remediation of soil at spill sites.			

39. 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.

40. ENVIRONMENTAL AWARENESS PLAN

40.1 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.

40.2 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.

40.3 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.

40.4 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.

40.5 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.

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

The broad measures to control or remedy any causes of pollution or environmental degradation as a result of the proposed prospecting activities taking place are provided below:

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

It is of critical importance that the broad measures to control or remedy any causes of pollution or environmental degradation are applied during onsite prospecting activities.

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.

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: June 2022

APPENDICES

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

EIA Reference number: (DMRE Ref: MP 30/5/1/1/2/17554 PR)

Project name: prospecting Coal on Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT, situated in the Magisterial District of Mkhondo in Mpumalanga Province

Project title: prospecting Coal on Portion 1 and a Portion of the Remaining Extent of the Farm Annysspruit 140 HT, situated in the Magisterial District of Mkhondo in Mpumalanga Province

Date screening report generated: 03/08/2022 15:59:37

Applicant: Notre(Pty) Ltd

Compiler: Singo Consulting (Pty) Ltd

Compiler signature:

.....

Application Category: Mining|Prospecting rights

Appendix 2: Site Conditions


Samsung Quad Camera
Shot with my Galaxy A32

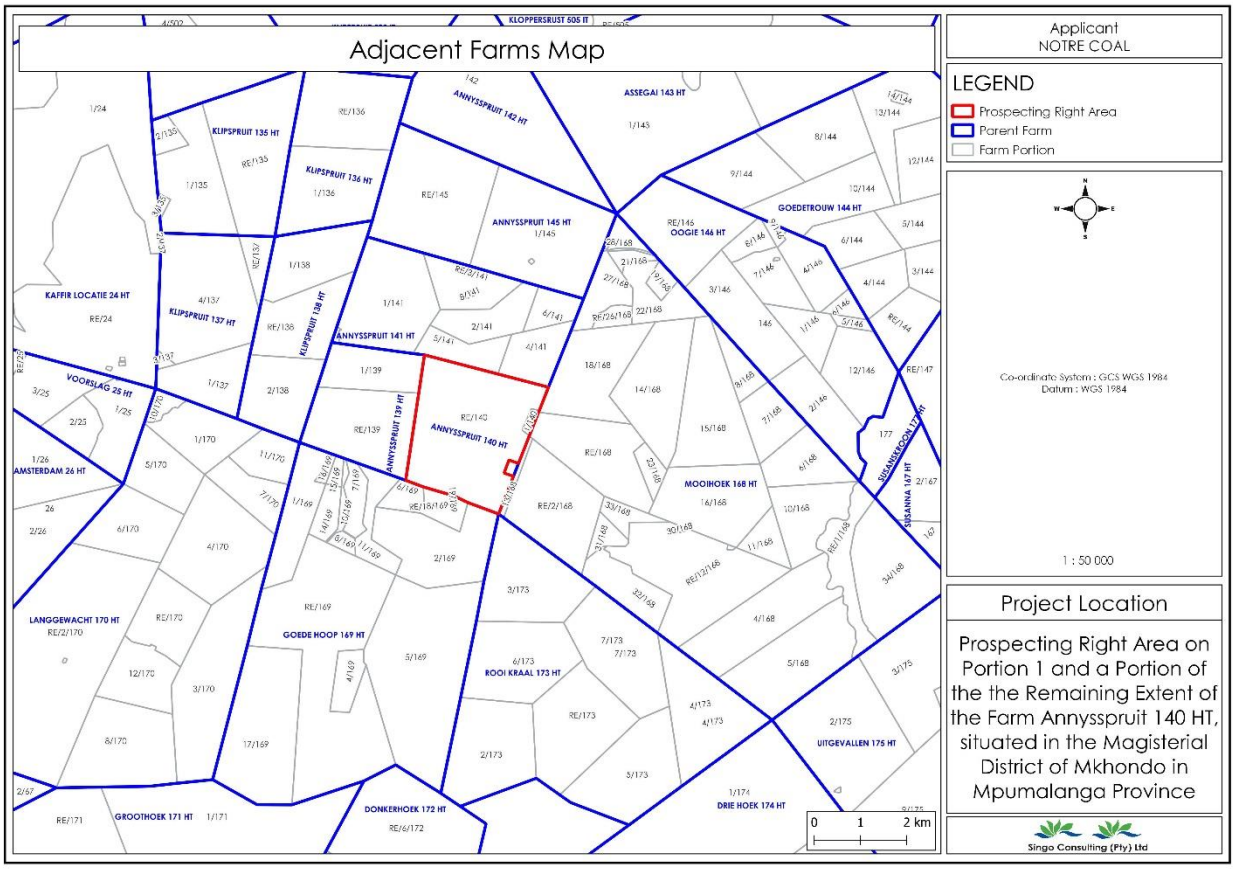

Samsung Quad Camera
Shot with my Galaxy A32


Samsung Quad Camera
Shot with my Galaxy A32

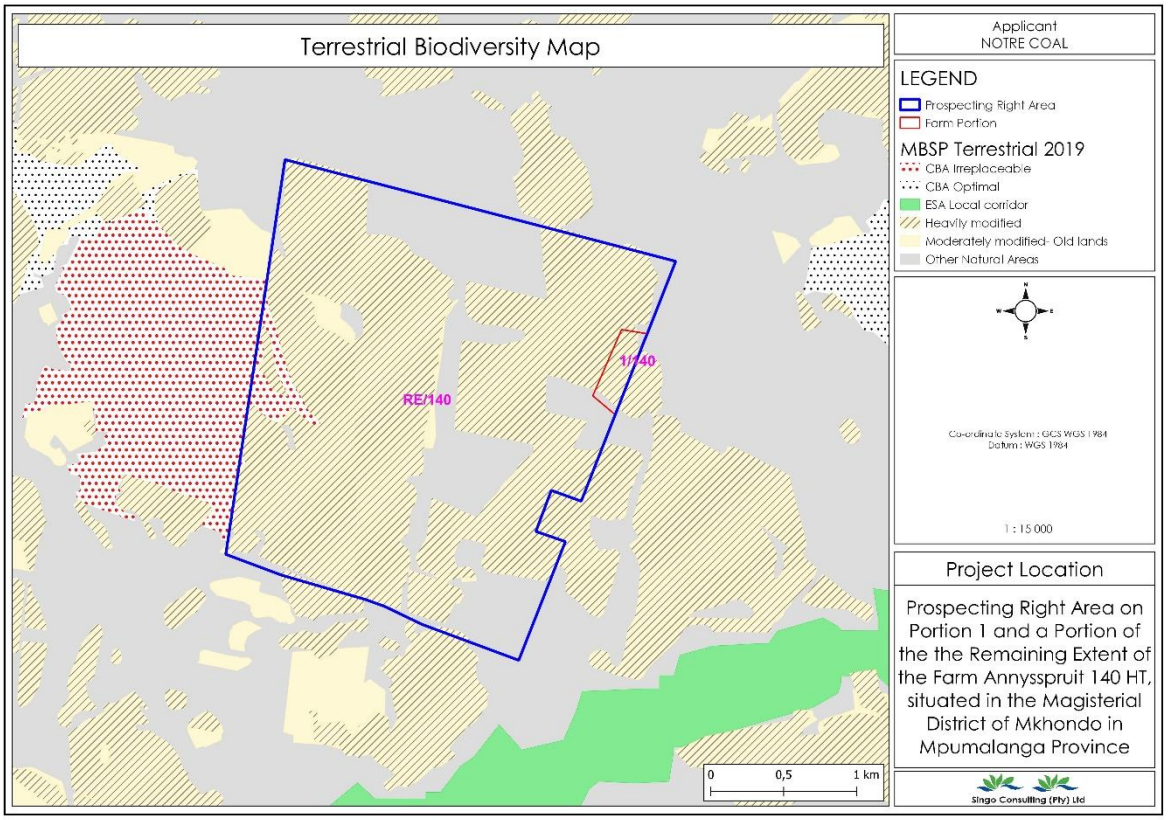

Samsung Quad Camera
Shot with my Galaxy A32


Samsung Quad Camera
Shot with my Galaxy A32

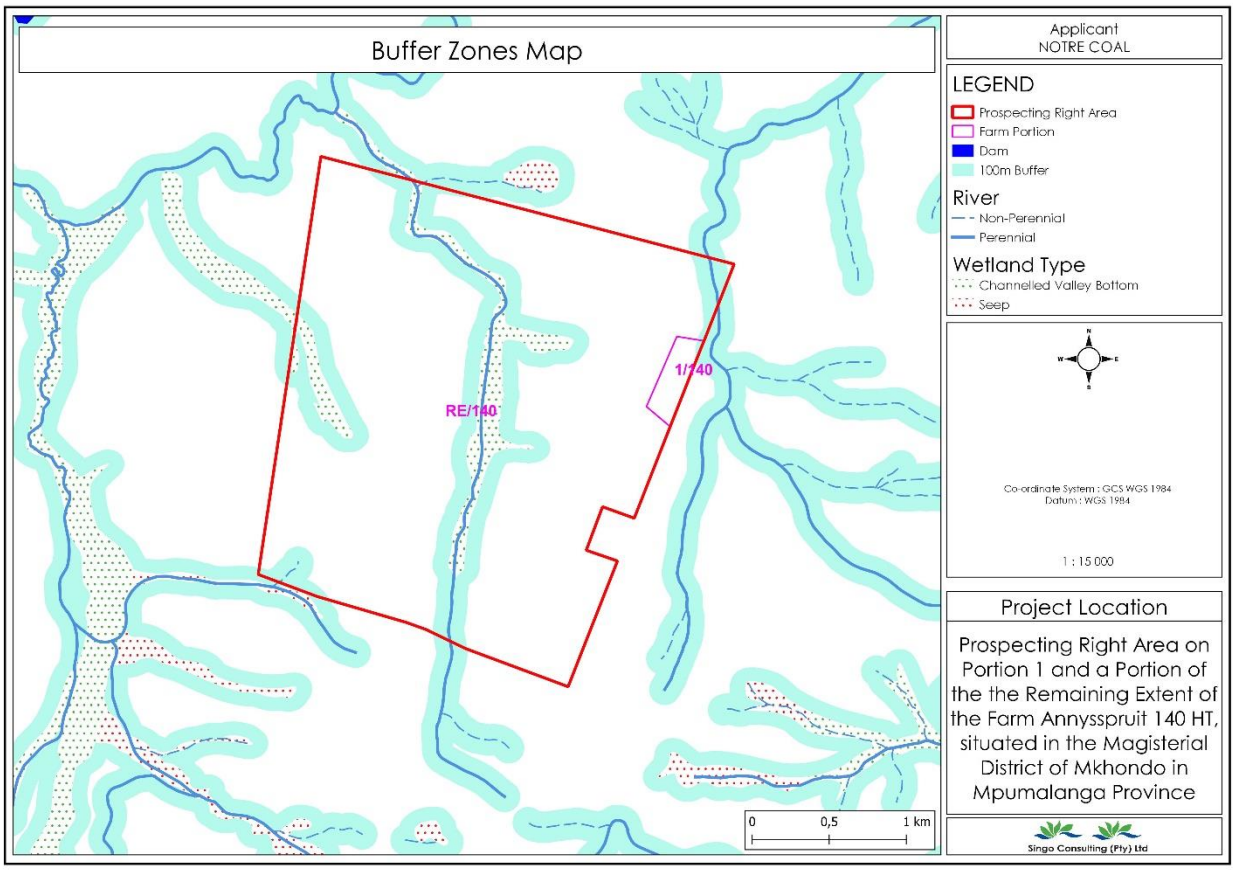
Appendix 3: Project Maps



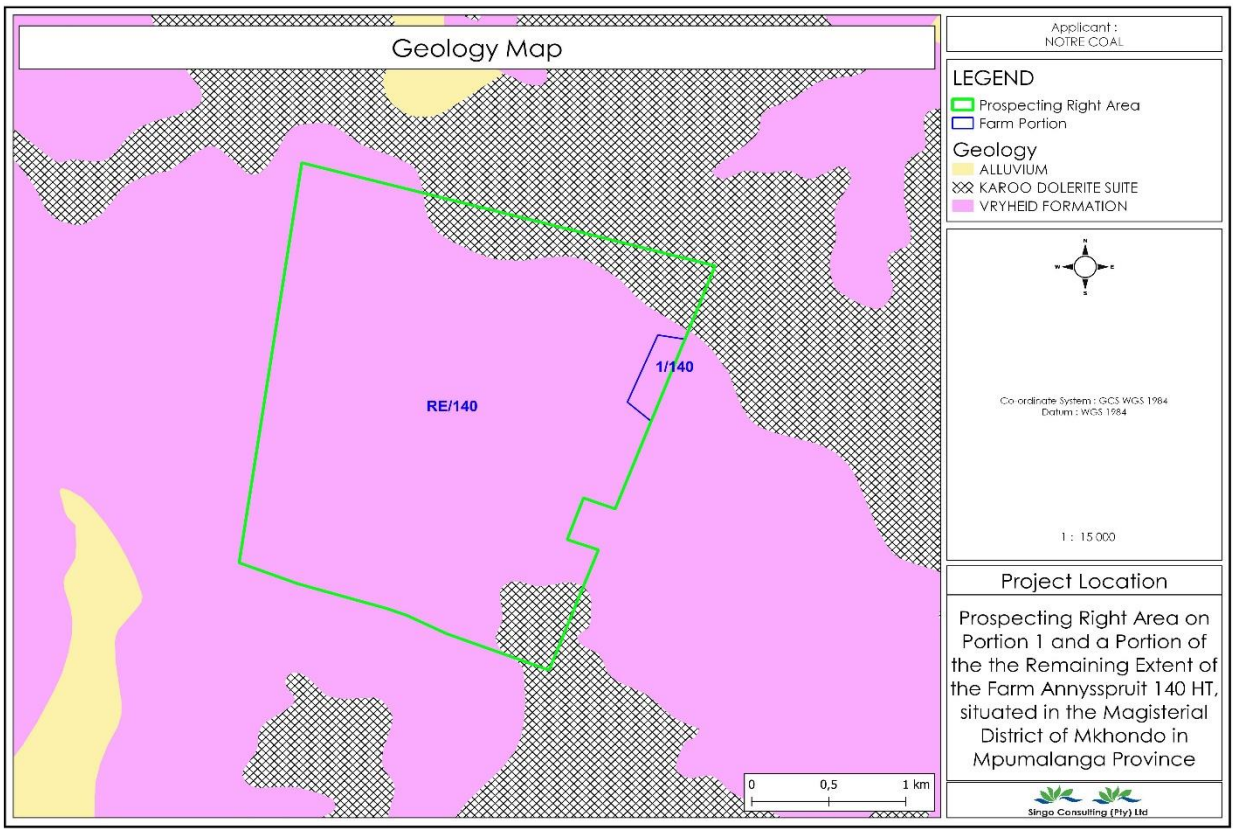
Adjacent Farm Map



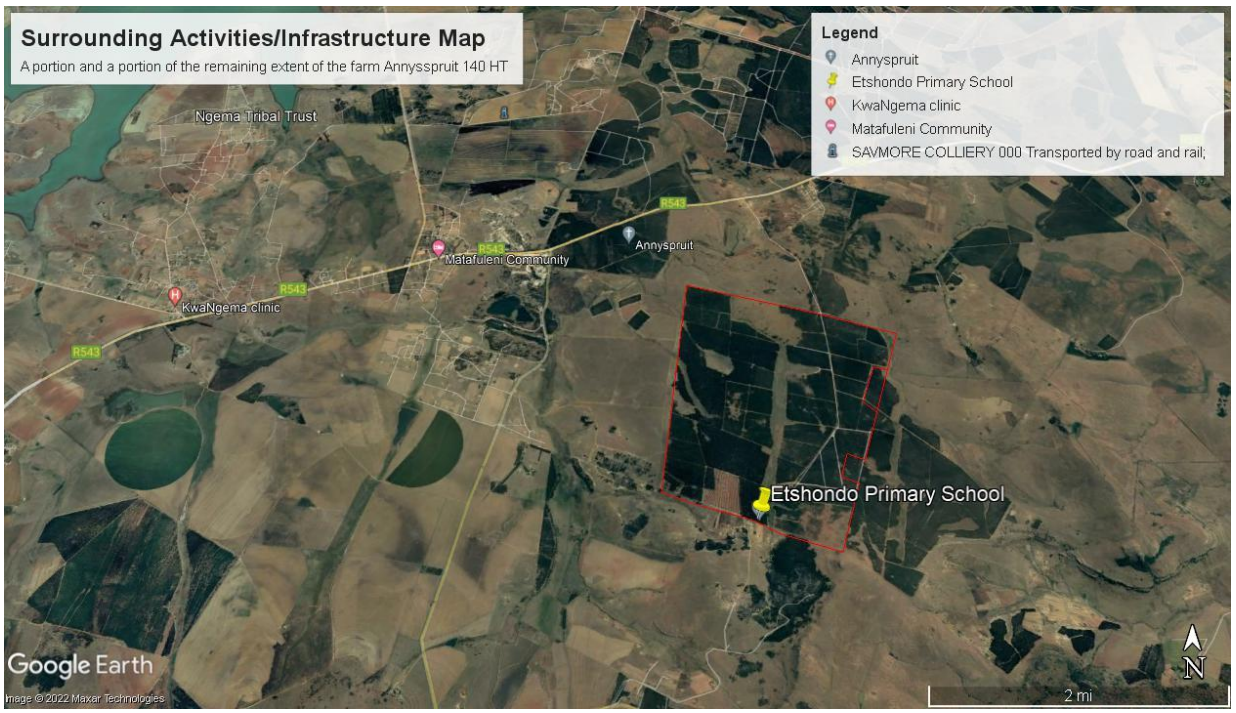
Biodiversity Map



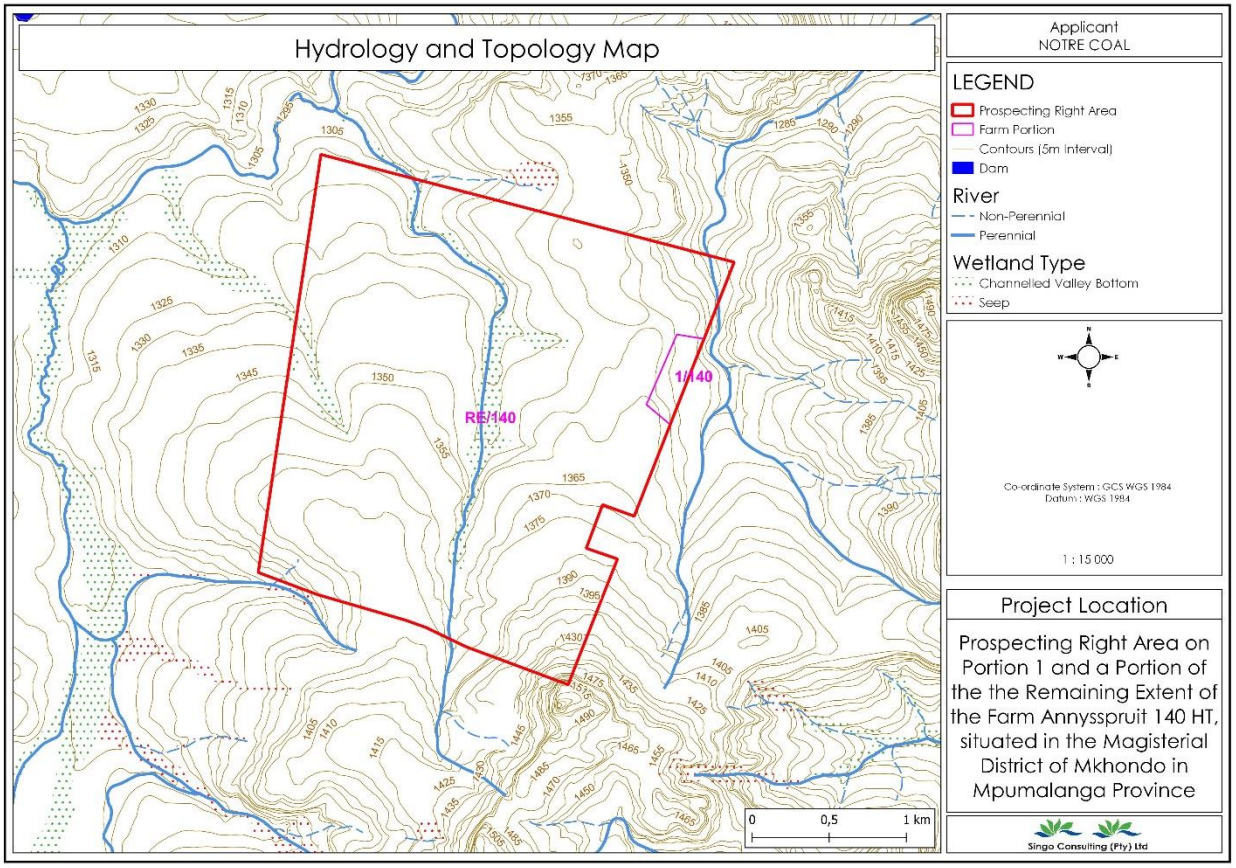
Buffer Map



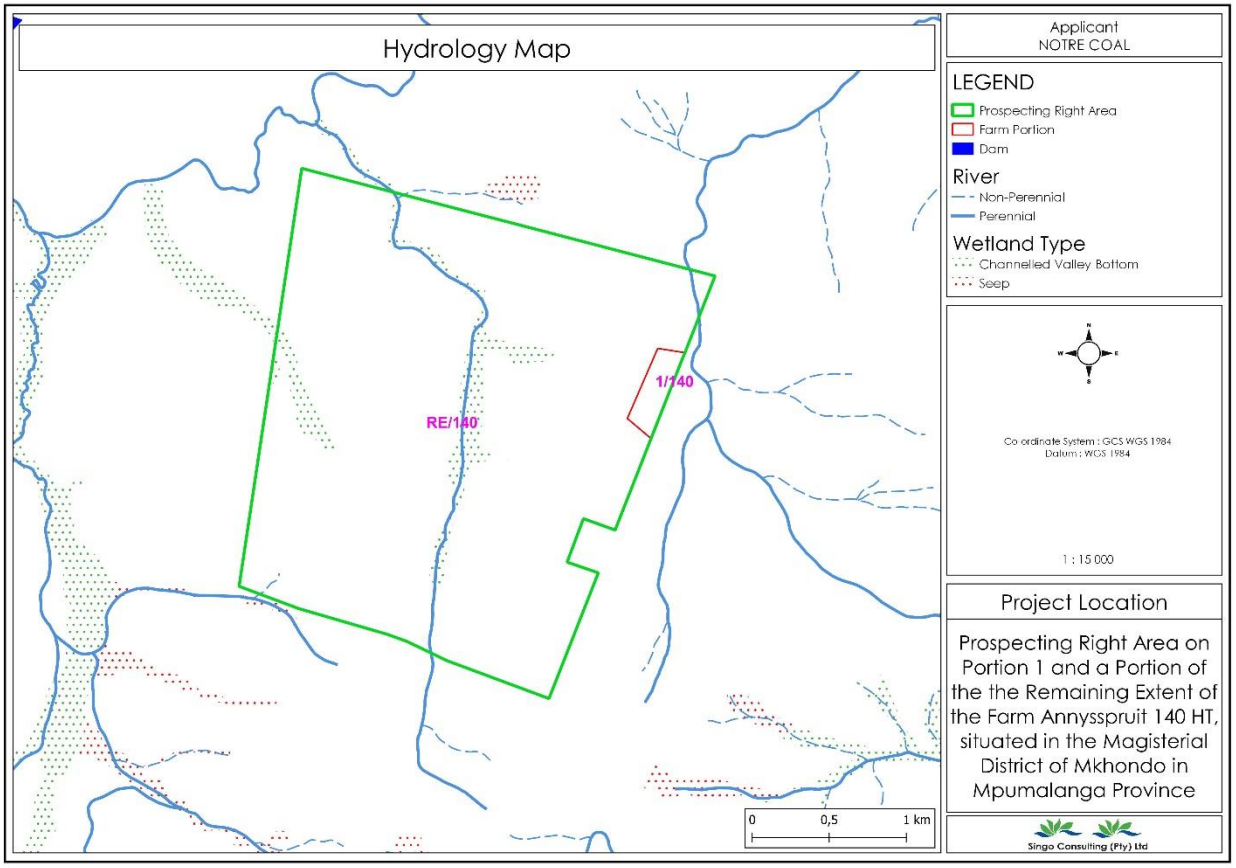
Geology Map



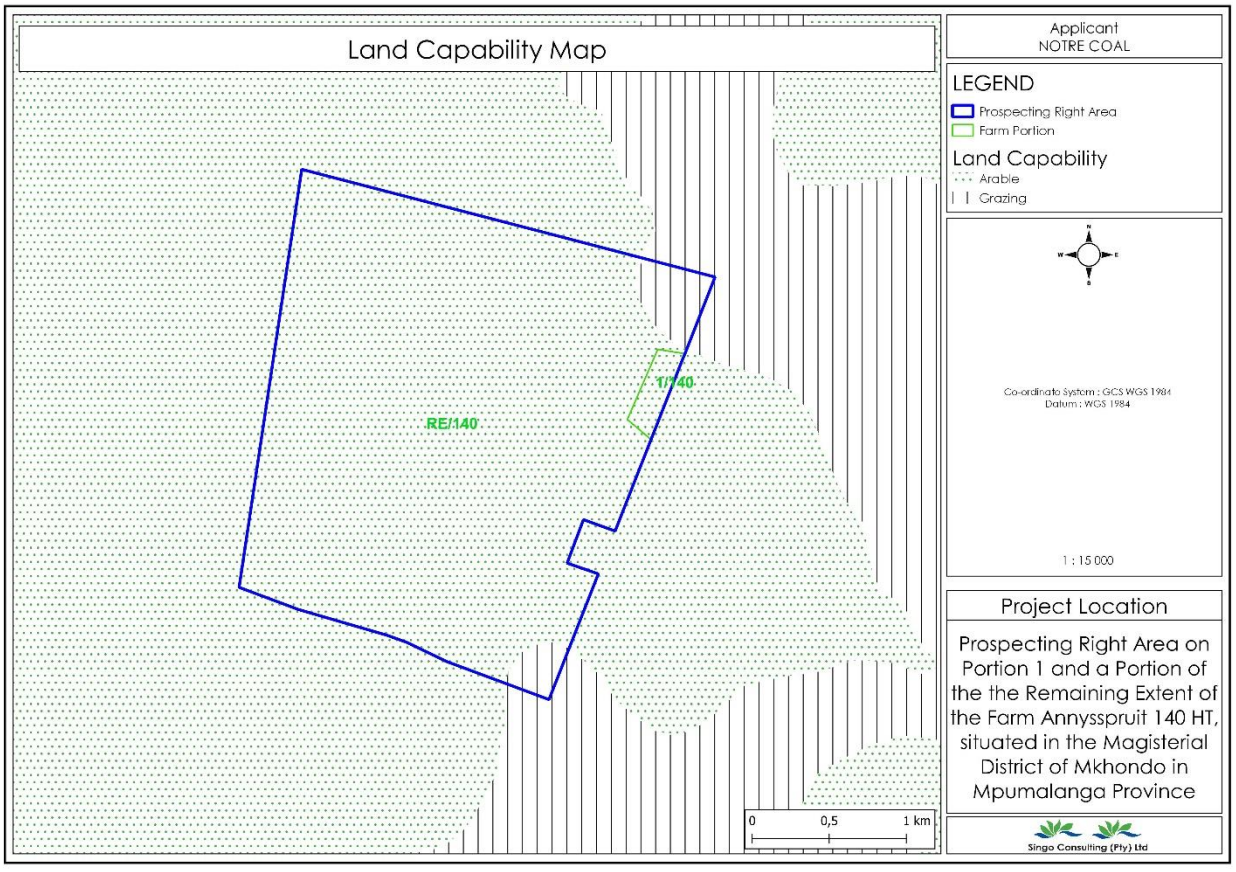
Google Earth View Map



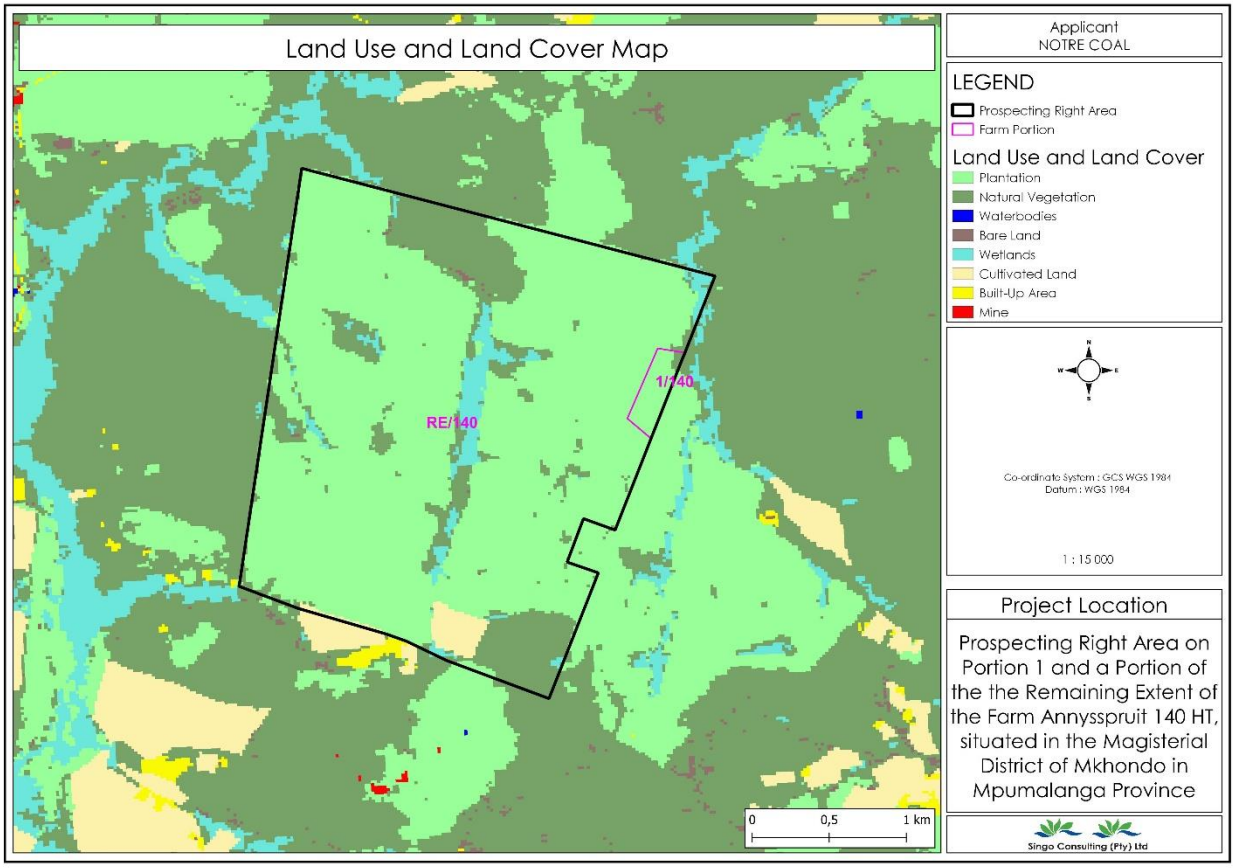
Hydrology and Topology Map



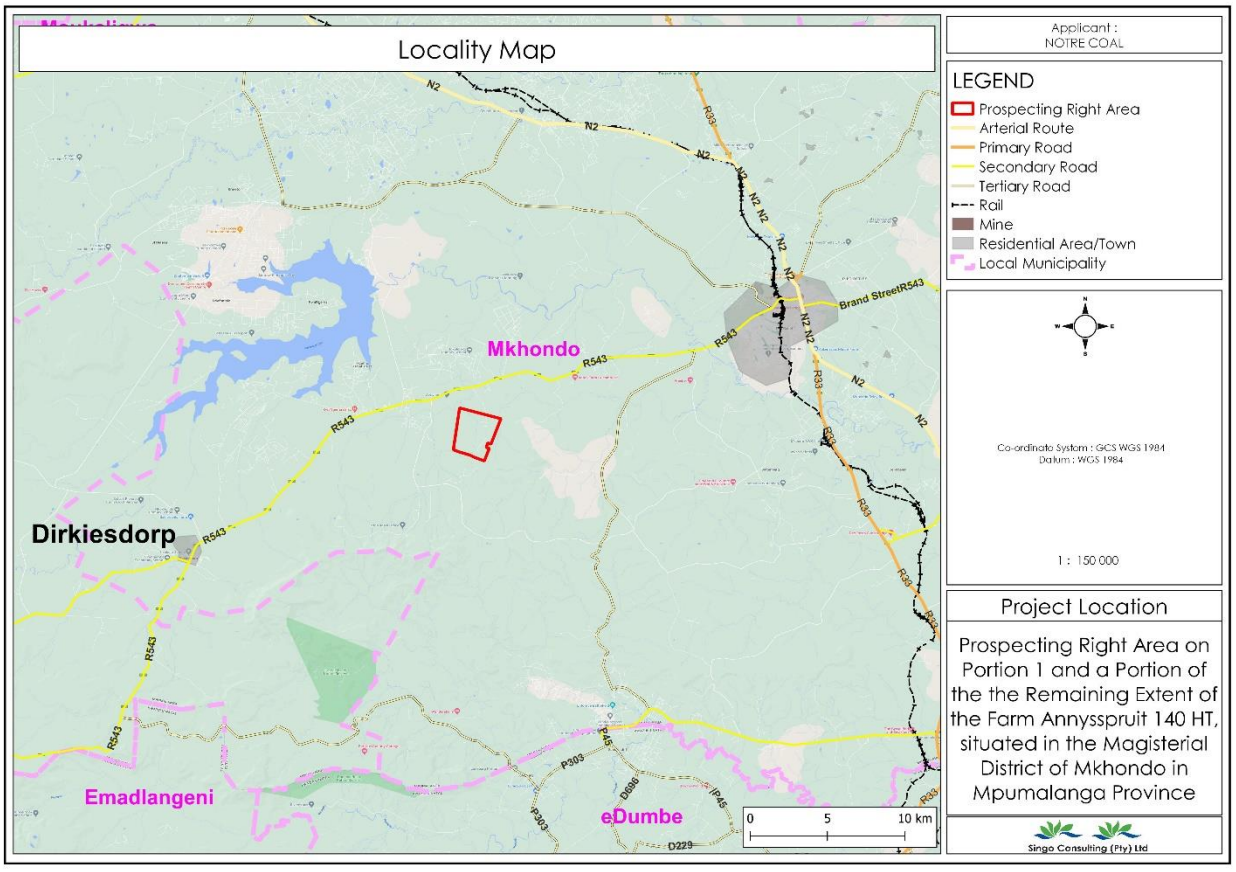
Hydrology Map



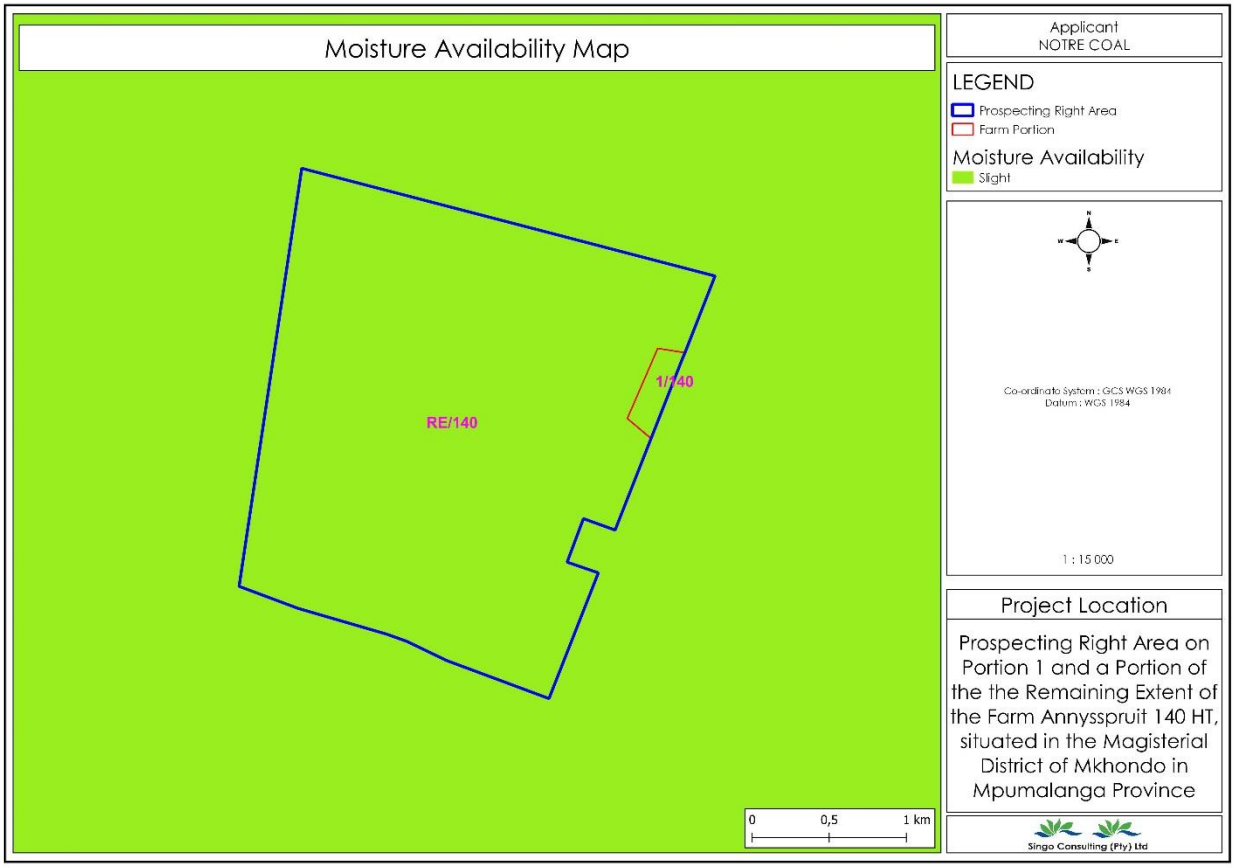
Land Capability Map



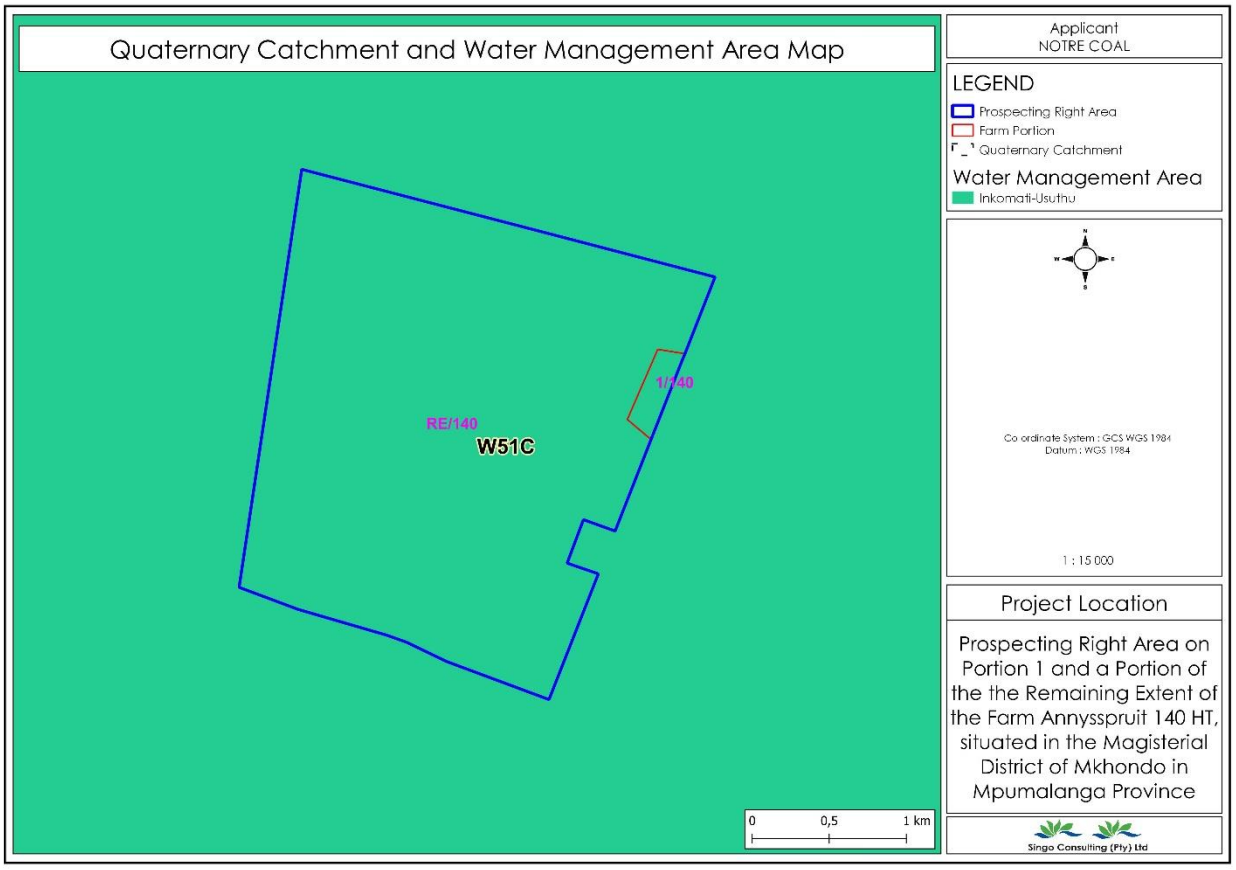
Land Use and Land Cover Map



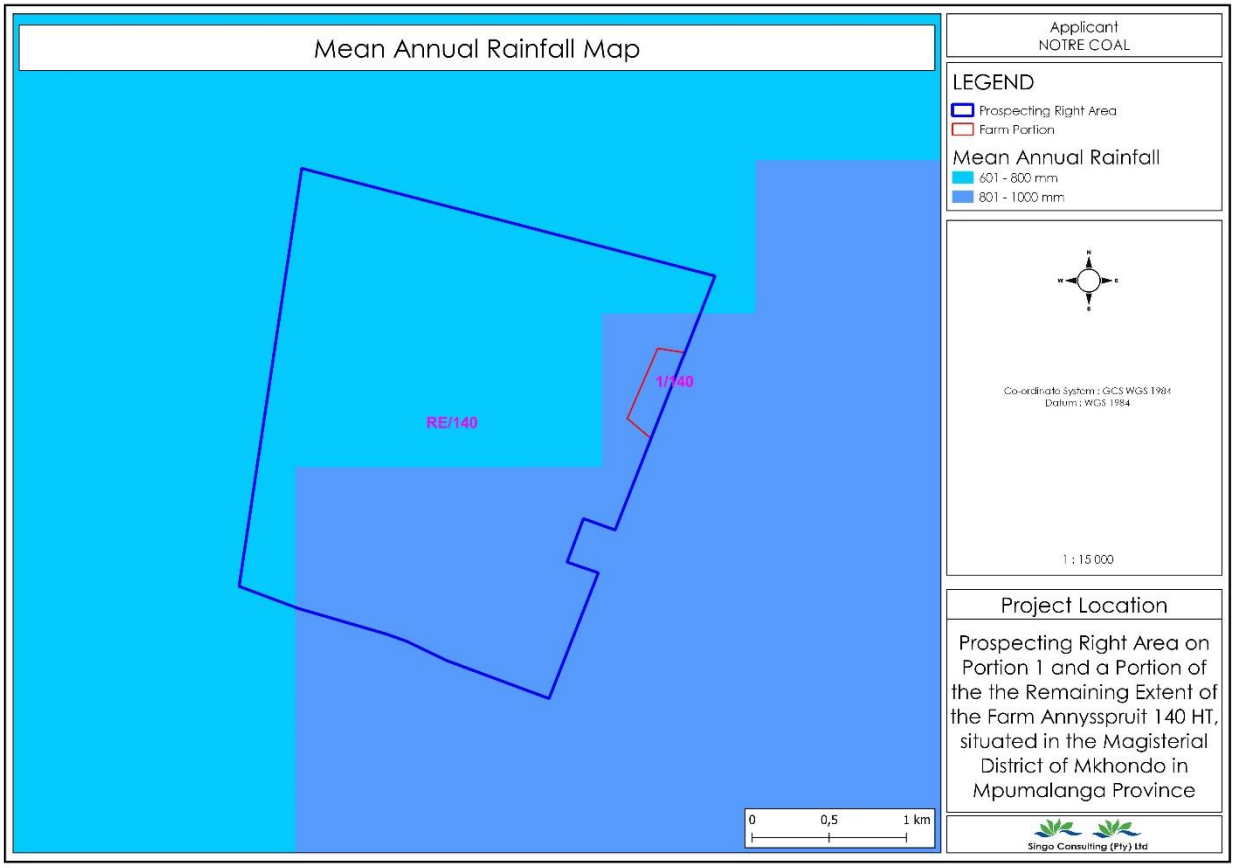
Locality Map



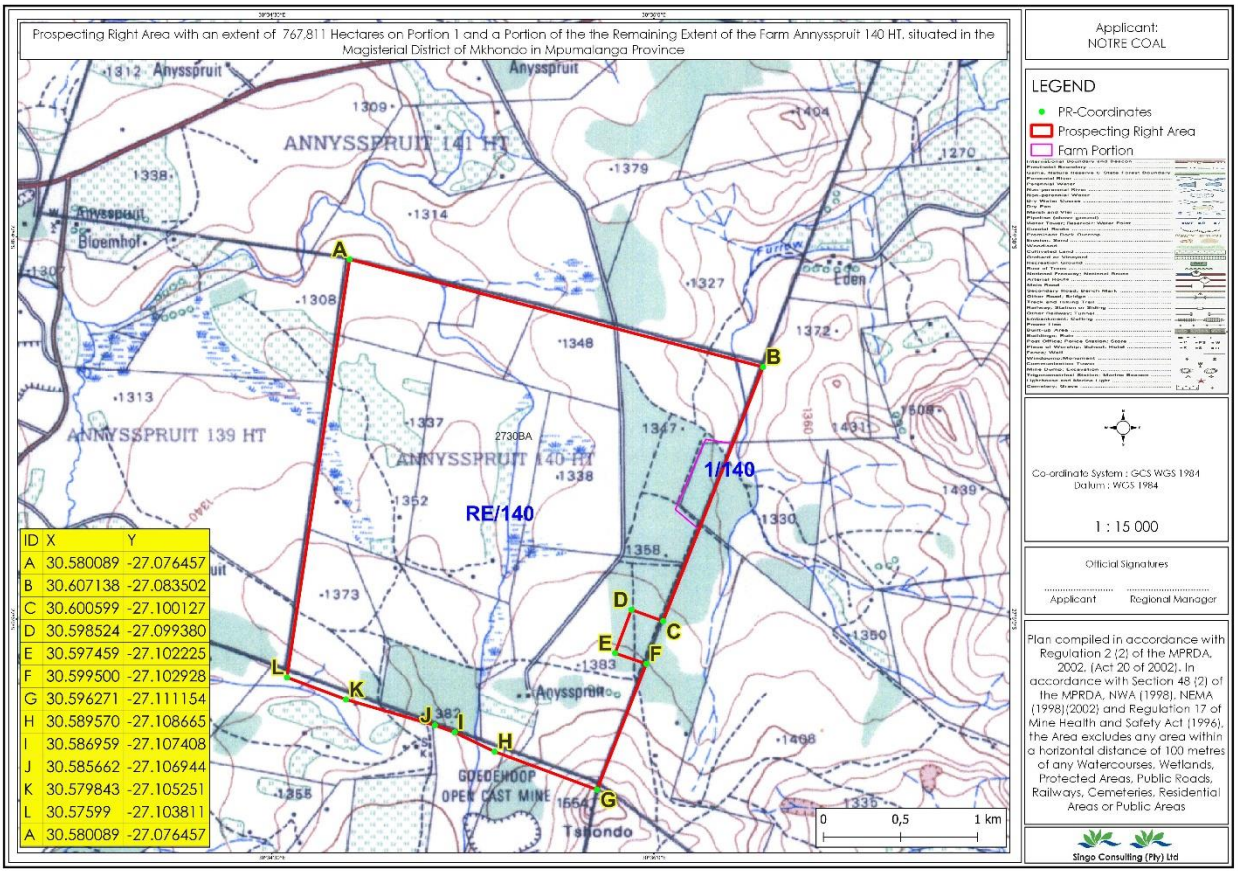
Moisture Availability Map



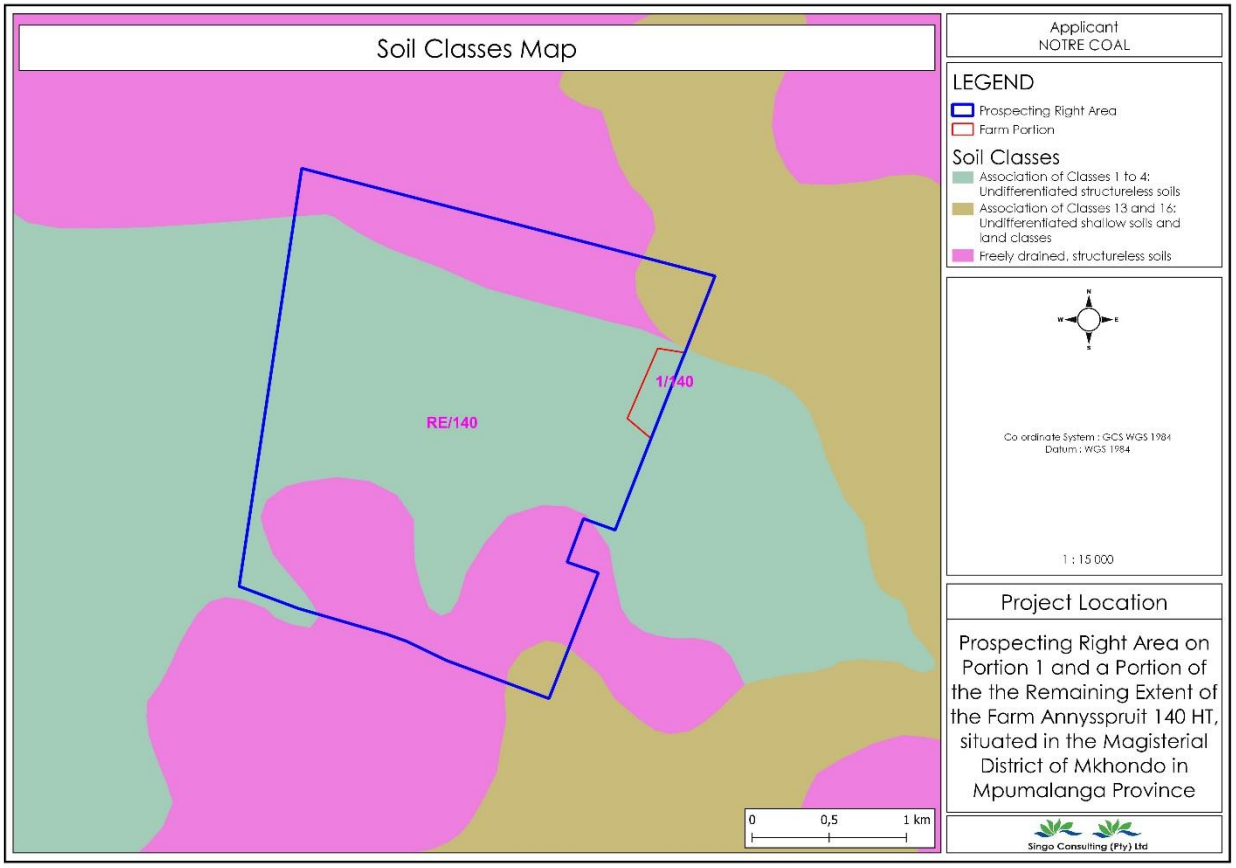
Quaternary Catchment and Water Management Area Map



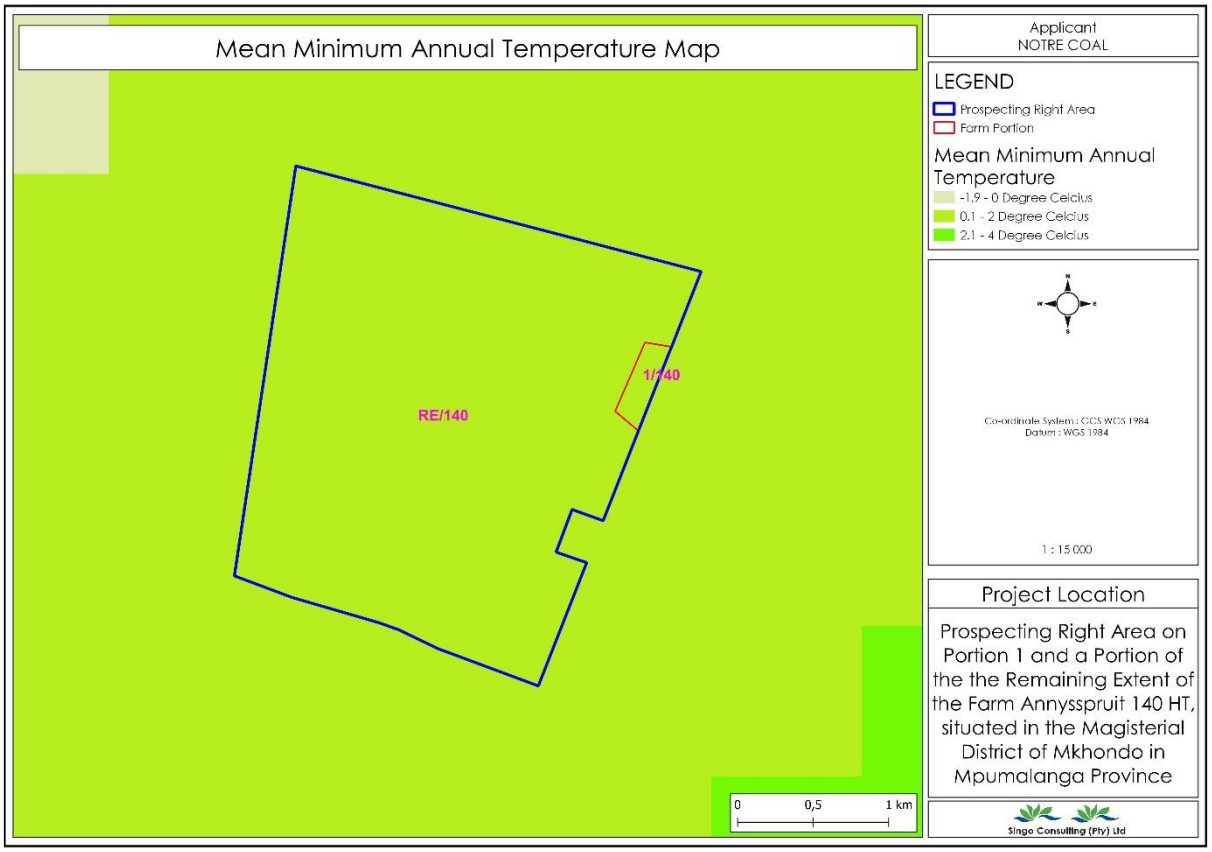
Mean Annual Rainfall Map



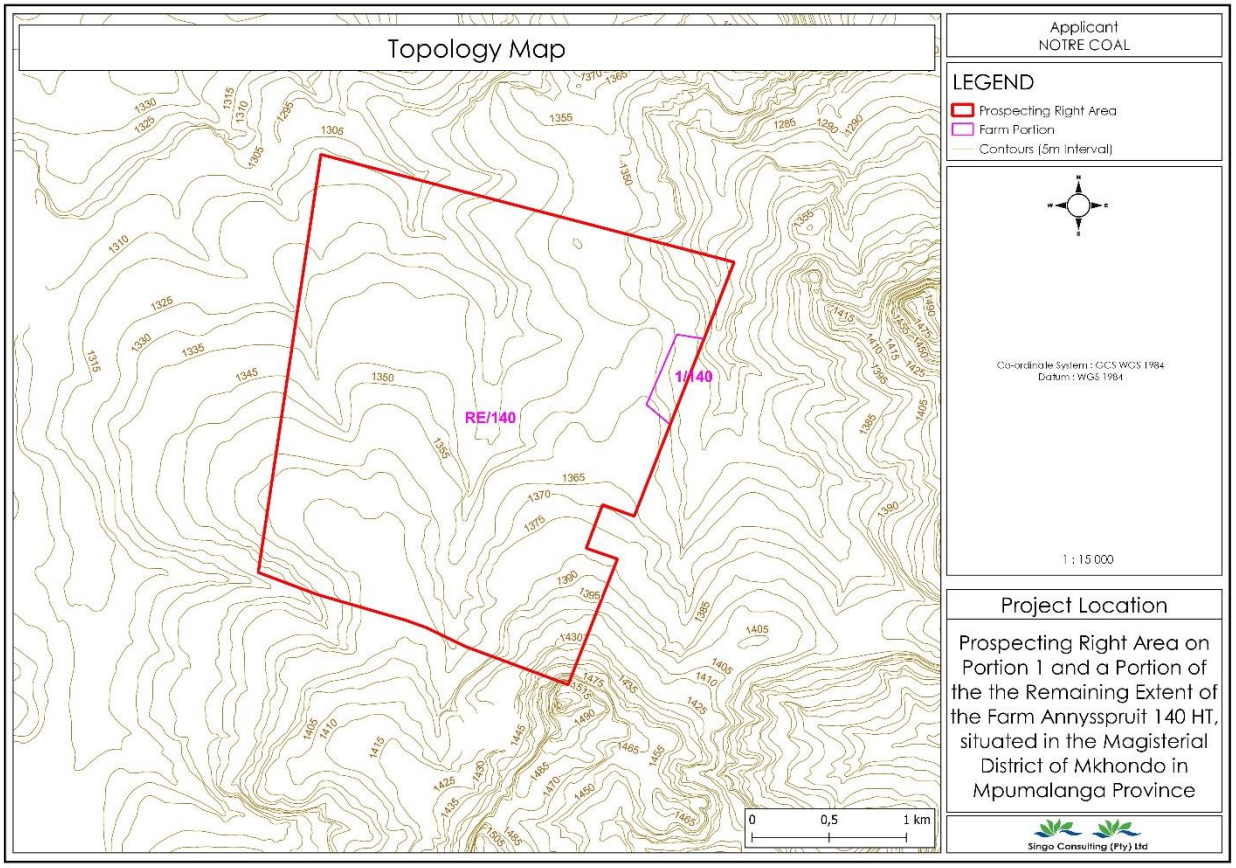
Regulation Map



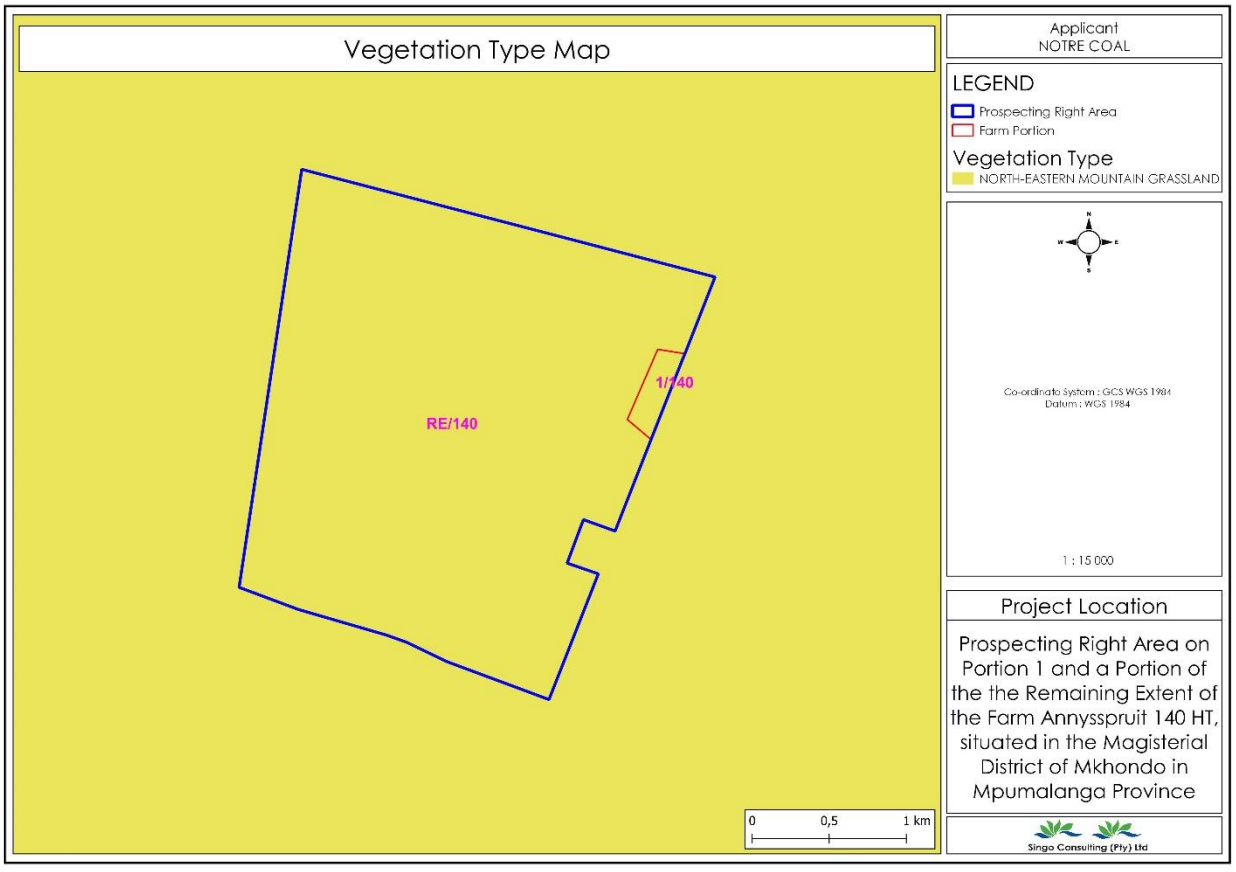
Soil Classes Map



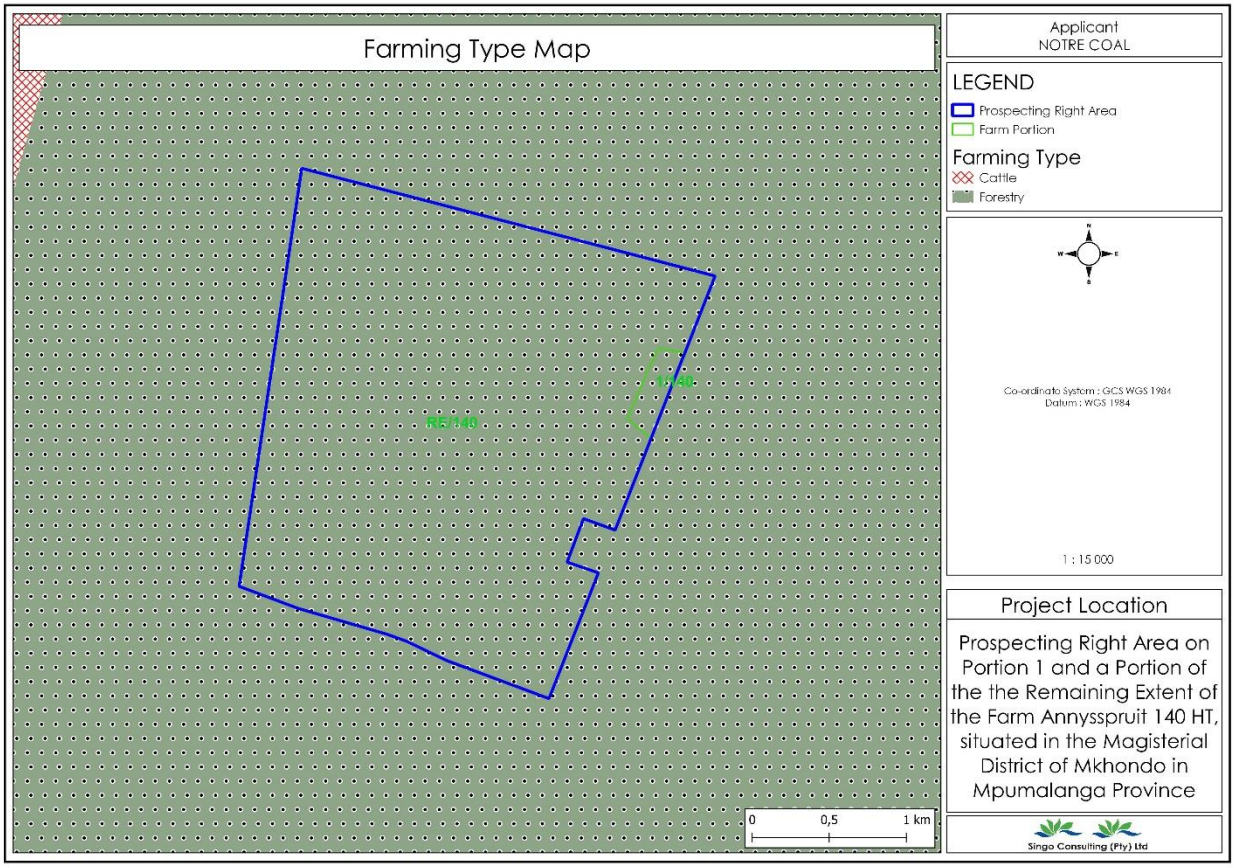
Mean Minimum Annual Temperature Map



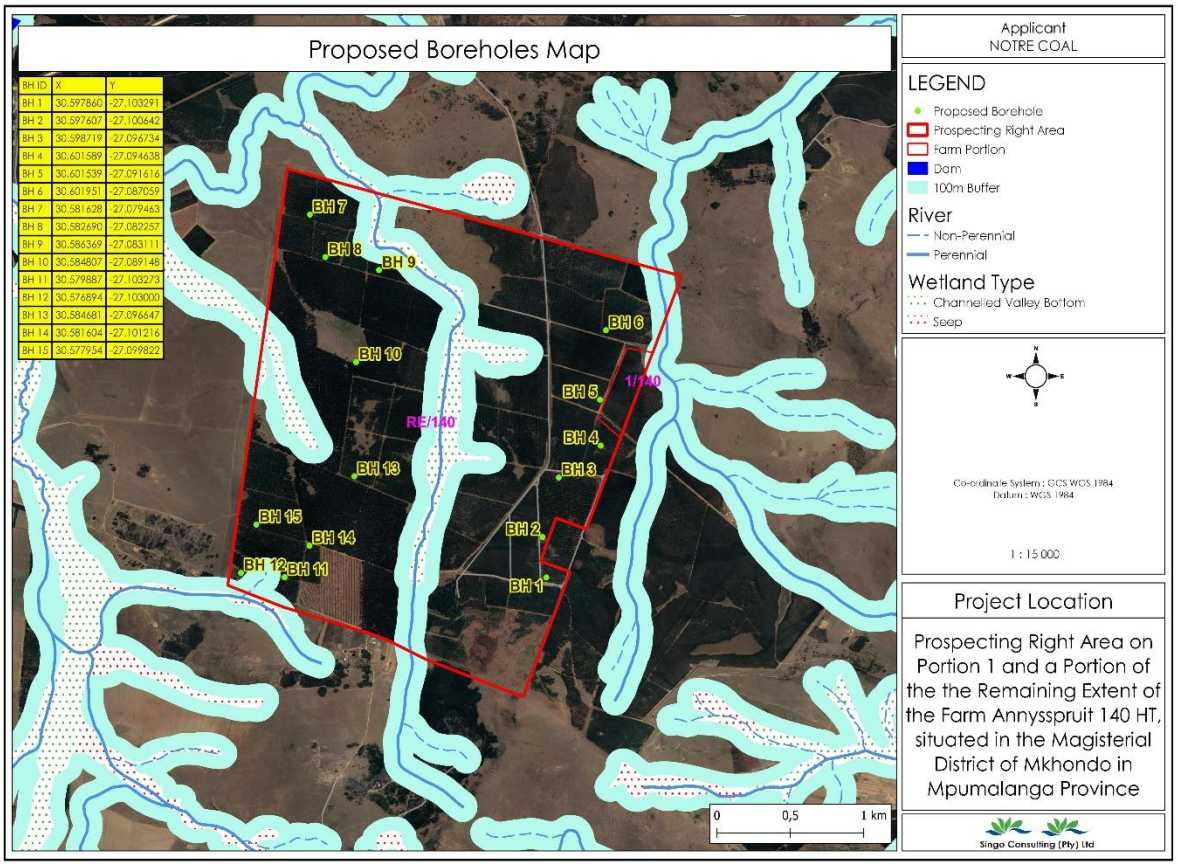
Topology Map



Vegetation Map

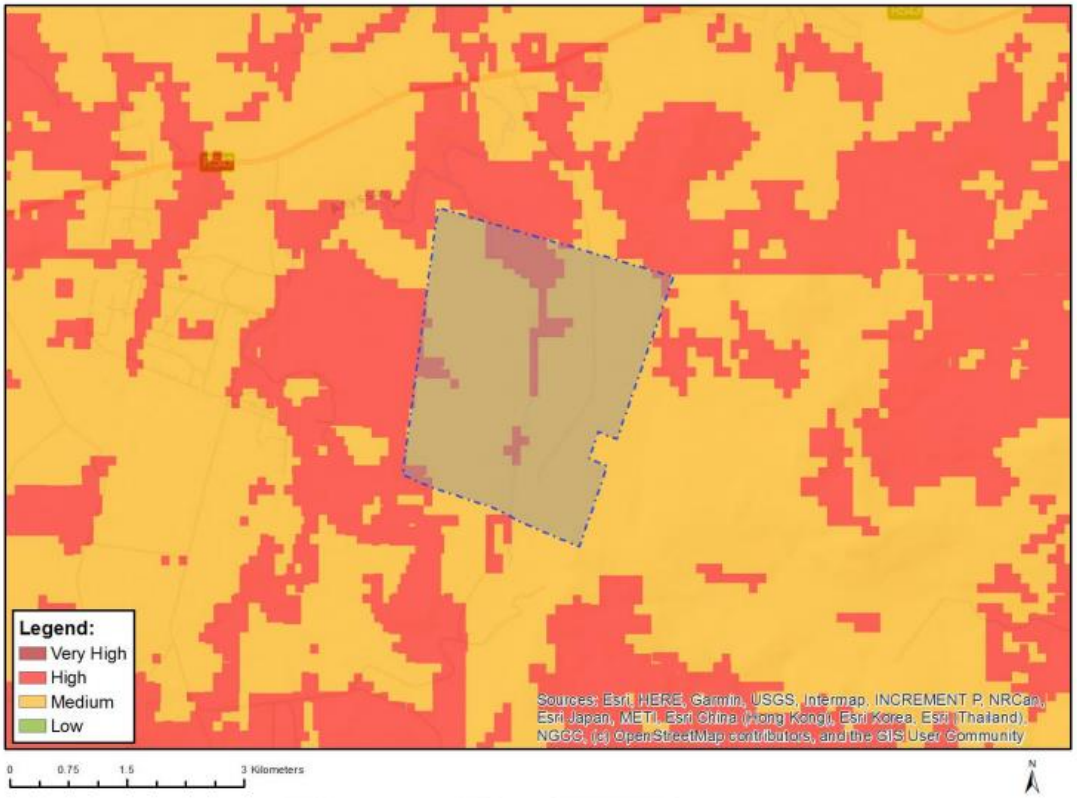


Farming Type Map



Proposed sampling points map

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Tyto capensis
High	Aves-Balearica regulorum
High	Aves-Geronticus calvus
High	Aves-Eupodotis senegalensis
High	Aves-Sagittarius serpentarius
Medium	Aves-Tyto capensis
Medium	Aves-Stephanoaetus coronatus
Medium	Aves-Balearica regulorum
Medium	Aves-Sagittarius serpentarius
Medium	Aves-Geronticus calvus
Medium	Aves-Eupodotis senegalensis
Medium	Mammalia-Chrysospalax villosus
Medium	Mammalia-Ourebia ourebi ourebi

Map of relative animal species them sensitivity

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

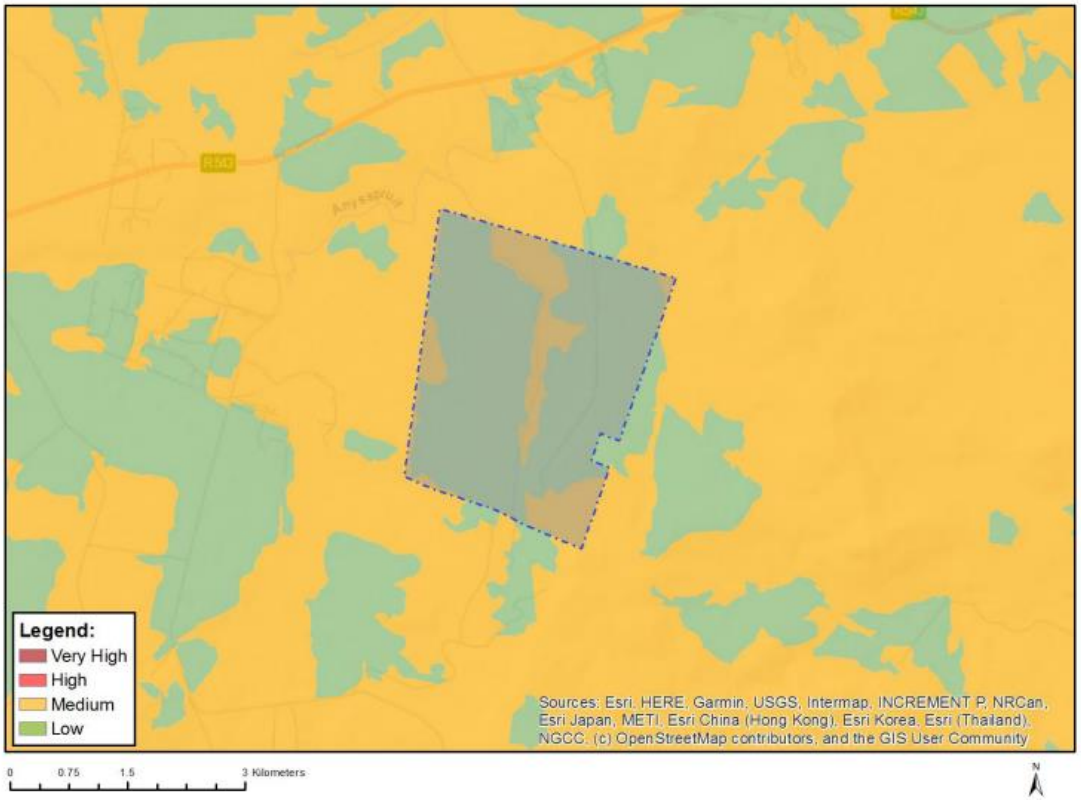
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

Map of relative archaeological and cultural heritage theme sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 1252
Medium	Bowkeria citrina
Medium	Melanospermum italae
Medium	Sensitive species 1003
Medium	Dracosciadium italae
Medium	Lotononis amajubica
Medium	Sensitive species 41
Medium	Sensitive species 691
Medium	Sensitive species 998
Medium	Sensitive species 1219
Medium	Sensitive species 1152
Medium	Sensitive species 313

Map of relative plant species theme sensitivity.

Appendix 4: Response letters to I&AP

Due to POPIA, such information will be made available on the final BA

Appendix 5: Financial Provision.

CALCULATION OF THE QUANTUM

Applicant: 

Evaluator: **Makhubela Dineo**

Ref No.: **MP 30/5/1/1/2/17554 PR**
Date: **2-Sep-22**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	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	1280.25	49	0.03	1	1881.9675
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		28906.8075

1	Preliminary and General	3468.8169	weighting factor 2 1	3468.8169
2	Contingencies	2890.68075		2890.68075
			Subtotal 2	35266.31
			VAT (15%)	3168.52
			Grand Total	**38435**

SIGN Makhubela Dineo

DATE 2/9/2022

Appendix 6: Basic Studies