

**Prospecting Right Application for Coal on Portion 11, 17-23 and 25-37 of the Farm Moabsvelden 248 IR, situated in the Delmas Magisterial District, Mpumalanga Province.**

**PREPARED BY**



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**PREPARED ON BEHALF OF:**

**Mandlezile industrial supply  
(Pty)Ltd**

**DMRE REF: MP 30/5/1/1/2/15846 PR**

**DRAFT REPORT**

**2021**



mineral resources

Department:  
Mineral Resources  
REPUBLIC OF SOUTH AFRICA

## **BASIC ASSESSMENT REPORT**

**AND**

## **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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

### **APPLICANT**

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**FILE REFERENCE NUMBER SAMRAD: DMRE REF: MP 30/5/1/1/2/15846 PR**

## IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment” unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact.

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

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

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

**It is furthermore an instruction that** the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information requested 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 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 activity is located and document how the proposed 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 the 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.

# TABLE OF CONTENTS

IMPORTANT NOTICE.....	2
OBJECTIVE OF THE BASIC ASSESSMENT PROCESS.....	3
TABLE OF CONTENTS.....	4
LIST OF FIGURES.....	7
LIST OF TABLES.....	8
LIST OF APPENDICES.....	9
ABBREVIATIONS.....	10
1 INTRODUCTION.....	11
1.1 DETAILS OF THE EAP.....	12
1.2 EXPERTISE OF THE EAP.....	12
1.3 LOCATION OF THE OVERALL ACTIVITY.....	13
2 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY.....	14
2.1 DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES.....	14
2.2 DESCRIPTION OF PLANNED INVASIVE ACTIVITIES.....	15
2.3 DESCRIPTION OF PRE/FEASIBILITY STUDIES.....	16
2.4 LISTED AND SPECIFIED ACTIVITIES.....	19
3 POLICY AND LEGISLATIVE CONTEXT.....	20
4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.....	21
5 MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.....	24
6 FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE.....	25
6.1 DETAILS OF DEVELOPMENT FOOTPRINT ALTERNATIVES.....	25
6.1.1 PROPERTY.....	25
6.1.2 TYPE OF ACTIVITY.....	25
6.1.3 DESIGN OR LAYOUT.....	25
6.1.4 TECHNOLOGY ALTERNATIVES.....	26
6.1.5 OPERATIONAL ASPECTS.....	26
6.1.6 OPTION OF NOT IMPLEMENTING.....	26
6.2 DETAILS OF THE PUBLIC PARTICIPATION PROCESS TO BE FOLLOWED.....	26
6.2.1 PUBLIC PARTICIPATION METHODOLOGY.....	26
6.2.2 IDENTIFICATION OF I&AP'S.....	31

6.3	SUMMARY OF ISSUES RAISED BY I&AP'S .....	32
6.4	THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES .....	37
6.4.1	SOCIO-ECONOMIC CONTEXT.....	37
7	TYPE OF ENVIRONMENT AFFECTED BY THE PROPOSED ACTIVITY .....	38
7.1	GEOLOGY .....	38
7.2	SOILS .....	41
7.3	TOPOGRAPHY & HYDROLOGY .....	44
7.4	HYDROGEOLOGY.....	48
7.5	CLIMATE.....	49
7.6	FLORA & FAUNA .....	51
7.7	CRITICAL BIODIVERSITY .....	53
7.8	CULTURAL AND HERITAGE .....	54
7.9	ENVIRONMENTAL ASPECTS WHICH MAY REQUIRE PROTECTION AND/OR REMEDIATION .....	55
7.10	DESCRIPTION OF CURRENT LAND USES .....	56
7.11	DESCRIPTION OF SPECIFIC ENVIRONMENTAL FEATURES AND INFRASTRUCTURE ON SITE.....	58
7.12	IMPACTS AND RISKS IDENTIFIED.....	59
7.13	THE IMPACT ASSESSMENT METHODOLOGY .....	59
7.14	THE POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED .....	64
7.15	THE POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK .....	65
7.16	MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED .....	67
7.17	STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE .....	67
8	FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY .....	67
9	IMPACT ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK .	69
10	SUMMARY OF SPECIALIST REPORTS.....	75
11	ENVIRONMENTAL IMPACT STATEMENT .....	75
11.1	SUMMARY OF KEY FINDINGS .....	75
11.2	SUMMARY OF POSITIVE AND NEGATIVE IMPLICATIONS AND RISKS .....	75
12	PROPOSED IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES .....	76
13	ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION .....	77
14	DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE .....	77

15	REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED .....	77
15.1	REASONS WHY THE ACTIVITY SHOULD BE AUTHORISED OR NOT.....	77
15.2	CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION.....	78
16	PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.....	78
17	UNDERTAKING.....	78
18	FINANCIAL PROVISION.....	78
18.1	EXPLAIN HOW THE AFORESAID AMOUNT WAS DERIVED .....	79
18.2	CONFIRM THAT THIS AMOUNT CAN BE PROVIDED FOR FROM OPERATING EXPENDITURE .....	79
19	SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY .....	79
19.1	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 BAR REPORT MUST INCLUDE THE: .....	80
19.1.1	IMPACT ON THE SOCIO-ECONOMIC CONDITIONS OF ANY DIRECTLY AFFECTED PERSON .....	80
19.1.2	IMPACT ON ANY NATIONAL ESTATE REFERRED TO IN SECTION 3(2) OF THE NATIONAL HERITAGE RESOURCES ACT .....	80
20	OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT .....	80
21	INTRODUCTION .....	81
21.1	DETAILS OF THE EAP .....	81
21.2	DESCRIPTION OF THE ASPECTS OF THE ACTIVITY .....	81
21.3	COMPOSITE MAP.....	81
22	DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS.....	81
22.1	DETERMINATION OF CLOSURE OBJECTIVES .....	81
22.2	VOLUMES AND RATE OF WATER USE REQUIRED FOR THE OPERATION.....	82
22.3	HAS A WATER USE LICENCE BEEN APPLIED FOR? .....	82
22.4	IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES .....	83
22.5	IMPACT MANAGEMENT ACTIONS AND OUTCOMES .....	95
23	FINANCIAL PROVISION.....	102
23.1	DESCRIBE THE CLOSURE OBJECTIVES AND THE EXTENT TO WHICH THEY HAVE BEEN ALIGNED TO THE BASELINE ENVIRONMENT DESCRIBED UNDER THE REGULATION.....	102
23.2	CONFIRM SPECIFICALLY THAT THE ENVIRONMENTAL OBJECTIVES IN RELATION TO CLOSURE HAVE BEEN CONSULTED WITH LANDOWNER AND INTERESTED AND AFFECTED PARTIES .....	102
23.3	REHABILITATION PLAN .....	102
23.3.1	INTEGRATED REHABILITATION AND CLOSURE PLAN .....	102

23.3.2	POST-CLOSURE MONITORING AND MAINTENANCE .....	104
23.4	EXPLAIN WHY IT CAN BE CONFIRMED THAT THE REHABILITATION PLAN IS COMPATIBLE WITH THE CLOSURE OBJECTIVES .....	104
23.5	CALCULATE AND STATE THE QUANTUM OF THE FINANCIAL PROVISION REQUIRED TO MANAGE AND REHABILITATE THE ENVIRONMENT IN ACCORDANCE WITH THE APPLICABLE GUIDELINE .....	104
23.6	CONFIRM THAT THE FINANCIAL PROVISION WILL BE PROVIDED AS DETERMINED .....	104
24	MECHANISMS FOR MONITORING COMPLIANCE.....	105
25	INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT.....	111
26	ENVIRONMENTAL AWARENESS PLAN AND TRAINING.....	111
26.1	MANNER IN WHICH EMPLOYEES WILL BE INFORMED OF ENVIRONMENTAL RISKS .....	111
26.2	MANNER IN WHICH RISKS WILL BE DEALT WITH TO AVOID POLLUTION OR DEGRADATION OF THE ENVIRONMENT .....	111
27	SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY .....	111
28	UNDERTAKING.....	112
	APPENDICES .....	113

## LIST OF FIGURES

<b>Figure 1:</b>	Regulation 2.2 map of the project area.....	13
<b>Figure 2:</b>	Locality map of the proposed prospecting area.....	14
<b>Figure 3:</b>	Typical layout plan of a drill site.....	16
<b>Figure 4:</b>	Placement of site notices .....	28
<b>Figure 5:</b>	Proof of Newspaper Advertisement (red polygon).....	29
<b>Figure 6:</b>	Windeed Search Results .....	30
<b>Figure 7:</b>	Geological map of the Application area .....	42
<b>Figure 8:</b>	soil classes map of the area under study .....	43
<b>Figure 9:</b>	Soil observed on site.....	43
<b>Figure 10:</b>	Hydrology & Topology map of the proposed project area.....	45
<b>Figure 11:</b>	Observed on-site water course.....	45
<b>Figure 12:</b>	Cross section of a fractured aquifer.....	46
<b>Figure 13:</b>	Aquifer classification of South Africa.....	47
<b>Figure 14:</b>	Average temperatures in Delmas .....	49
<b>Figure 15:</b>	Mean annual rainfall in the proposed area .....	50
<b>Figure 16:</b>	Mean minimum annual temperatures on the proposed area. ....	50
<b>Figure 17:</b>	Vegetation type map of the project area.....	51
<b>Figure 18:</b>	Vegetation observed on site. ....	52
<b>Figure 19:</b>	Relative Plant Species Theme Sensitivity (source: screening report).....	52
<b>Figure 20:</b>	Relative Animal Species Theme Sensitivity (source: screening report). ....	53



<b>Figure 21:</b> Map showing the Critical Biodiversity Areas of the Proposed Project Area.....	54
<b>Figure 22:</b> Map of Relative Archaeological And Cultural Heritage Theme Sensitivity.....	55
<b>Figure 23:</b> Buffer map for the proposed application area.....	56
<b>Figure 24:</b> Land Use and Land Cover Classes of the Project Area.....	57
<b>Figure 25:</b> <i>Environmental Features and infrastructure on site</i> .....	58
<b>Figure 26:</b> Regulation map of the proposed project area.....	133

## LIST OF TABLES

<b>Table 1:</b> Abbreviated terms and definitions.....	10
<b>Table 2:</b> Details of the EAP that prepared the report.....	12
<b>Table 3:</b> Details of the EAP who reviewed the report .....	12
<b>Table 4:</b> The table below indicates the farm portions that fall within the Prospecting Right Application Area.....	13
<b>Table 5:</b> Timeframes of each of the proposed activities .....	17
<b>Table 6:</b> Listed and specified activities .....	19
<b>Table 7:</b> Policy and Legislative Context.....	20
<b>Table 8:</b> Identified Key Stakeholders .....	31
<b>Table 9:</b> Summary of issues raised by I&AP's.....	32
<b>Table 10:</b> Population of Victor Khanye Local Municipality per Ward .....	37
<b>Table 11:</b> Aquifer characterisation .....	47
<b>Table 12:</b> Thaba Chueu Mining within the proposed area.....	57
<b>Table 13:</b> Criteria for Determination of Impact Consequence.....	60
<b>Table 14:</b> Probability Scoring.....	61
<b>Table 15:</b> Determination of Environmental Risk.....	61
<b>Table 16:</b> Significance Classes .....	61
<b>Table 17:</b> Criteria for the Determination of Prioritisation .....	62
<b>Table 18:</b> Determination of Prioritisation factor.....	63
<b>Table 19:</b> Environmental Significance Rating.....	63
<b>Table 20:</b> Positive and negative impacts of the proposed project.....	64
<b>Table 21:</b> Impact Assessment Summary.....	69
<b>Table 22:</b> Financial Quantum.....	79
<b>Table 23:</b> Impacts to be mitigated.....	83
<b>Table 24:</b> Summary of impact management actions and outcomes.....	95
<b>Table 25:</b> Mechanisms for monitoring compliance.....	105

## LIST OF APPENDICES

<b>Appendix 1:</b> Details and experience of the EAP .....	114
<b>Appendix 2:</b> Background Information Document .....	131
<b>Appendix 3:</b> Landowner Engagement .....	134
<b>Appendix 4:</b> Stakeholders Consultation & Correspondence .....	135
<b>Appendix 5:</b> Project Maps.....	147
<b>Appendix 6:</b> Proof of Site Assessment and Placement of Site Notices .....	152
<b>Appendix 7:</b> Specialist Studies .....	153

## ABBREVIATIONS

**Table 1:** Abbreviated terms and definitions

<b>BAR</b>	: Basic Assessment Report
<b>BID</b>	: Background Information Document
<b>DMR</b>	: Department of Mineral Resources
<b>DWS</b>	: Department of Water and Sanitation
<b>EA</b>	: Environmental Authorization
<b>EAP</b>	: Environmental Assessment Practitioner
<b>EIA</b>	: Environmental Impact Assessment
<b>EIMS</b>	: Environmental Impact Management Services
<b>EMPr</b>	: Environmental Management Programme report
<b>GIS</b>	: Geographic Information System
<b>I&amp;AP</b>	: Interest and Affected Party
<b>MPRDA</b>	: Mineral and Petroleum Resources Development Act
<b>NEMA</b>	: National Environmental Management Act
<b>NEMWA</b>	: National Environmental Management Waste Act
<b>NWA</b>	: National Water Act
<b>PPP</b>	: Public Participation Process
<b>PRA</b>	: Prospecting Right Application
<b>PWP</b>	: Prospecting Works Programme

## **PART A**

### **SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT**

#### **1 INTRODUCTION**

Mandlezile industrial supply (Pty)Ltd applied for a Prospecting Right subject to Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an application for an Environmental Authorisation in terms to Chapter 6 of GNR 982 enacted under the National Environmental Management Act (Act 107 of 1998) (NEMA) for Coal.

Mandlezile industrial supply (Pty) Ltd is aiming to ascertain if economical viable mineral deposits exist within the application area. In order to do that, a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002) is a prerequisite. The Applicant is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report and Environmental Management Programme report (BAR & EMPr).

Mandlezile industrial supply (Pty) Ltd has appointed Singo Consulting (Pty) Ltd to compile the BAR & EMPr report in support of the Prospecting Right application which in turn will be submitted to the DMRE for adjudication. This BAR & EMPr has been designed to meet the specifications as set out in the NEMA's 2014 EIA Regulations. This report was compiled in compliance with the specific Department of Mineral Resources & Energy (DMRE) guidelines and reporting template succeeding that it will be the adjudicating authority for this application.

The proposed Prospecting Right application covers portions 11, 17-23 and 25-37 of the Farm Moabsvelden 248 IR and it is located approximately 6.30 km east of Delmas within the Victor Khanye Local Municipality. The Prospecting Right Application was accepted by DMRE on the 19<sup>th</sup> of April 2021. All feedback received during the period of the Public Participation Process (PPP) will be included in the report to be submitted for adjudication by the Department of Mineral Resources & Energy.

## 1.1 DETAILS OF THE EAP

Singo Consulting (Pty) Ltd has been appointed by Mandlezile Industrial Supply (Pty) Ltd as an independent Environmental Assessment Practitioner (EAP) to manage the Environmental Authorisation process by conducting an Environmental Impact Assessment, Public Participation for the proposed project and compile an Environmental Management Programme report

**Table 2:** Details of the EAP that prepared the report.

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## 1.2 EXPERTISE OF THE EAP

Please refer to *Appendix 1* for qualifications and Curriculum Vitae.

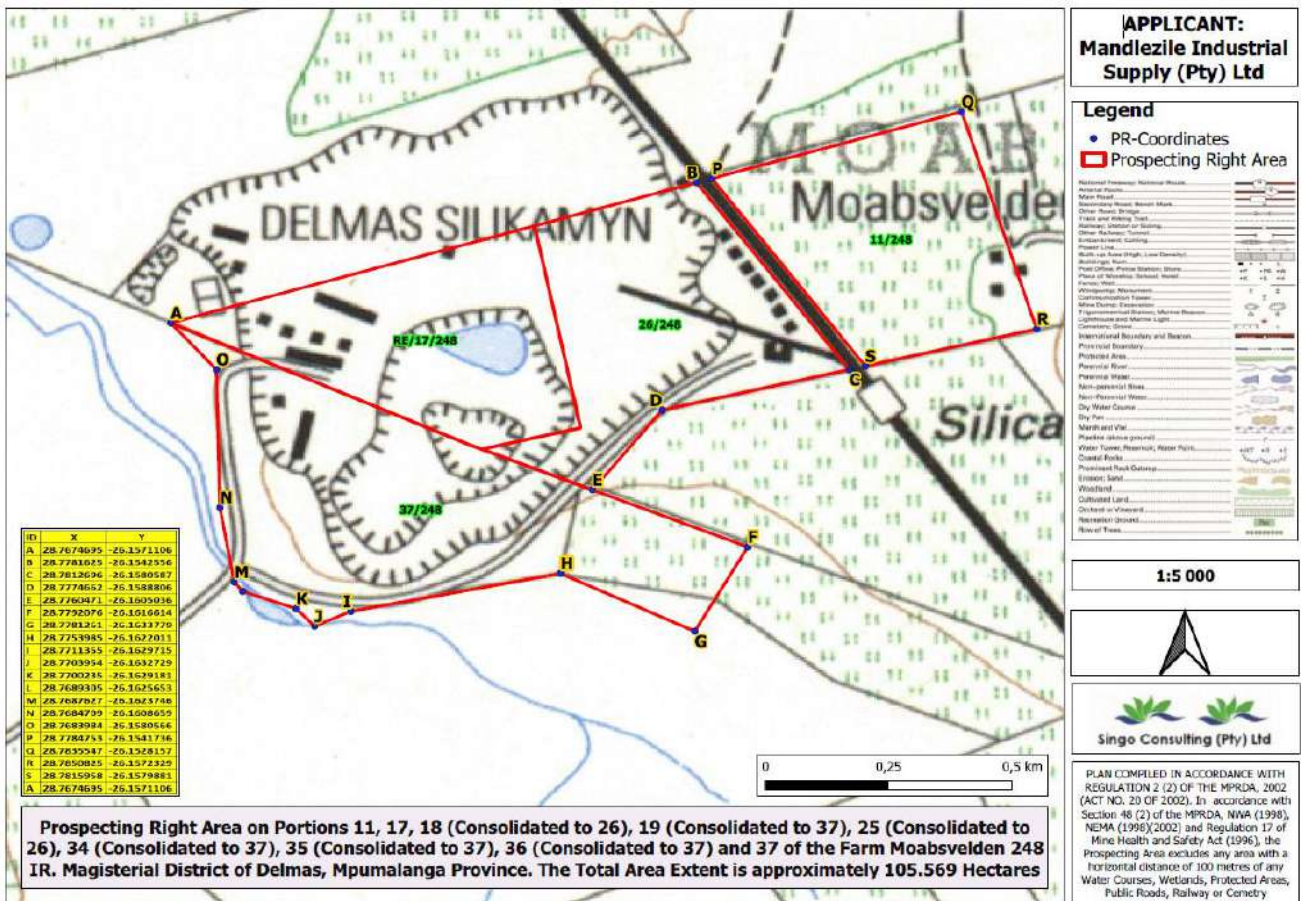
Singo Consulting (Pty) Ltd is a growing organisation in the field of geological sciences, environmental sciences, and environmental management. This organisation has provided sound practicable solutions to unavoidable environmental problems, particularly those triggered by human activities. This is achieved by tackling environmental problems using various fields of applied science, such as chemistry, hydrology, environmental geology, geochemistry, geophysics, and soil sciences. This leads to proper and sound environmental impact assessments and the production of enforceable environmental management plans. This organisation has conducted over 26 successful Environmental Impact Assessments (EIAs) in various Provinces of South Africa, Basic Assessment Reports and Environmental Management Programme reports (EMPr) which protect and promote the sustainable utilisation of environment.

### 1.3 LOCATION OF THE OVERALL ACTIVITY

**Table 4:** The table below indicates the farm portions that fall within the Prospecting Right Application Area.

<b>Farm Name (s)</b>	Moabsvelden 248 IR
<b>Farm Subdivision</b>	Portion 11, 17-23 and 25-37
<b>Application Area (Ha)</b>	105,569
<b>Magisterial District</b>	Delmas
<b>Distance and direction from nearest town</b>	The prospecting area is situated approximately 9.02 km east of Delmas and approximately 6.46 km south-west of Pinewood

Mandlezile industrial supply (Pty) Ltd Prospecting Project is located within the Magisterial District of Delmas under the jurisdiction of the Victor Khanye Local Municipality, situated within the Nkangala District Municipality. Please refer to Figure 1 & 2 below illustrating the regional setting, as well as the farm portions associated with the project.



**Figure 1:** Regulation 2.2 map of the project area

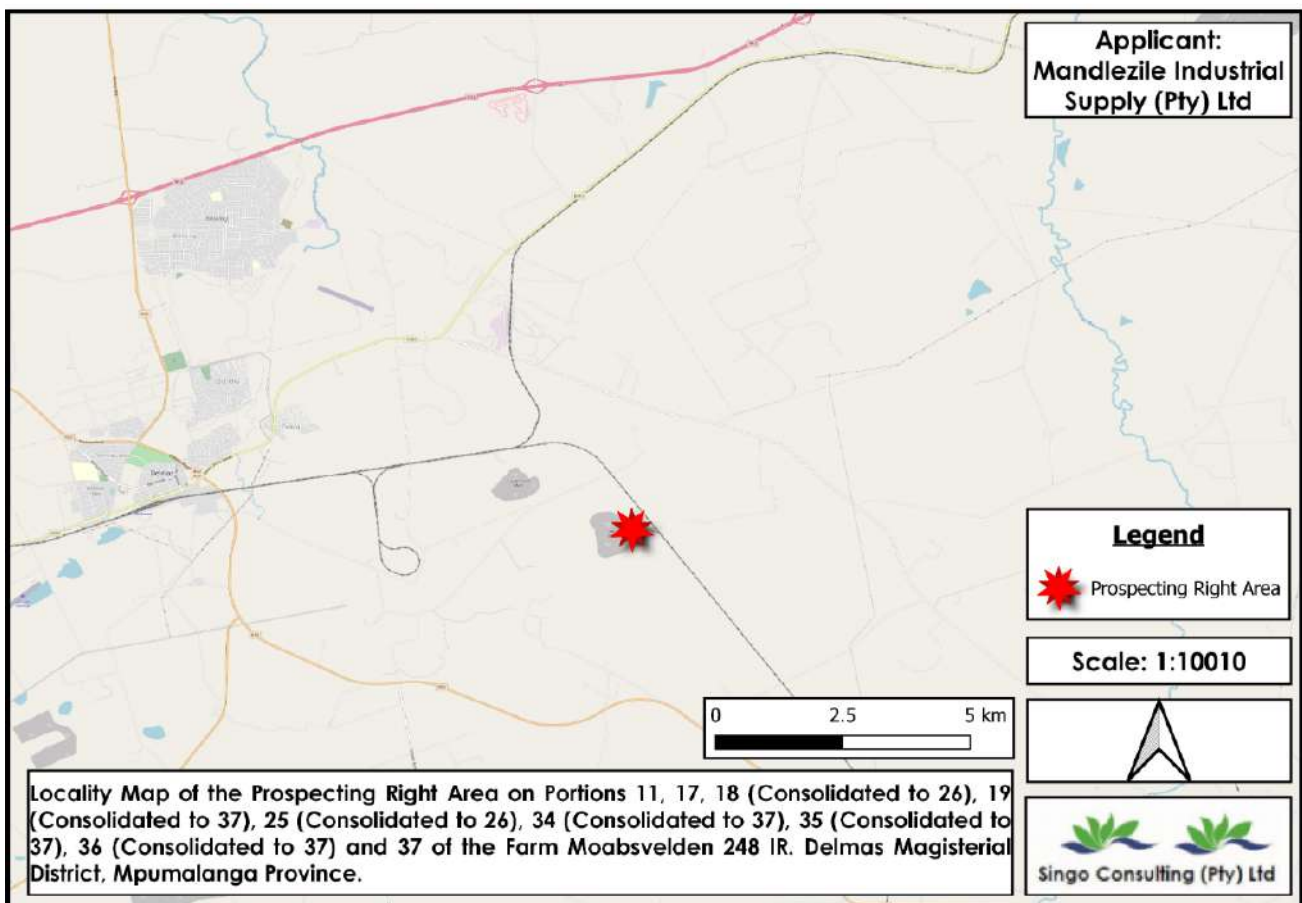
## 2 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Refer to the Regulation 2.2 plan and locality map above which clearly depicts the proposed prospecting area. The total number of boreholes proposed to be drilled for the operation is fifteen. There will be no construction of new access roads since the currently available existing roads have proven to be sufficient. Vegetation will be cleared at each drilling site and concurrent rehabilitation will take place after each drill site.

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.

### 2.1 DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES

Activities such as aerial photography, mobile studies, aeromagnetic surveys, etc. will not affect the land where there will be prospecting,



**Figure 2:** Locality map of the proposed prospecting area

### **Phase 1: Desktop study**

- Compilation of historical prospecting data;
- Analysis of existing data and maps to further understand prospecting area structure & geology; and

### **Phase 2: Geological field mapping**

The aim is to improve the overall understanding of the structure & geology in order to define targets for ground-based geophysics as well as to be able to interpret geophysical results hence field mapping. Field mapping will be focused on potentially prospective areas (Tranvaal Supergroup & Karoo sequence sediments) including rock outcrops, lithological contact zones, any geological structural features, surface depressions and vegetation types.

### **Phase 3: Semi-Regional Geophysical Survey (ground based)**

Ground magnetic and probably electro-magnetic surveys will be undertaken to define the contacts of the layers with the host rocks. A consideration to conduct airborne geophysical surveys will be made once preliminary investigations have been completed.

## **2.2 DESCRIPTION OF PLANNED INVASIVE ACTIVITIES**

The invasive activities contribute to land disturbances such as sampling, drilling and so on

### **a) Drilling**

The targeting of all drilling activities will rely on the results achieved in the preceding prospecting phases which is geological mapping and geophysical surveying.

Diamond drilling will be of the standard HQ or NQ size to delineate the strike length and thicknesses of the mineralized layers. Core will be marked, logged, photographed, and sampled according to the standard of the applicants logging and sampling procedures.

### **b) Assaying**

To determine the content or quality of the ore, rock chips / soil samples will be sent to a laboratory for crushing, splitting, pulverizing, and assaying. Samples from core will be split using a core cutter before being sent to the laboratory for analysis. c) Metallurgical Test Work

### **Phase 4: Resource drilling, Sampling and Analysis, Resource Estimation and Prefeasibility Study**

The initial planned invasive prospecting activities will consist of diamond drill boreholes drilled to appropriate depths to target any anomalies identified during Phases 2 & 3 of the non-invasive portion of the prospecting work plan. The geological information generated will be used to model and estimate resource. The resources will at least be expected to be in the Indicated Category according to the appropriate reporting standard (SAMREC, JORC, or NI43 -101)



### 2.3 DESCRIPTION OF PRE/FEASIBILITY STUDIES

Activities in this section includes but are not limited to initial, geological modelling, resource determination, possible future funding models, etc.

#### **Phase 5: Compilation, interpretation and modelling of data**

This phase will focus on compiling all the data gathered to date along with 3D modelling of any mineralized intersections. Any positively mineralized targets will be ranked. Should Phase 5 confirm mineralization with economic potential, then that target will advance to Phase 6.

#### **Phase 9: Desktop Pre-Feasibility Study**

This phase is designed to utilize the inferred resource to determine and would include:

- Closely spaced diamond drilling (Phase 8).
- 3D-modelling of the mineralized ore body.
- Resource estimation.
- A risk assessment to calculate if a full feasibility study is warranted.
- Risk assessment studies.

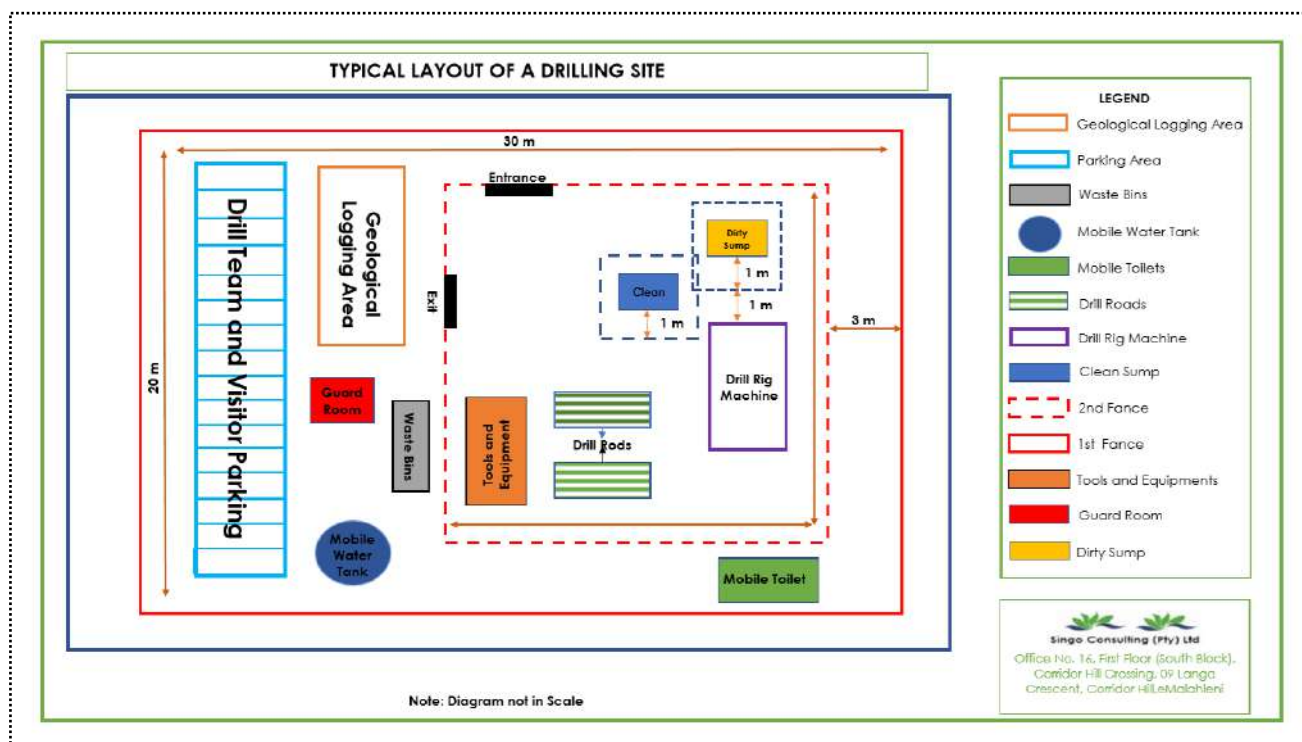


Figure 3: Typical layout plan of a drill site

**Table 5:** Timeframes of each of the proposed activities

Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
<b>Phase 1: Invasive Prospecting</b>						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 1 (30 days)	Borehole core data Coal core samples Rock core samples	Month 1	Exploration Geologist
	Sampling	Exploration Geologist		Core analyses Rock core analyses	Month 2 – 3	Laboratory analyst
<b>Phase 1: Non-invasive Prospecting</b>						
	Consultations with landowners	Land Tenure Specialist	Month 1	Legal Access Agreement	Month 1	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 7-8	Stratigraphic correct borehole data Analytical correct borehole data	Month 8 – 10 Month 8 - 10	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies of Coal and Diamond quality modelling	Exploration Geologist	Month 10-12	Contour maps Reserve breakdown	Month 10-12	Exploration Geologist /Modeller
	Inspection/Consultation with landowners	Land Tenure Specialist /Drilling contractor	Month 5-6	Rehabilitation clearance certificate	Month 5 - 6	Land Tenure Specialist / Environmental officer
<b>Phase 2: Invasive Prospecting</b>						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 13	Borehole core data Coal core samples	Month 13	Exploration Geologist Laboratory analyst
				Rock core samples Core analyses Rock core analyses	Month 13-14	
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 13-15	Lithology data Structural data	Month 13-14	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 13-14	Borehole water yield Water samples	Month 17-20	Geohydrologist
<b>Phase 2: Non-invasive Prospecting</b>						
	Consultation with landowners	Mining Rights officer	Month 12	Legal Access Agreement	Month 12	Land Tenure Specialist

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 correct borehole data	Month 20 – 22 Month 20 - 22	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and coal/minerals grade quality modelling	Exploration Geologist	Month 22-24	Contour maps Reserve breakdown	Month 22-24	Exploration Geologist /Modeler
	Inspection/Consultation with landowners	Mining Rights officer	Month 16-17	Rehabilitation clearance certificate	Month 16 - 17	Land Tenure Specialist / Environmental officer
<b>Phase 3: Invasive Prospecting</b>						
	Diamond drilling (5 borehole)	Exploration Geologist	Month 25	Borehole core data Coal core samples	Month 25	Exploration Geologist
				Rock core samples Aggregate and Silica Sand core analyses Rock core analyses	Month 25-60	Laboratory analyst
	Directional drilling (Optional)	Exploration Geologist	Month 24-30	Lithological data	Month 24-60	Exploration Geologist
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 25-27	Lithology data Structural data	Month 25-60	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 25-26	Borehole water yield Water samples	Month 29-60	Geohydrologist
<b>Phase 3: Non-invasive Prospecting</b>						
	Consultation with landowners	Mining Rights officer	Month 24	Legal agreement	Month 24	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 29-30	Stratigraphic correct borehole data Analytical correct borehole data	Month 32 – 60 Month 32 - 60	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and mineral quality modelling	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

## 2.4 LISTED AND SPECIFIED ACTIVITIES

**Table 6:** Listed and specified activities

NAME OF ACTIVITY	Aerial extent of the Activity	LISTED ACTIVITY	APPLICABLE LISTING	WASTE MANAGEMENT
	Ha or m <sup>2</sup>		NOTICE	AUTHORISATION
<b>(E.g. For prospecting -</b> drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...etc...etc E.g. for</b> <b>mining</b> , - excavations, blasting,		(Mark with an <b>X</b> where applicable or affected).	<b>(GNR 983, GNR 984 or GNR 985)</b>	(Indicate whether an authorisation is required in terms of the Waste
stockpiles, discard dumps or dams, Loading,				Management Act).
hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)				<b>(Mark with an X)</b>
Prospecting Area	105.569 ha	<b>x</b>	GNR 327 Listing Notice 1, Activity 20.	Not required
Vegetation clearing	20*30=600m <sup>2</sup> *15 boreholes=9000m <sup>2</sup> 9000m <sup>2</sup> ÷10000=0.9ha 0.9 ha of 105.569 ha		Not Listed	
Drilling	0.9 ha		Not Listed	
Equipment storage	50 m <sup>2</sup>		Not Listed	
Site offices	40 m <sup>2</sup>		Not Listed	
Ablution facilities	30 m <sup>2</sup>		Not Listed	
Sample storage	40 m <sup>2</sup>		Not Listed	

The boreholes will be drilled to a depth of 110 m. A borehole takes roughly about 2 days to complete; 15 boreholes are expected to take approximately 30 days. A total of 0.9 ha of the 105.569 ha (extent of application area) will be disturbed by the Prospecting activities.

### 3 POLICY AND LEGISLATIVE CONTEXT

**Table 7:** Policy and Legislative Context

<p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b> (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p><b>REFERENCE WHERE APPLIED</b></p>	<p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?</b>  (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
<p><b>Integrated Water Use License Application (IWULA)</b></p>		<p>No water use license is required for this application. Water required for drilling activities will be obtained from a legal source in the area or brought in via a mobile water tanker. Appropriate dust extraction/suppression equipment will be a condition imposed on the drill contractor for drill rigs.</p>
<p><b>National Environmental Management Act, 1998</b></p>	<p>This Basic Assessment Report &amp; EMPr</p>	<p>In terms of the NEMA, No. 107 of 1998 (as amended), an Application for Environmental Authorisation was submitted to the Mpumalanga Department of Mineral Resources and Energy on the 29<sup>th</sup> of November 2019.</p>
<p><b>National Heritage Resources Act, 1999</b></p>	<p>Management measures</p>	<p>Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and SAHRA notified in order for an investigation and evaluation of the find(s) to take place.</p>
<p><b>National Environmental Management: Waste Act, Act 59 of 2008 (NEMWA)NEM: WA (as amended)</b></p>	<p>Management measures environmental awareness plan</p>	<p>The generation of potential waste will be minimised through ensuring employees of the drilling contractor are subjected to the appropriate Environmental awareness campaign and toolbox sessions before drilling. All waste generated during the drilling activities will be disposed in a responsible manner.</p>
<p><b>Mineral and Petroleum Resources Development Act, 2002</b></p>	<p>Application for Prospecting in terms of Section 16</p>	<p>The applicant submitted a Prospecting Right Application to the DMRE (DMRE Ref: MP 30/5/1/1/2/15846 PR). The conditions and requirements attached to the granting of the prospecting right will apply to the prospecting activities.</p>
<p><b>Municipal Plans (Victor Khanye Local Municipality)</b></p>		

<b>Integrated Development Plan (IDP)</b>	Socio- economic	Mining has grown as an employer and now contributes 12.7% in the Victor Khanye local municipality and the employment situation is expected to improve over the medium term with additional jobs in the mining sector.
<b>Spatial Development Framework (SDF)</b>	Socio- economic	Functioning of the current environmental ecosystems will be protected and any developments will take awareness of these factors and will be incorporated into the strategic developed.

#### **4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES**

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.

The demand for coal in South Africa is driven by the Eskom power stations and export market. Eskom relies on coal fired power stations to produce approximately 95% of electricity in South Africa, and it uses over 90 million tons of coal per annum. This implies that Eskom is the biggest consumer of coal in our country, and the demand of coal is extremely high. Consequently, prospecting for coal is incredibly significant as it will reveal the coal reserves that are of economic importance. The results of prospecting will determine as to whether it is viable to mine or not. In the case where it is viable to mine, mining will then contribute to production of coal, which will help meeting its demand and sustain the generation of electricity in South Africa and other parts of the African continent.

The Minister of Mineral Resources and Energy, Mr GS Mantashe in 2018/2019 annual report stated that mining industry is one of the country's key economic sectors in South Africa. Furthermore, he indicated that over the years, mining has contributed to the national goal of growing the economy and creating jobs in order to counter the developmental challenges of inequality, poverty, and unemployment. In 2018, mining investments in the country totalled over R45 billion, which resulted in the creation of about 4 000 jobs. For the period 2018 to 2020, an estimated 60 mining projects are in the pipeline in exploration, expansion, new mines and processing plants, with an estimated investment value of R110.1 billion and projected employment estimated at 32 000 employees. These attest to the stability of the policy and regulatory environment, and South Africa still being considered an attractive destination for mining investment.

The applicant has identified the prospecting opportunity of coal upon portions 11, 17-23 and 25-37 of the Farm Moabsvelden 248 IR, whereby portion 11 is owned by K Nyathi Inv (Pty) Ltd, portion 17, 19 (cons 37), 34-36 (cons 37) and 37 are owed by Thaba Chueu Mining (Pty) Ltd. Portion 18 and 25 are consolidated to portion 26, portion 20 is consolidated into portion 39, which are owned by Samquartz (Pty) Ltd. The proposed project area covers a larger portion of Thaba Chueu Silica Mine. Based on the location of the proposed site, prospecting is favoured and might yield positive feedback. Major

activities taking place are mining and crop farming. Drill sites will be aimed at portion 11 avoiding the mined-out areas and minimising the impact of this drilling activities.

<b>NEED AND DESIRABILITY OF THE PROPOSED PROJECT</b>	
<b>PART I: NEED</b>	
<b>Questions (Notice 792, NEMA, 2012)</b>	<b>Answers</b>
<b>1.</b> 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.
<b>2.</b> Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	The planned activities would allow Mandlezile Industrial Supply (Pty) Ltd, to commence with mining and extend project duration, and thus the benefits to local communities and South Africa as a whole for e.g. work provision and social upliftment would continue for a longer period.
<b>3.</b> Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	<p>The IDP OF 2017-2022 indicated that unemployment within the Victor Khanye Municipality is exceptionally high. The statistics reflected that the employment level in the Victor Khanye Local Municipality is at 28, 9%. Leading industries in employment comprise of Trade (18, 7%), Agriculture (18, 2%) and Community Services contributing (14, 3%). However, the former two sectors are experiencing a decline in employment in the last few years whilst Community Services has increased and Mining as an employer has grown and now contributes 12, 7%.</p> <p>The Mandlezile Industrial Supply (Pty) Ltd prospecting will yield positive impact on the socio-economic conditions of the local communities involved once operations commence. It will also contribute to the socio-economic development of the region if it graduates to mining, by creating more jobs and providing developments to the local communities</p>
<b>4.</b> Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	Yes. All infrastructure for services and capacity will be temporary and will be provided for the proposed prospecting/drilling activities. Drilling mechanisms to be employed utilises air instead of water hence water will only be required for drinking purposes by personnel on site. A temporary storage tank will be on site to provide potable water for drinking and general use, which will be purchased from water retailers. 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 making use of mobile structures.
6.	Is the project part of a national programme to address an issue of national concern or importance?	The mining sector is a significant contributor to the National GDP as well as a massive employer of people. This project will contribute to the National Development Plan of eradicating poverty/unemployment. Chapter 6 of the National Development Plan highlights an "inclusive rural economy" and the objectives of this plan are to create jobs in mining and industry and activating rural economies through service to small and micro mining.
<b>PART II: DESIRABILITY</b>		
7.	Is the development the best practicable environmental option for this land/site?	Yes. Much of the region under review is undergoing mining and cultivation activities which have already had an impact on environmental management. The disturbed areas will be rehabilitated 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?	Partially. The project is not completed in accordance with the Local Spatial Development System (SDF) and Integrated Development Plan (IDP) goals in terms of land use but does not compromise the credibility of these respective forward planning documents. In Victor Khanye Municipality, unemployment is a serious problem and prospecting should be able to maintain continuity of existing employment and generate additional jobs in the prospecting area for a substantial period of time.
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	No, the integrity of the existing environmental management priorities for the area will not be compromised by this development.



10.	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).	Yes. The study area proposed for prospecting covers the larger portion of Thaba Chueu Mining which is in operation, and it is adjacent to Exxaro Leeuwpan Coal. 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)?	A cultural heritage impact assessment is being conducted by integrated specialist services (Pty) Ltd. The outcomes of the specialist study will be included in the Final Bar.
12.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	<p>In summary, due to the fact that the proposed project area is situated approximately 9 km away from the community and Delmas town, the impacts on well-being, following mitigation, will be as follows:</p> <ul style="list-style-type: none"> <li>• Visual: Medium</li> <li>• Dust: Medium</li> <li>• Noise: Medium</li> <li>• Vibrations: Low</li> </ul> <p>However, environmental good practice compliance policies would have limited effects.</p>
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 South Africa has been a cornerstone of the economy for a long period of history. South Africa offers ongoing proof that mineral revenues can create sizeable benefits to the economy in countries where they are sourced. In South Africa coal and clay have contributed to funding impressive economic growth and stability.
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.

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

According to the Municipality's Integrated Development Plan (IDP) of 2017-2020, the concentrated mining activities are mainly on coal and silica in the Delmas area and successively, with approximately 3 million metric tons of coal and 2 million metric tons of silica mined annually in the municipality. Furthermore, the IDP report indicated that unemployment rate is relatively high, however, the

employment situation is expected to improve over the medium term with additional jobs from the mining sector. Mining plays a huge role within the Victor Khanye Local Municipality economy hence a greater significance is placed on prospecting for realization of mining benefits.

The property provides the ideal geological formation for the presence of the commodities applied for. To a large extent, the project area is underlain by the intrusion of the Vryheid formation and to a limited extent, underlain by the geological formation known as the Malmani Dolomite Subgroup, of the Chuniespoort Group in the Transvaal Supergroup. The site is therefore regarded as the preferred site and alternatives are not considered.

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

### **6.1 DETAILS OF DEVELOPMENT FOOTPRINT ALTERNATIVES**

The geology is the primary driver in determining the location of prospecting and mining. The development footprint is expected to be a fraction of the application area size, which is estimated to be 105,569 hectares. As such no assessment of alternative development footprints was conducted.

#### **6.1.1 PROPERTY**

The application area is easily accessed via the unnamed road given rise by the R555 from its inception with the R50. The proposed project area lies approximately 9.40 km east of Delmas/Botleng towns and covers parts of Thaba Chueu Mining (Pty) Ltd. The area has a gentle undulating topography giving easy access to the site. The property is not categorised under any critical biodiversity according to Critical Biodiversity Areas (CBA) instead, it is heavily modified by mining and agricultural activities. The geology as well as the historical data available for the region forms basis for the selection of the application area.

#### **6.1.2 TYPE OF ACTIVITY**

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

#### **6.1.3 DESIGN OR LAYOUT**

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

- Portable ablution facilities will be used.
- It is planned to use one drill rig for all 15 drill holes.
- Rehabilitation will be tightly controlled, and supervision will be enforced.
- 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.

#### **6.1.4 TECHNOLOGY ALTERNATIVES**

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

#### **6.1.5 OPERATIONAL ASPECTS**

Operational aspects that have been considered for the effective implementation of the PWP include financial arrangements, appropriate equipment available, and technical skills available. The proposed work plan finances will be sourced from Mandlezile Industrial Supply (Pty) Ltd over the next five years. Details of the equipment available are included in Table 8 below. Mandlezile Industrial Supply (Pty) Ltd has ensured that community assistance will be required, with regards to technical personnel to execute the prospecting work program as well as the equipment desired.

#### **6.1.6 OPTION OF NOT IMPLEMENTING**

A development must be ecologically sustainable, and must also support socio-economic development, according to Section 24 of the Constitution of Government. Failure to enforce the prospecting activities might result in a lack of information regarding the presence of coal in the proposed area. If commercially feasible reserves exist within the location of interest and the applicant is not able to explore, the potential for future mining of the reserves might be lost. This may affect the possible job creation and community development for people in Victor Khanye Local Municipality.

The proposed prospecting activities have the capability to adversely affect the ecological environment and social environment. Nevertheless, those impacts can theoretically be prevented, reduced, mitigated, and controlled from low to exceptionally lower ranges through the demonstrated impact evaluation.

### **6.2 DETAILS OF THE PUBLIC PARTICIPATION PROCESS TO BE FOLLOWED**

#### **6.2.1 PUBLIC PARTICIPATION METHODOLOGY**

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 obtain valid, credible, and understandable information on the environmental impacts of the proposed activity and to provide all of the above to communicate their approval, concerns, objections, and questions with respect to the project proposed. The above mentioned contributes to the compilation of a detailed Basic Assessment Report & Environmental Management Programme report. The public participation process is undertaken in accordance with the

requirements of the EIA Regulations, 2014 (as amended, 07 April 2017) particularly Chapter 6 of this Regulation.

### **Notification of Interested & Affected Parties**

The following notification methods were used to notify the potential Interested and Affected Party(I&APs) during the Public Participation Process:

- The announcement of the proposed project was first made public on the 30<sup>th</sup> of April 2021 on the local Newspaper, Streeknuus/news Delmas. T. Link to Figure 6 for proof of publication.
- Consultation emails with Background Information Documents have been sent to the identified organs of state as from 01 May 2021 to inform them about the proposed prospecting right application.
- Site notices were plugged during the site visit on the 04<sup>th</sup> of May 2021 around the Delmas town, at the Farm boundaries as well as the surrounding area as another form of notifying any person/s who might be affected by the project.
- Further consultation with the representatives of the Farm owners is still on-going and the BAR & EMPr with the receivable comments/concerns or any issues raised.

### **Proof of consultation**

Results of the consultations are summarised in the Consultation table below (Table 9).







**Figure 4:** Placement of site notices



# Laerskool hou pretloop

**■ This eetha**

Op die laaste skooldag oor voor die vakansie, het Laerskool Delmas 'n pretloop gehou.  
Dit was baie duidelik dat die laerskoolleiers dit ten volle geniet het om buite te kon deelneem aan dié pretloop. Ten spyte van die sonnetjie wat warm gebak het, het hulle hui gaste uit geniet.  
Die pretloopbaan was regoor die skoolgronde uitgelê en leiers het volgens hulle grade in groepeps deelgeneem.  
Ook die graad R-leiers van Heidi Kleuterskool wat vanaf vorigjaar hulle intrek by Laerskool Delmas het, het deelgeneem. Vir

dié kleinged was dit hulle "eerste stietiek" in die grootkool en die gees was aansteklik.  
Wenners was daar nie regtig nie, want sommige het van hierdie pretloop 'n resies gemaak terwyl ander "geloop het vir die pret". Onderwyseerses het flink saam gedraf en gestap en so doende 'n ogie oor die geestdriftige deelnemers gehou.  
Na afloop van die pretloop is elke deelnemer met 'n roomys beloon waarna die "roomys-rooi-bekkie" kon huis toe gaan vir 'n wettende kof April skoolvakansie.



Mbakelike Nyathi.



Stefan van Schalkwyk en Henry Thomas.



Buhle gaan vir goud.



Juffrou Salome sterftseer Nina van Rensburg se hande, want COVID-19 protokol moet steeds nagekom word.



Michael Pieterse en Hendrik Snyman.



Onderwysers het ook gedee in die pret, Elsie Schutt, Marize Strauss en Charlene Mhlangu.



Ewan Greuning en Ruan Jordaan.



Mitchell Swenepoel, Dihan van Bergen en Sheldon van Zyl.

## Lawwe Loffie beroepsdag was baie lekker

**■ This eetha**

"Wanneer ek eendag groot is wil ek 'n brandweerman, verpleegster, 'n juffrou of dalk 'n boer word". Elkeen ontvou vir seker daardie kleintyd gedagtes en drome baie goed.  
Laerskool Ellof het dit goed geënk om op Donderdag, 22 Maart 'n lekker leswe, maar tog leersema beroepsdag by die skool te hou. "Leiers is die geleentheid gegun om hul 'groot-mens-droom-beroe' uit te beeld en kreatiwiteit het hoogty gevier," het mnr Louise van Niekerk, skoolhoof van Laerskool Ellof, gesê.  
Leiers het die geleentheid gehad om vir 'n rukkie in die skone te staan van daardie beroep wat hulle hoop om eendag te beoefen. ER24, kompleet met paramediese personeel en ambulans het ook kom kuier en die leiers broodvoorig oor hul

wensaktiwiteite ingelig. ER24 het die leiers verder bederf met geskenkpakkies, penne en waterbottels. Die sireses en ambulansleiers was 'n groot hoogtepunt. Die Loffie-leiers het ook rolbal gespeel as spanbou-aktiwiteit en dit was sommer groot pret. "Beslis nie 'n sport net vir ouerssema, bemarkers of pensioenisse nie," het mnr Van Niekerk gesê.  
"Baie dankie aan die leiersvroue en ouers wat die geleentheid moontlik gemaak het," het mnr Van Niekerk bygevoeg.  
"Hou aan droom en mag elke leier van Laerskool Ellof se drome eendag waar word. Daar te volhard is alles moontlik. By Loffies is elke beroep belangrik, elke droom goud wert en bly elke leier 'n wenner."

## Heidi kondig prysweners aan

Soos met so baie instansies trek skole en kleuterskole ook swaar na die jaar van imperking.  
Heidi Kleuterskool het egter besluit om 'n plan te maak om daardie broodnodige fondse in te samel en die inisiatief geneem deur kaartjies te verkoop waarmee lekker pryse gewen kon word. Met die hulp van middelike skenkers vanaf plaaslike besighede was daar sommer lekker groot pryse op die spel. Die eerste prys het onder andere R3 500 beloop en het 'n R2 500 vierpak ingestuit, geskenk deur die eienaars van 'n slaguis in die oeweging. Op Donderdag, 22 April om 09:00 is die kaartjies getrek en die weners aangekondig.

"Heidi bedank elkeen wat pryse geboeg het en kaartjies gekoop het. Met die geldjies kan ons die nodige opgradering by die Kleuterskool, sowel as ons fasiliteite vir die graad R's by Laerskool Delmas doen. Ons waarder elkeen van ons plaaslike besighede wat 'n bydrae gemaak het om 'n suksesvolle pretloop te maak," het Riette Whittier, hoof van Heidi Kleuterskool gesê. Vir die kleuter wat die meeste kaartjies verkoop het, was daar ook 'n beloning.  
Klein Geoffrey Marais het weggestap met 'n yalike pak lekkernye en 'n bederfpakkie vanaf 'n plaaslike familie restaurant in Delmas.



Geoffrey Marais het die meeste kaartjies verkoop en 'n lekker beloning ontvang.

**JOINT NOTICE OF PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATIONS**

**Notice of Action:** Notice of the Prospecting Right Application Process as per the Mineral and Petroleum Resources Development Act (No.28 of 2002) for the proposed Coal prospecting project. Prospecting (as well as other mining) activities takes a period of 5 years before mining can commence. Coal is prospecting in a relatively simple sequence of activities which includes the preparation, drilling and rehabilitation of the drilled holes.

**Location / Affected Properties:** Portion 11, 17, 25 and 25-37 of the farm Maabandide 24018, Under the Magisterial District of Delmas, M gemenskapse Provinsie.

**INVITATION TO COMMENT**

Notice is given in terms of the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) and SA regulations 2017 (as amended), that **no fee is to be paid to supply PPRs** applied for a Prospecting Right to prospect for Coal resource. **DATE FOR: MP 30/5/21/2/ 12/14/16/18/**

As part of the SA process, more especially the public participation process for this proposed project, EMP is required to register and widely consult say stakeholders or citizens to meet **MR Khramohlo Makado** by no later than Sunday the **30th of May 2021**, using the contact details provided below. The public also needs to review and comment on draft SAHRA EMP. The draft SAHRA report will be available for review for a 30-day calendar period from the **11th of May 2021 to the 30th of June 2021**. This report will be available upon request from **Steno Consulting Pty (LTD)**, meeting any other detailed EMP's contact's below. Please note that mass meetings will be held adhering to Covid-19 regulations stipulated in the National Disaster Management Act.

For more information, to register as an interested or affected party, please contact:

**ENVIRONMENTAL ASSESSMENT PRACTITIONER'S APPLICANTS' DETAILS:**

<b>EMP's Contact Details:</b> Steno Consulting (Pty) Ltd Office No. 16, First Floor (South Block) Convent Hill Corporate Office Complex Convent Hill, Midrand, 1035. EMP Contact: Mr Khramohlo Makado Cell: +27 71 337 2975 Tel: +27 10 682 0940 Fax: +27 10 5144 102 Email: steno@stenoconsulting.co.za	<b>Applicant's Contact Details:</b> <b>Makado Industrial supply (Pty) Ltd</b> 174 Reyna Ridge Midrand 1035 Tel No: 011 656 2634 Fax No: 011 656 1347 Cell No: 071 228 5443 E-mail: makado@steno.com
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**LAWYERS/LEGAL/ES&O/LIAISON/COMPLIANCE NOTICE**  
The proposed application directly affects parties known as: **K MNO B MW PTY LTD** (portion 11), **SHABACHELI MINING PTY LTD** (portion 17&27), **SAMOLARE PTY LTD** (portion 25) and **TRANGHET LTD** (portion 27-37). Please kindly contact us immediately if you are affected by the activities to be undertaken. Your assistance will be highly appreciated.

**Adverteer nou in Streeknuus**

Kontak ons advertensie verteenwoordiger  
**Judith Taute**



083 442 0327 | judith@streeknuus.co.za

Figure 5: Proof of Newspaper Advertisement (red polygon)

## Farm List

Date Requested 2021/04/21 15:51  
 Deeds Office MPUMALANGA  
 Registration Division IR  
 Farm Name -  
 Farm Number 248  
 Remaining Extent NOT SELECTED

PORTION LIST				
Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
1	EXXARO COAL PTY LTD	T12402/2013	2013/11/11	2 700 000
2	EXXARO COAL PTY LTD	T9659/2002	2002/01/30	858 777 368
3	EXXARO COAL PTY LTD	T8514/2011	2011/08/30	9 598 541
4	PHILLEM BELEGINGS PTY LTD	T150558/1999	1999/12/21	550 000
5	EXXARO COAL PTY LTD	T5424/2008	2008/04/07	5 100 000
6	EXXARO COAL PTY LTD	T5424/2008	2008/04/07	5 100 000
7	EERSTEKLAS BOERDERY PTY LTD	T13210/2008	2008/08/22	4 420 000
8	PHILLEM BELEGINGS PTY LTD	T13247/2012	2012/12/05	20 000 000
9	C J WILLIAMS & SEUNS BOERDERY PTY LTD	T85138/1995	1995/08/14	270 000
10	EXXARO COAL PTY LTD	T10616/2010	2010/08/18	4 400 000
11	K NYATHI INV PTY LTD	T3121/2020	2020/06/01	2 200 000
12	EXXARO COAL PTY LTD	T9659/2002	2002/01/30	858 777 368
13	EXXARO COAL PTY LTD	T9659/2002	2002/01/30	858 777 368
14	DREYER CHRISTINA MARIA	T151801/2002	2002/11/29	0
15	STUART COAL PTY LTD	T5552/2019	2019/05/30	6 000 000
16	EXXARO COAL PTY LTD	T8514/2011	2011/08/30	9 598 541
17	THABA CHUEU MINING PTY LTD	T80943/1997	1997/06/26	34 500
18	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
19	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
20	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
24	EERSTEKLAS BOERDERY PTY LTD	T13210/2008	2008/08/22	4 420 000
25	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
26	SAMQUARZ PTY LTD	T80944/1997	1997/06/26	4 086 788
27	TRANSNET LTD	T31531/1994	1994/05/06	0
28	TRANSNET LTD	T31533/1994	1994/05/06	0
30	TRANSNET LTD	T22243/1994	1994/03/29	0
31	TRANSNET LTD	T51835/1994	1994/07/12	0
32	TRANSNET LTD	T29810/1994	1994/04/29	0
33	TRANSNET LTD	T88064/1994	1994/11/03	0
34	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
35	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
36	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
37	THABA CHUEU MINING PTY LTD	T80944/1997	1997/06/26	4 086 788
38	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
39	SAMQUARZ PTY LTD	T129679/1999	1999/11/03	0
40	SAMQUARZ PTY LTD	T129679/1999	1999/11/03	0

Figure 6: Windeed Search Results

## 6.2.2 IDENTIFICATION OF I&AP'S

### LIST OF AUTHORITIES IDENTIFIED AND NOTIFIED

**Table 8:** Identified Key Stakeholders

<b>Names of I &amp; AP's</b>	<b>Organization</b>	<b>Position</b>
<b>Thaba Chueu Mining Pty Ltd</b>	Portion 17 and 37 of Moabsvelden 248 IR	Respective Landowners
<b>K Nyathi Inv Pty Ltd</b>	Portion 11 of Moabsvelden 248 IR	Respective Landowners
<b>Samquarz Pty Ltd</b>	Portion 26 and 39 of Moabsvelden 248 IR	Respective Landowners
<b>Wayleaves</b>	Eskom	Official
<b>Tshilidzi Ramavhona</b>	Department of Environmental Affairs	Official
<b>Rhulani Chavalala</b>	Department of Agriculture, Forestry & Fisheries	Official
<b>Ria Barkhizen</b>	SANRAL	Official
<b>Phine</b>	SAHRA	Official
<b>Secretary Mayor</b>  <b>Diane Bath</b>	Victor Khanye Local Municipality	Officials
<b>M Moloto</b>  <b>Seani Nevondo</b>	Department of Water and Sanitation (DWS)	Officials
<b>Yuza Chabalala</b>	Transnet Freight Rail	Officials
<b>Phumla Nkosi</b> <b>Elly Thulari</b>	MTPA	Officials
<b>Mr Petruscha Lindoor</b>	Department of Rural Development and Land Reform (DRDLR)	Official









### 6.3 SUMMARY OF ISSUES RAISED BY I&AP'S


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


**Table 9:** Summary of issues raised by I&AP's

Interested and Affected Parties		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
<u>AFFECTED PARTIES</u>					
Landowner/s	X				
K Nyathi Inv Pty Ltd (portion 11) 'sthewukele77@gmail.com'	X	(28/04/2021) via a call	A call was made to Mr Nyathi, informing him about the project and consulting his as a landowner. He indicated that he does not have any objections to the project	An email of consultation was sent to Mr Nyathi to inform him as the landowners on the 03 <sup>rd</sup> of May 2021.  The BAR & EMPr is still underway and shall be shared as soon as its ready.	Refer to Appendix 3 for the full consultation
Thaba Chueu Mining Mahlangu Abner Mojalefa (portion 17 and 37) 'abnermojalefa@gmail.com'	X			An email of consultation was sent to inform them about the Proposed Prospecting Right project	Refer to Appendix 3 for the full consultation
SAMQUARZ PTY LTD (Portion 26) 'nellis.bester@invensil.co.za'				An email of consultation was sent to inform them about the Proposed Prospecting Right project	Refer to Appendix 3 for the full consultation
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councillor	X				

<p>Victor Khanye Local Municipality</p>  <p>Email: 'sizwes@victorkhanyelm.gov.za' Email: 'Thabitha.matladi@victorkhanyelm.gov.za'</p>	X			An email of consultation was sent to inform them about the Proposed Prospecting Right project	Refer to Appendix 4 for the full consultation
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA)					
 <p>'Wayleavesmou@eskom.co.za'</p>	X	(12/05/2021) Via email	Tshilisanani Tshifularo from the Eskom Department sent Eskom Distribution Consent Letter to be signed by the client before the commencement of the project should it yield positive results	Signed consent letter was sent back	Refer to Appendix 4 for the full consultation
<p>SANRAL</p> 	X				

Dept. of Agriculture, Land, Reform and Rural Development 'MaryM@Dalrdd.gov.za'  	X	(26/05/2021)	Detailed soil studies must be included on the EMPR Weed and invader plants management plan must be included on the EMPR Sensitive areas such as wetlands must not be disturbed Land capability class and grazing capability index must be included on the EMPR	Soil study will be attached in the appendix, a 100m buffer will be implemented away from the water courses.	Refer to Appendix 4 for the full consultation
Communities					
The proposed Project area is situated just about 9 km south east of the Botleng Settlements					
Dept. Land Affairs					
Mr Peruscha Lindoor <a href="mailto:Peruscha.Lindoor@grdlr.gov.za">Peruscha.Lindoor@grdlr.gov.za</a>  	X			An email of consultation was sent as an inquiry for any land claims on the proposed project area as well as to inform them about the Proposed Prospecting Right project.	Refer to Appendix 4 for the full consultation
Traditional Leaders					
There are no traditional leaders preceding the area					
Dept. Environmental Affairs					
Tshilidzi Ramavhona <a href="mailto:TRamavhona@environment.gov.za">TRamavhona@environment.gov.za</a>  	X			An email of consultation was sent To inform them about the Proposed Prospecting Right project	Refer to Appendix 4 for the full consultation

Department of Labour 'noncebos@labour.gov.za'	X			An email of consultation was sent to inform them about the Proposed Prospecting Right project	
Other Competent Authorities affected					
Department of water & sanitation  Seani Nevondo Tel: 012 318 0516 E-mail: <a href="mailto:NevondoS@dws.gov.za">NevondoS@dws.gov.za</a>  B208 Quaternary Catchment Email: <a href="mailto:molotom@dws.gov.za">molotom@dws.gov.za</a>  	X			An email of consultation was to inform them about the Proposed Prospecting Right project	Refer to Appendix for the full consultation

<p>Transnet Freight Rail</p> <p>Email: 'yuza.Chabalala@transnet.net'</p> 	X			<p>An email of consultation was sent to inform them about the Proposed Prospecting Right project</p>	<p>Refer to Appendix 4 for the full consultation</p>
<p>SAHRA</p>	X				<p>Refer to Appendix 4 for the full consultation</p>
<p><u>OTHER AFFECTED PARTIES</u></p>					
<p><u>INTERESTED PARTIES</u></p>					

## 6.4 THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

### 6.4.1 SOCIO-ECONOMIC CONTEXT

The Mandlezile industrial supply (Pty) Ltd's Prospecting project is located within the Magisterial District of Delmas under the jurisdiction of the Victor Khanye Local Municipality, situated in the Nkangala District Municipality. The Municipality covers a geographical area of about 1.567 square kilometres of the western Highveld of Mpumalanga Province, and it comprises of Delmas, Botleng, Sundra, Eloff and Delpar towns and settlements. The overall population of the Victor Khanye Local Municipality as per stats 2016 is 84 151 inclusive of all the nine wards.

**Table 10:** Population of Victor Khanye Local Municipality per Ward

WARD	POPULATION	SQUARE KILOMETER	PEOPLE PER SQUARE KM
Ward 1	6231	1.4	4469.6
Ward 2	5745	5	1140.1
Ward 3	12 765	45.4	281.1
Ward 4	6023	0.728	8275.2
Ward 5	7469	1.6	4650.1
Ward 6	6525	3.7	1741.9
Ward 7	10 230	824.7	12.4
Ward 8	7172	62.5	114.8
Ward 9	13 292	644.9	20.6

### **Economy**

Delmas is the primary node in the Victor Khanye municipal area. The municipality is predominantly rural in nature, with minor economic concentrations in the small towns of Botleng and Eloff. The Municipal's economy is relatively diverse, with the largest output sector and a proportionate contribution being agriculture followed by community services and trade. During recent years, the total output of the agriculture sector experienced significant levels of growth while the mining and minerals sector declined.

The municipality's rural area(s) is primarily composed of extensive commercial agriculture, particularly maize, with an estimated annual production of 230 000 to 250 000 metric tons. Since the Delmas region is a "high potential" agricultural area, it is important to protect the agricultural land from urban sprawl and mining, etc. Mining activities are concentrated mainly on coal and silica in the Delmas area and successively, 3 million metric tons of coal are mined annually in the municipality.

## **Employment**

The unemployment rate based on the 2016 definition rest on 21.6 which is relatively high considering the economic activity in the area. However, the employment situation is expected to improve over the medium term with additional jobs in the mining sector.

As per stats SA 2016, the income level per household is considered a better indicator of poverty and reflects that at least 42 % can be classified as indigent as they earn less than R1,600 per month. There is a negative trend developing as more households have reportedly dropped below the poverty line. The municipality ranks the 9<sup>th</sup> with respect to the overall province statistics standing.

## **Education**

It was denoted that about 25% of the population above 15 years of age has had no schooling or did not complete primary school. Consequently, of that number 5528 are basically illiterate and thus future meaningful employment prospects are virtually impossible. The low-income levels per household in the society correlates with the low level of education in the region.

Leading industries in employment comprises of trade (18%), Agriculture (18.2%), community services contributing (14.3%) and mining which has grown as an employer and now contributing 12.7%

The high rate of unemployment and illiteracy within the municipal area is an indicator of the need for economic development to create opportunities for employment. No local employment opportunities are expected during the prospecting phase, however, confirmation of a viable mineral resource and possible establishment of a mine may help address the challenges faced by the communities affected by the project going forth.

## **7 TYPE OF ENVIRONMENT AFFECTED BY THE PROPOSED ACTIVITY**

### **7.1 GEOLOGY**

The Proposed Prospecting Right falls Karoo Supergroup and Malmani Dolomite Subgroup, of the Chuniespoort Group in the Transvaal Supergroup.

#### **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 (SACS, 1980; Johnson et al., 1996; Fig. 3). These are capped by some 1.4 km of basaltic lavas of the Drakensberg Group (Veevers et al., 1994; Johnson et al., 1996), the extrusion of which is related to the break-up of Gondwana (Cox, 1992).

The basement to the Karoo Supergroup fills in both the MKB and in the northern basins is heterogeneous (Hancox, 1998; Bordy et al., 2004a; 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. The main crustal scale blocks for the MKB are shown below in Figure 3. Most of the coalfields discussed occur on the Wits block of the Kaapvaal Craton. Since the coalfields of South

Africa occur over such a vast area, the nature of the basement lithologies differ considerably from coalfield to coalfield and as such are described below individually for each coalfield. An understanding of the basement lithologies is important for interpreting the nature of pre-conditioning prior to the onset of Dwyka glaciation, which provides an important control on the sedimentary fill of the lower parts of the Karoo Supergroup. Karoo aged depositional environments broadly range from glacial (Dwyka Group), to shallow marine and coastal plain (Ecca Group), to nonmarine fluvial and aeolian (Beaufort and Stormberg groups). Whilst this paper focusses on the Ecca and Beaufort groups and Molteno Formation sedimentary successions

### **Dwyka Group**

Dwyka Group 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 lithologies. A number of coal seams have previously been assigned to the uppermost part of the Dwyka Group in the past (Stavrakis, 1986) and certainly Dwyka aged coals occur in other sub-Saharan Karoo basins, but this aspect of the stratigraphic succession needs to be restudied in detail, with positive seam positions and correlations based on absolute age data, and accurate correlative stratigraphic and palynological studies.

### **Ecca Group**

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

### **Malmani Subgroup**

The Malmani Subgroup forms part of the Late Archaean to Early Proterozoic (~2,6 to 2,0 billion years old [Ga]) Transvaal Supergroup (Eriksson et al., 2006), that overlies the Archaean (~3,5 to 3,0 Ga) basement greenstones and granitoids of the Kaapvaal Craton outcropping to the north and east of study area. It forms a major component of the Chuniespoort Group, and is underlain by the ~20 to 50 m thick clean quartzites (quartzitic sandstones), lower conglomerates and thin subordinate shales of the Black Reef Formation (Walraven, 1989); and overlain by the banded ironstones of the Penge Formation, mudstones, dolomites and limestones of the Duitschland Formation, and ultimately the 6 to 7 km thick shales (with interlayered sandstone and volcanic units) of the Pretoria Group (with a regional unconformity existing between the Chuniespoort Group) (Eriksson et al., 2006).



The Malmani Subgroup in the Transvaal Basin is up to 2000 m thick and is subdivided into five formations, based on chert content, stromatolite morphology, intercalated shales and erosion surfaces (Button, 1973b; Eriksson and Truswell, 1974). It starts above with the Black Reef Formation with the Oaktree Formation. This formation comprises the carbonaceous shales, stromatolitic dolomites and locally developed quartzites. The following Monte Cristo Formation begins with an erosive breccia and continues with stromatolitic and oolitic platformal dolomites. The Lyttelton Formation follows the Monte Cristo with 100-200 m of shales, quartzites and stromatolitic dolomites and is, in turn, overlain by the cherty dolomites of the Eccles Formation up to 600m thick, and which includes a series of erosion breccias. An erosion breccia separates the Eccles from the overlying Frisco Formation, comprising mainly stromatolitic dolomites.

Dolomite is magnesium-rich calcium carbonate rock containing chert-rich layers (silica oxide rich) and chert-poor layers, limestone and sedimentary layers with rock fragments and fine-grained shale. The groundwater occurrence in dolomites is found mostly in karst features (DWA, 2009) formed as a result of the dissolution of carbonate by carbonic acid ( $H_2CO_3$ ) in groundwater leaving behind residual products such as silica, iron and manganese oxides and hydroxides. In general, the subsurface karst features include fissures and caverns as well as buried sinkholes. Fracturing/brecciation and hydrothermal alteration adjacent to dolerite intrusions act as preferential zones (DWA, 2009) for weathering resulting in them being conduits for groundwater flow. Although the dissolution process would be more or less similar, the different composition of the dolomite affects the characteristics and behaviour as aquifers. These subsurface dissolution systems form excellent secondary porosity features along which strong flowing groundwater can occur, often forming high-yielding karst aquifer systems.

Dolomite as a mineral has very few uses. However, dolostone has an enormous number of uses because it occurs in deposits that are large enough to mine. The most popular dolostone use is in the construction industry. It is crushed and sized for use as road base material, concrete and asphalt aggregate, railroad ballast, rip-rap, or filling. It is also calcinated in cement manufacturing and cut into specific size blocks known as "dimension stone."

### **Vryheid Formation**

The proposed project area falls within the Vryheid Formation of the Ecca Group in the Karoo Supergroup. The majority of the economically extracted coal in South Africa occurs in rocks of the Vryheid Formation, which ranges in thickness in the MKB from less than 70.0 m to over 500.0 m. It is thickest to the south of the towns of Newcastle and Vryheid, where maximum subsidence took place (Du Toit, 1918; Cadle, 1975; Whateley, 1980a; Stavakis, 1989; Cadle et al., 1982) and where the basin was the deepest. According to SACS (1980) the basic concept, distinguishing features and boundaries of the Vryheid Formation are those of the "Middle Ecca" as described by Du Toit (1954) and others. Prior to 1973 studies of the Vryheid Formation were largely stratigraphic. This formation is early to mid-Permian (Palaeozoic) in age and consists of sandstone, shaly sandstone, grit, conglomerate, coal and shale. Coal seams are present in the Vryheid Formation within the sandstone and shale layers.

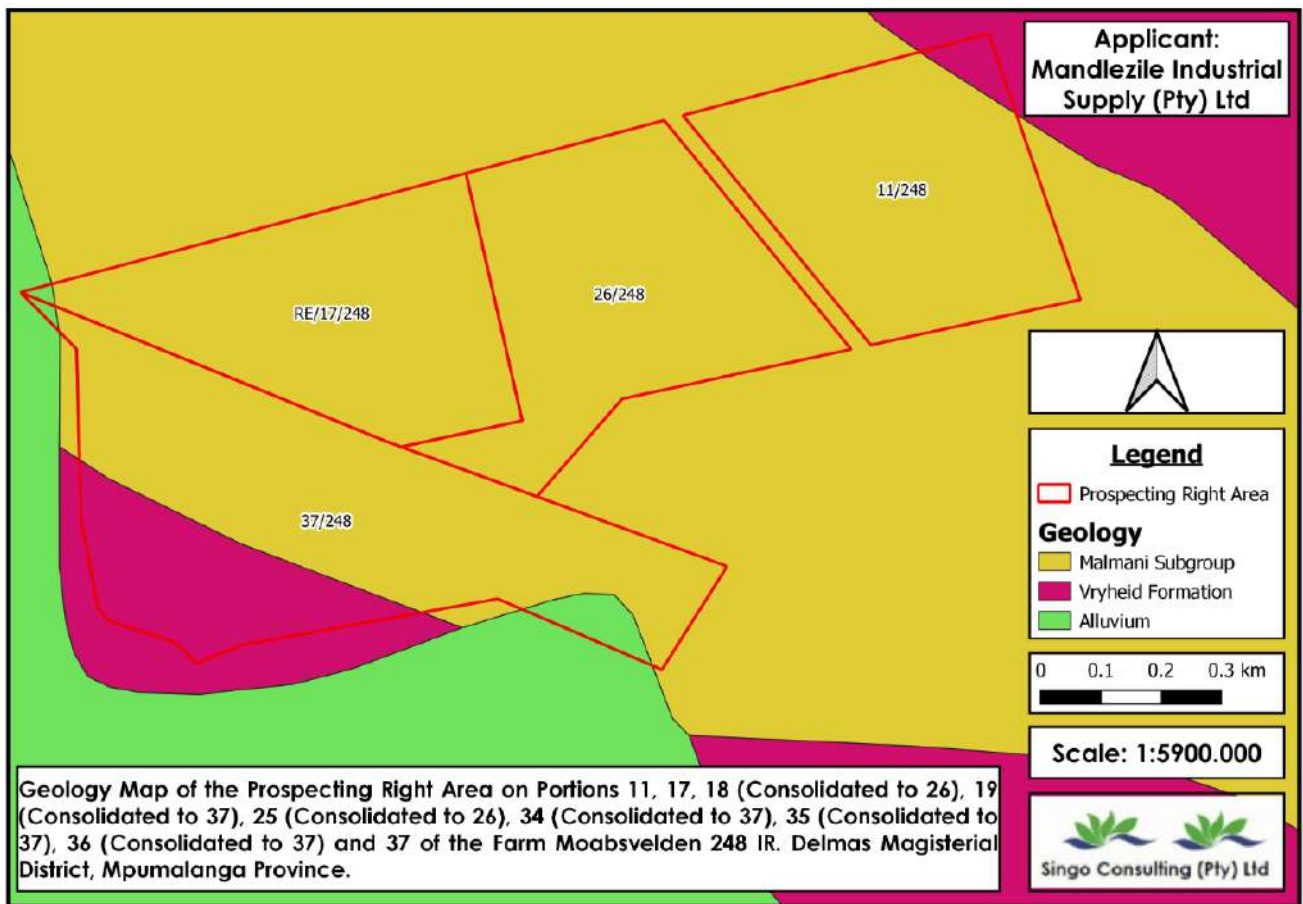
The stratigraphy of the Vryheid Formation is now described as a succession of five coarsening upward sequences which display a remarkable lateral continuity across the entire distal region of the Karoo Basin (Cadle et al., 1982). In a complete succession each of the five coarsening-upward sequences starts with fine-grained marine facies, which grade upwards into coarser delta front and delta plain-fluvial facies. Several coal seams occur in the Vryheid Formation and these are associated predominantly with the coarser-grained fluvial facies at the top of each sequence. These coal seams can be traced laterally across the entire area of occurrence of the Vryheid Formation in the MKB; however, some disagreement exists as to the exact correlation in the various coalfields. Regional differences allow for the considerable diversity of coal types (organic content), mineral matter composition, and rank (maturity) that is found within the coalfields of South Africa (Falcon, 1986b).

## **7.2 SOILS**

The area consists of structureless soils confirmed on a soil map by GIS specialist. This type of soil is characterized by sand, red soil that is less productive due to the dominance of sand soils that has severe limitations which minimize crop selection or require special management practices; soils and diverse areas have limitations that restrict commercial plant production and restrict their use to recreational, wildlife or esthetic purposes. Some of the depicted structureless soils are, red apedal soil, yellow brown apedal soils as well as plinthic soils.

### **Red apedal soils**

These soils have a structure that is weaker than moderate blocky or prismatic in the moist state. These soils are non-calcareous in any part of the horizon which occurs within 1500mm of the soil surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. It does not have alluvial or aeolian stratifications. The B horizons that have more or less uniform colours, falling within the range defined as red and that in the moist state, lack well-formed peds other than porous micro-aggregates, qualify as red apedal. The concept of these macroscopically weakly structured or structureless materials embraces that kind of weathering that takes place in a well-drained oxidizing environment to produce coatings of iron oxides on individual soil particles (hence the diagnostic red colours) and clay minerals dominated by non-swelling 1:1 type.



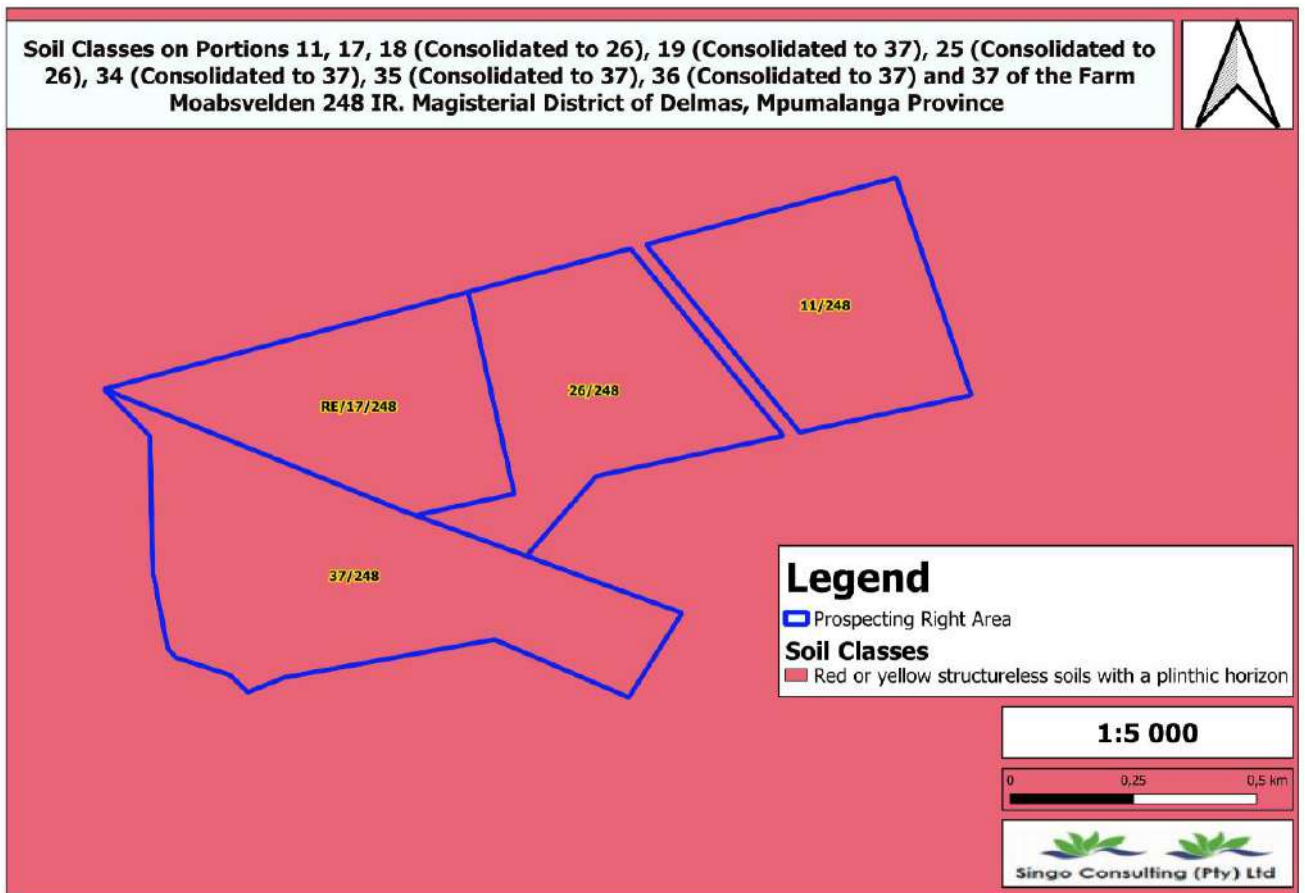
**Figure 7:** Geological map of the Application area

### **Yellow apedal soil**

This horizon does not have grey colours in the dry state as defined for the E horizon. Although colour must be substantially uniform, some variability is permitted, for example mottles or concretions which are insufficient to qualify the horizon as a diagnostic plinthic B, faunal reworking may also result in acceptable colour variegations. It is non-calcareous within any part of the horizon which occurs within 1500mm of the surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. Does not have alluvial or aeolian stratifications., directly underlies a diagnostic topsoil horizon or an E horizon. Yellow brown apedal B horizons occur over approximately the same climatic spread as their red counterparts and so are also very widely distributed throughout the country. They may be found on all types of parent material.

### **Plinthic horizon**

There are two types of Plinthic Horizons namely the **hard Plinthic B Horizon** as well as the **Soft Plinthic B-horizon**. The hard Plinthic consists of an indurated zone of accumulation of iron and manganese oxides which cannot be cut with a spade, even when wet. Occurs beneath an Orthic A horizon, an E horizon or a yellow brown apedal B whilst the Soft Plinthic has in the non-concretionary parts of the horizon, a loose, friable, or slightly firm consistence. This horizon is non-indurated and can be cut with a spade when wet, even though individual mottles may have hardened irreversibly to form concretions.



**Figure 8:** soil classes map of the area under study



**Figure 9:** Soil observed on site

### 7.3 TOPOGRAPHY & HYDROLOGY

The proposed prospecting area is characterized by gentle slopes surfaces and the map shows no signs of mountains or hills near or within the project area. This can be observed on the topography map attached below. The flow of water during rainy seasons flows from the area of high elevation to the area of low elevation as it is indicated by contour lines. The Farm Moabsvelden 248 IR is lying between the 1550 and 1575 m interval above sea level. The gentleness of the slope makes the drill site easily accessible.

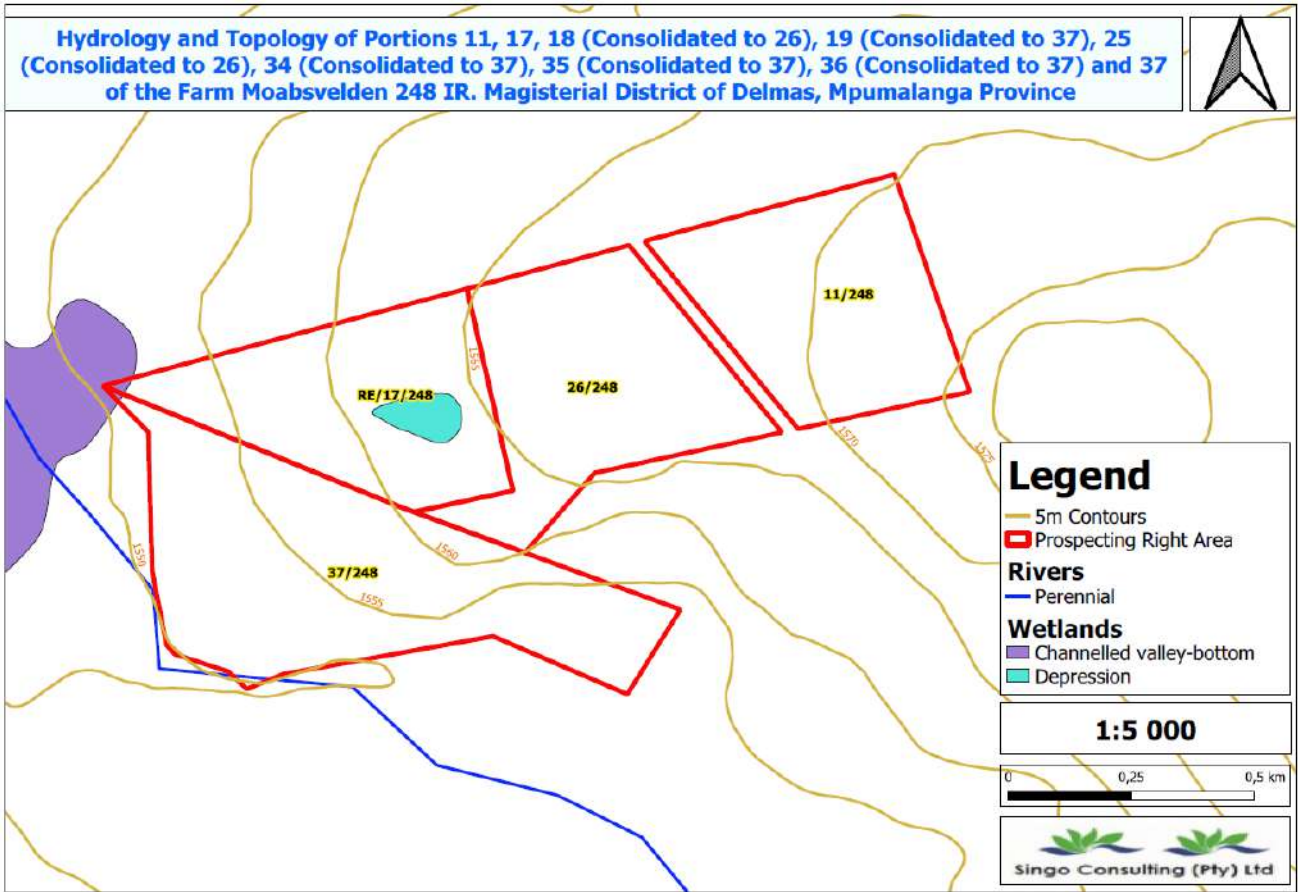
The hydrology surrounding the proposed area is of vital importance as well. In this context hydrology is all the surface waters appearing within and nearby (2km radius) of the proposed project area, where a potential to be impacted upon by the project exist. The hydrology map, illustrates that the following water bodies exists within and around the project area:

- ❖ Channelled valley-bottom wetland
- ❖ Depression
- ❖ Perennial river

These are important natural water resources that should not be disturbed by anthropogenic activities. For this project where prospecting right poses a risk on them, there should be measures and guidelines put in place that will protect the water resources in this area to ensure optimal conservation of water. The prospecting right should take place during dry seasons where the water percentages are exceptionally low. Drilling activity should not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site.

Extreme caution should be taken during prospecting, owing to the perennial river, non-perennial river and numerous wetlands existing within and around the project area. No washing of any mechanical equipment's or vehicles will be allowed near the water resources, and all the perennial and non-perennial rivers will be buffered as no go area preferably a 100m buffer will apply.



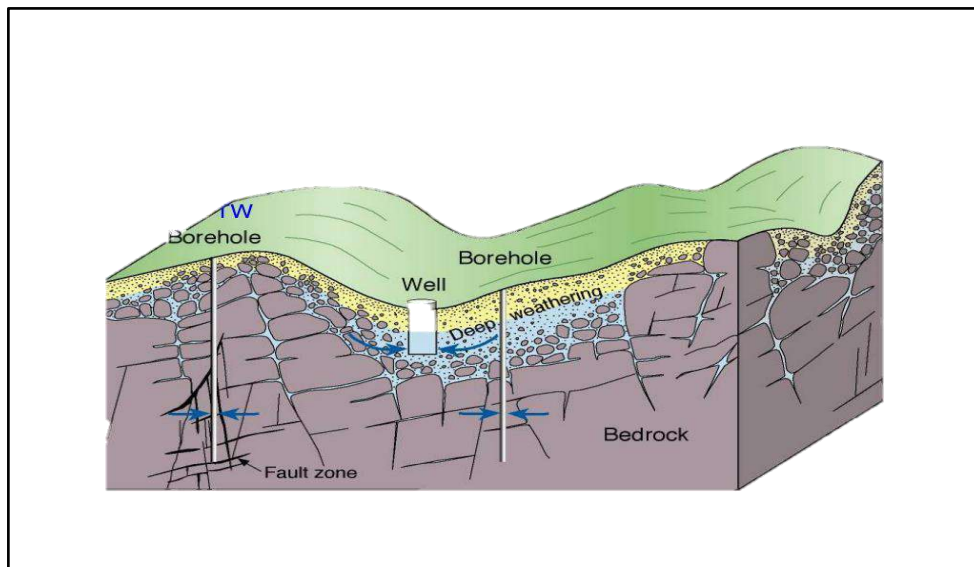


**Figure 10:** Hydrology & Topology map of the proposed project area



**Figure 11:** Observed on-site water course

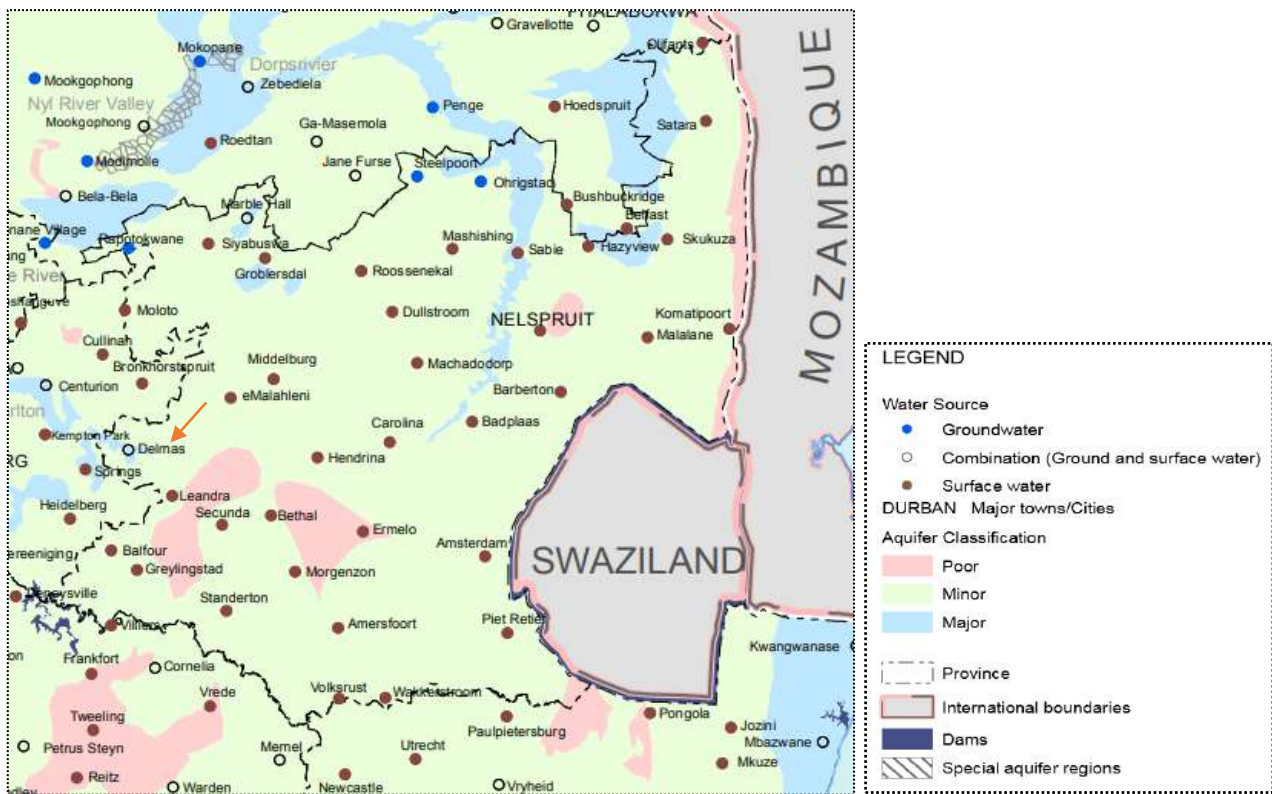
Below is a cross sectional figure of a typical fractured aquifer. Water exists in fractures in Karoo weathered aquifers. Two important characterizations that exist in the study area is the upper weathered aquifer system and the lower fractured aquifer system. If the purpose of drilling boreholes is for the supply of water, drillers will usually be directed to drill targeting the fault zones, however in the present study where the boreholes to be drilled are for Aggregate and Silica sand exploration, fault zones and contacts should be avoided at all costs, to minimize the impact to groundwater. The boreholes drilled must be cased to avoid clogging and contamination.



**Figure 12:** Cross section of a fractured aquifer.

### **Aquifer classification**

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area pointed by the red arrow comprises of minor aquifers and the dominant water source is a surface water. Table 1 interprets the meaning of the aquifer classification and when an area is said to have a minor aquifer it means that the aquifer is Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.



**Figure 13:** Aquifer classification of South Africa

**Table 11:** Aquifer characterisation

Aquifer	Description
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 utilized for water supply and that will not contaminate other aquifers.
Special aquifer region	An aquifer designated as such by the Minister of Water



## Conclusions and recommendations

- ❖ It can be concluded that the prospecting activity will cause minimal impact on the water resources. The prospecting right activity should take place during dry seasons where the water percentages in the surrounding streams and wetlands are extremely low.
- ❖ Drilling activity will not be conducted near water resources.
- ❖ And all the wetlands, perennial and non-perennial rivers will be buffered, and a 500m buffer will apply.
- ❖ The topography of the project area is situated in a gentle topographical range of 1550 - 1575 mamsl.
- ❖ Extreme caution will be taken during prospecting, washing of any mechanical equipment or vehicles will be allowed near the water resources.
- ❖ Water samples will be taken from the selected exploration boreholes by using approved sampling techniques and adhering to recognized sampling procedures. Samples should be analysed for both organic as well as inorganic pollutants, as mining activity often led to hydrocarbon spills in the form of diesel and oil.
- ❖ The core logs of exploration boreholes will be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- ❖ After prospecting, rehabilitation of the disturbed area will take place.
- ❖ The numerical model will be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty.
- ❖ Absorbent Spill kits will be made available near the drill rigs during drilling activities.

Refer to the conducted specialist studies (Hydrogeological, hydrology, Surface Water) attached as *Appendix 7*

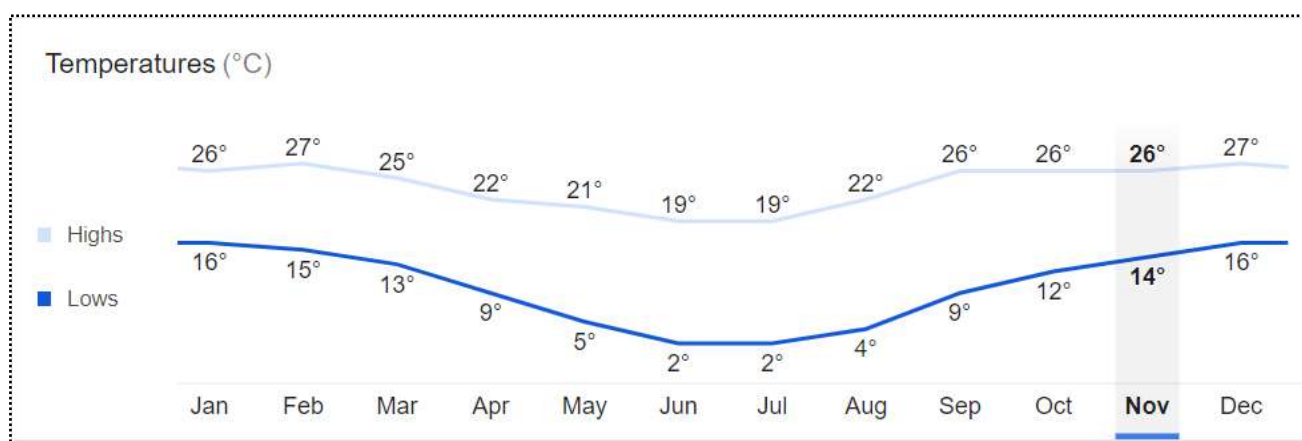
## 7.4 HYDROGEOLOGY

The fractured mode of groundwater occurrence describes aquifers associated with fractures, fissures and joints. The rocks of the Wilge River Formation (Waterberg Group) of which they are sandstone and quartzite, display the characteristics of the fractured regime. The dominant yield category for the Wilge River Formation is 0.1 - 0.5 l/s. Groundwater quality for all the aquifers of the fractured regime is good as the EC values of between 26 and 60 mS/m indicate.

The fractured aquifer system (~ 15 to 40m) present in the fresh rock below the weathered zone are well cemented, and do not allow significant water. All groundwater movement therefore occurs along secondary structures such as fracture, crack and joints in the rock. These structures are best developed in sandstones and quartzite; hence the better water-yielding properties of the latter rock type. In terms of water quality, the fractured aquifer always contains higher salt loads, and the higher salt concentrations are attributed to longer contact time between the water and rock (IGS2008).

## 7.5 CLIMATE

Delmas is 1527m above sea level. The city has a Oceanic Subtropical highland climate, of which Köppen and Geiger classified this climate as Cwb. The subtropical highland variety of the oceanic climate exists in elevated portions of the world within either the tropics or subtropics, though it is typically found in mountainous locations in some tropical countries. In Delmas, the average annual temperature is 25 °C. The rainfall in Delmas is about 353 mm per year. The temperatures are highest on average in January, at around 27 °C. June and July has the lowest average temperature of the year which is 2 °C. Delmas tends to feature mild summers and noticeably cooler winters, plus, in some instances, some snowfall. The average annual precipitation ranges between 601-800 mm as per Figure 16 below produced by our GIS specialist. January is the warmest month recording the most precipitation of about 124.5 mm. The coolest month on average is June recording the least precipitation 3.4 mm on average.



**Figure 14:** Average temperatures in Delmas

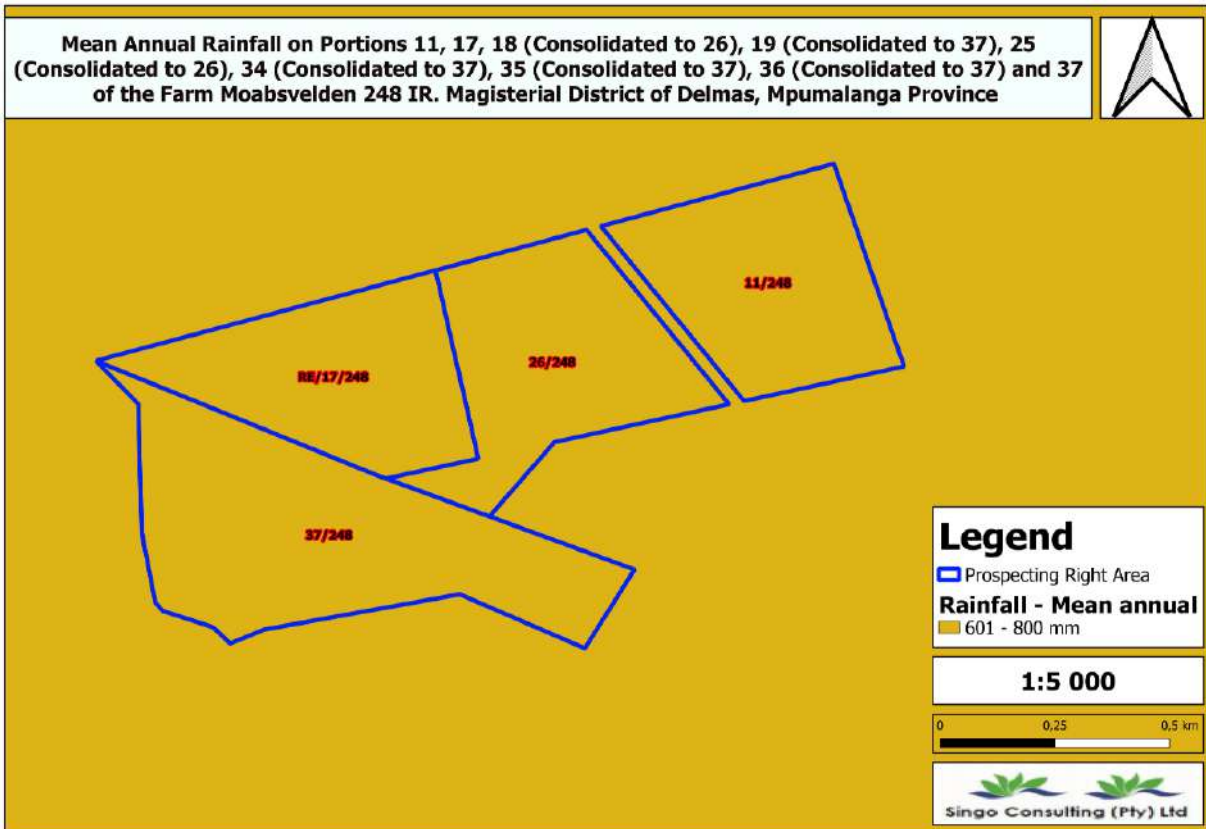


Figure 15: Mean annual rainfall in the proposed area

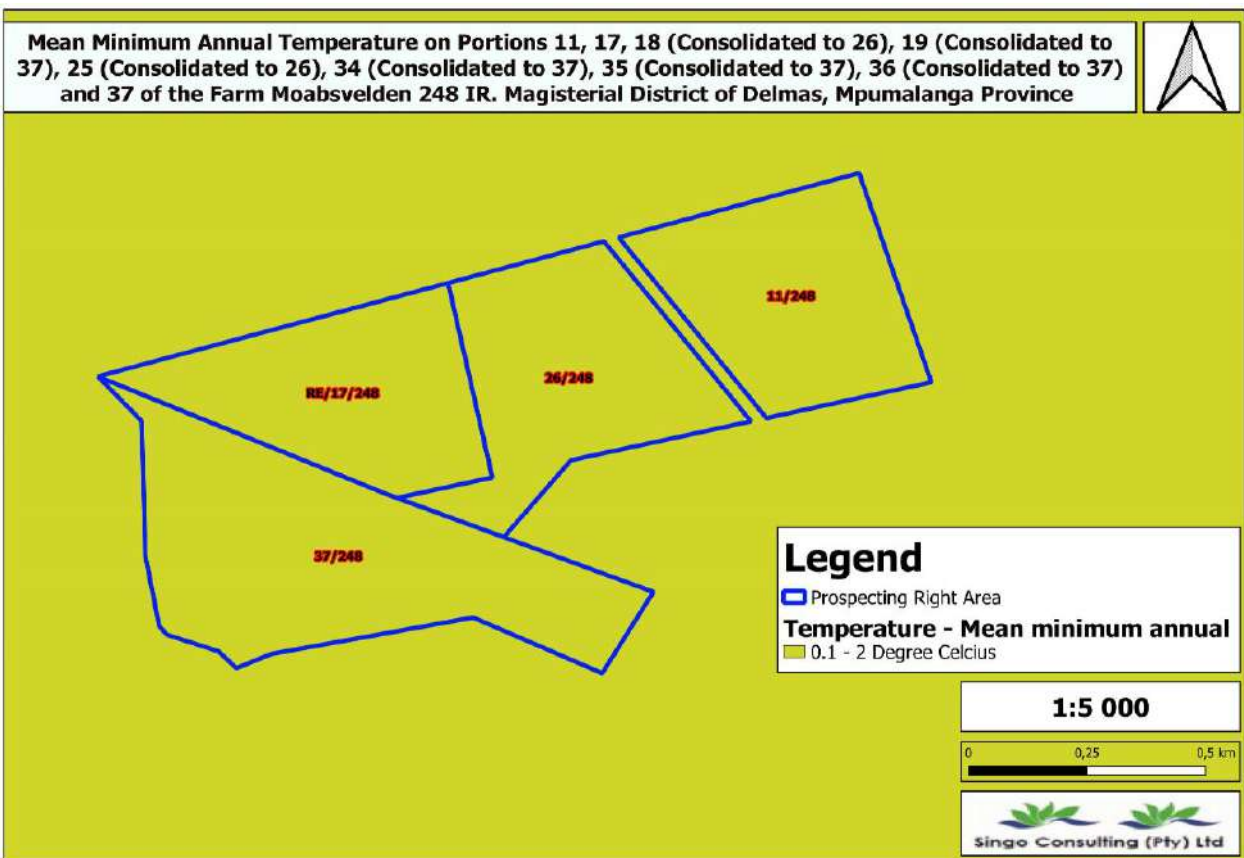


Figure 16: Mean minimum annual temperatures on the proposed area.

## 7.6 FLORA & FAUNA

Portion 11, 17-23 and 25-37 of the Farm Moabsvelden 248 IR forms part of the moist cool Highveld grassland of the lower altitudes Highveld grasslands. Van Rooyen & Bredenkamp (1996) describes the moist Cool Highveld grassland vegetation sort in its pristine condition as dominated by entire stands of Red grass *Themeda triandra*. As per the screening report, Figure 17 below, the area features 691 sensitive species. The features on this footprint include the *Brachycorythis conica* subsp. *Transvaalensis* as well as the *Pachycarpus suaveolens*. The *Brachycorythis conica* subsp. *Transvaalensis* species is exceedingly rare and currently only known for one viable population in western Gauteng. Years ago, this orchid was apparently more common around Gauteng where it was recorded from isolated records ranging from Pretoria to Heidelberg with a few outlying records in Mpumalanga and Limpopo Provinces. It occurs in rocky, and wooded grassland mostly on ridges. The species is listed as Critically Endangered on the Red List of South African Plants. As for the *Pachycarpus suaveolens*, threatened by agriculture, mining, and aliens especially in the Mpumalanga Province. Its population has been decreasing and there are no known records from formally conserved areas. Only 0.9 ha of the application area will be disturbed, and concurrent rehabilitation will be carried out at each drill site so that the land is returned to its natural state prior to the prospecting activities.

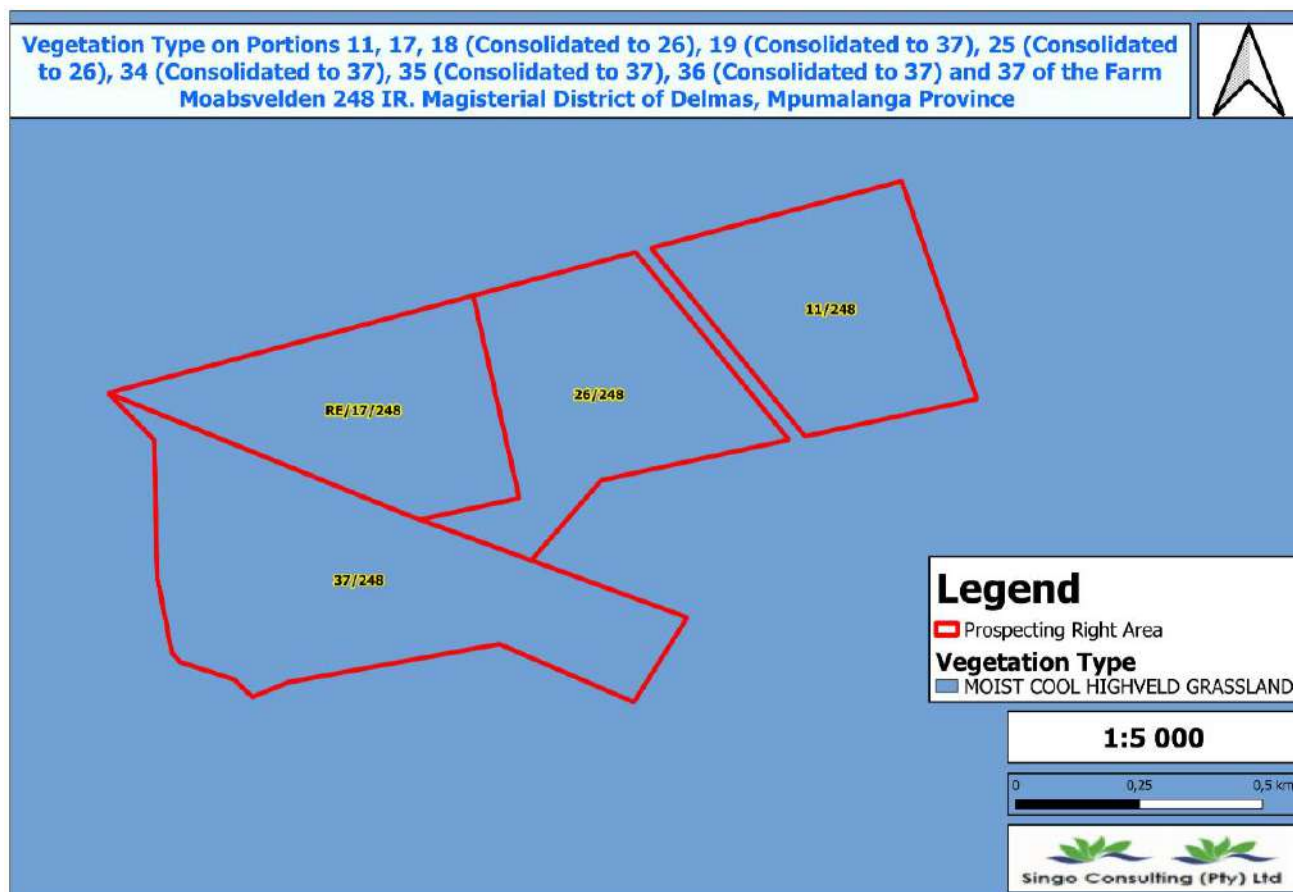
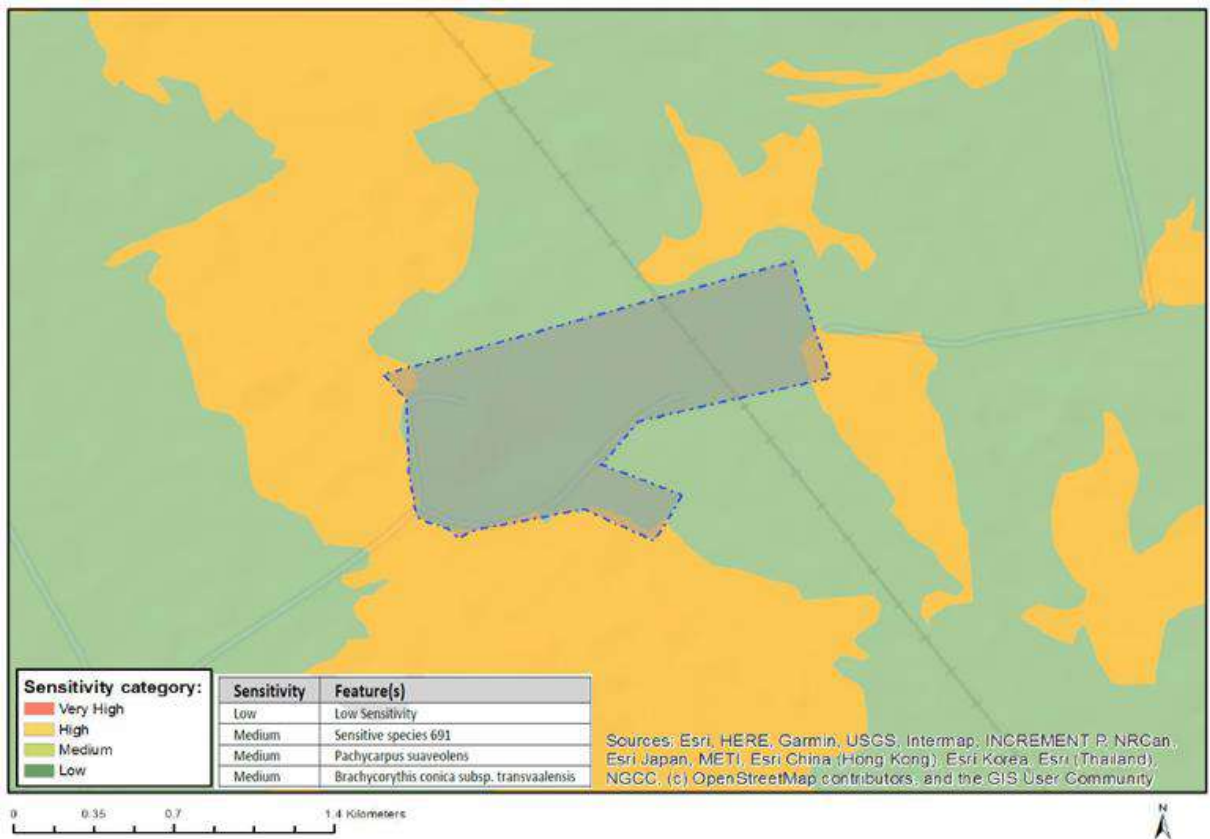


Figure 17: Vegetation type map of the project area.

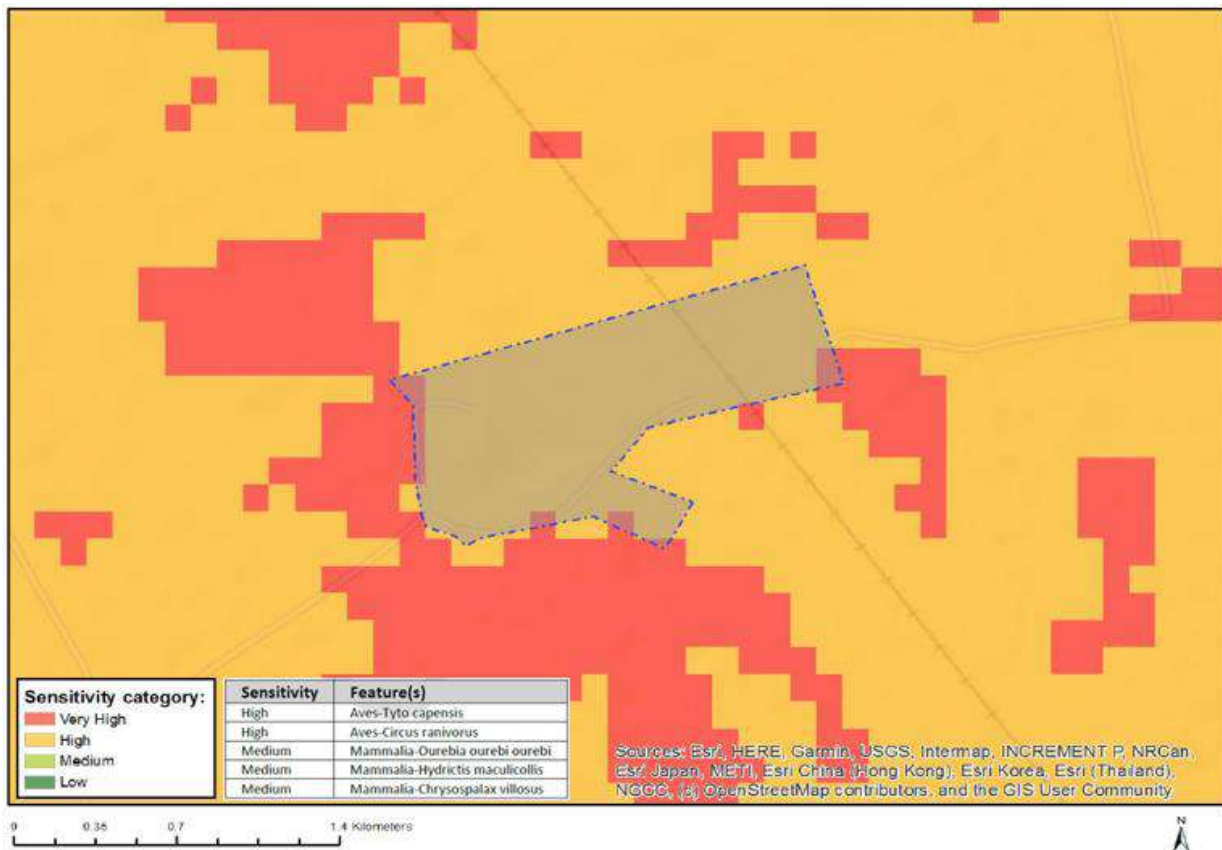




**Figure 18:** Vegetation observed on site.



**Figure 19:** Relative Plant Species Theme Sensitivity (source: screening report)



**Figure 20:** Relative Animal Species Theme Sensitivity (source: screening report).

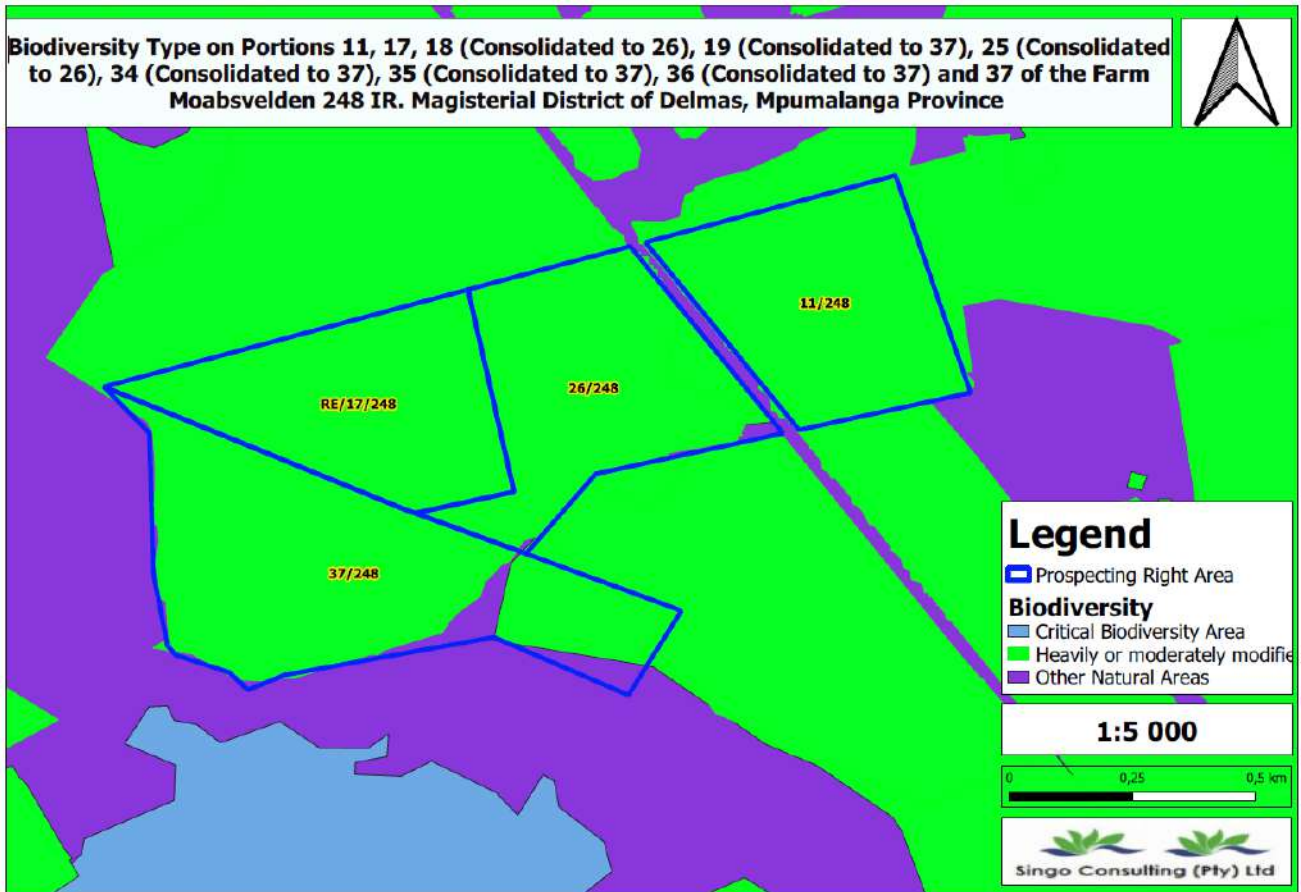
No fauna was observed at the point of the site visit, however, drilling sites will be fenced off to eliminate any possibilities of harming fauna that we might have overlooked.

## 7.7 CRITICAL BIODIVERSITY

According to the Critical Biodiversity map (*Figure 20*) produced by our GIS specialists, the affected property is located in areas classified as:

- ❖ Heavily modified; these areas have been changed by other activities, in this case, agricultural activities
- ❖ Other natural areas; areas that have not been identified as priority in the current systematic Biodiversity plan but retain most of their natural character.

The drilling activities will most likely to take place on the land that is heavily modified so that the limited extent of land that remains natural is conserved and/or the impact remains minimal.

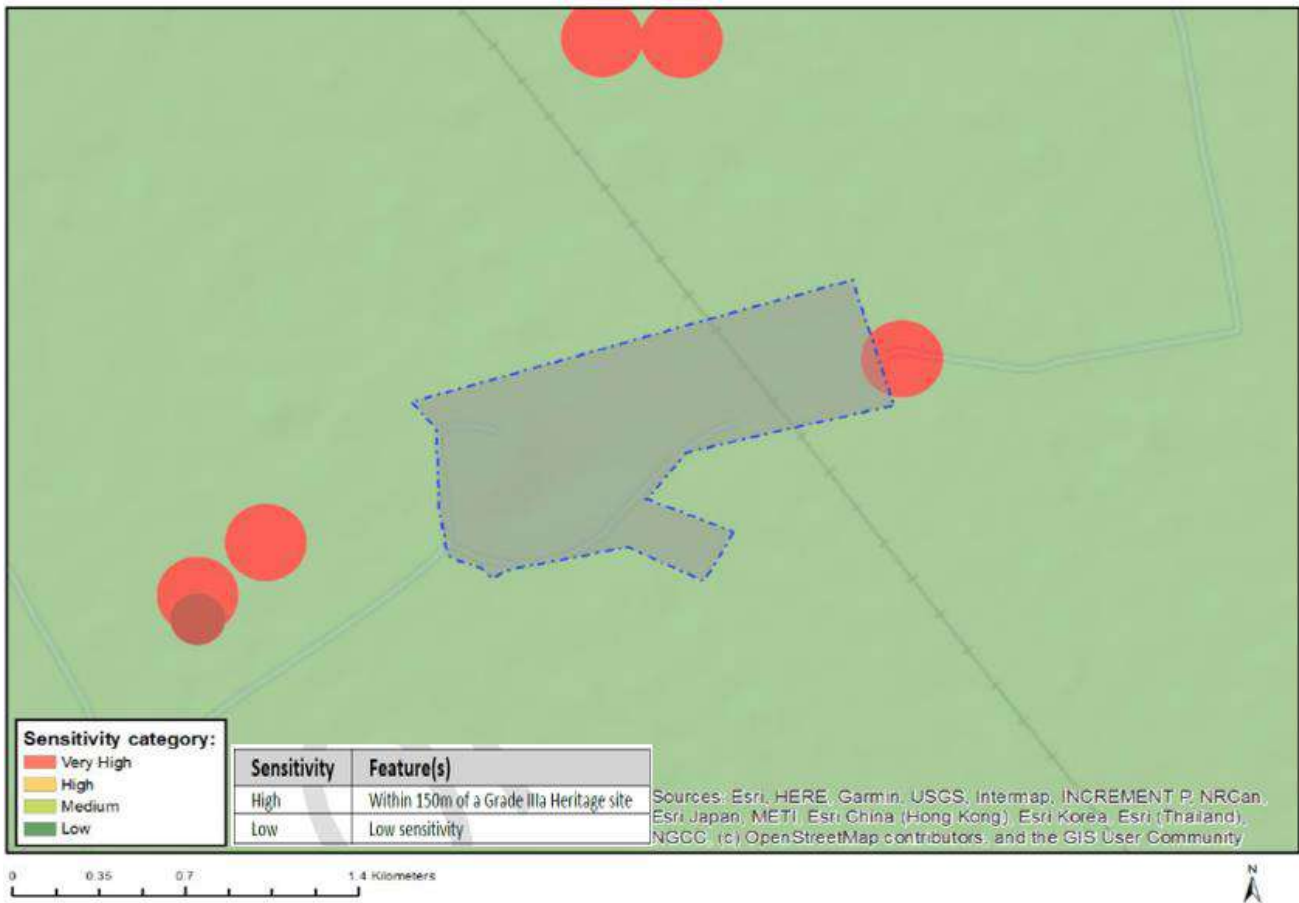


**Figure 21:** Map showing the Critical Biodiversity Areas of the Proposed Project Area

## 7.8 CULTURAL AND HERITAGE

Figure 20 below obtained from the screening tool, reflects that only a small part of portion 11 has high heritage sensitivity. Should it happen that for some reason, any heritage resources of significance be exposed during the rather operational phase of the project, the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities should be stopped, and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the required mitigation measures.



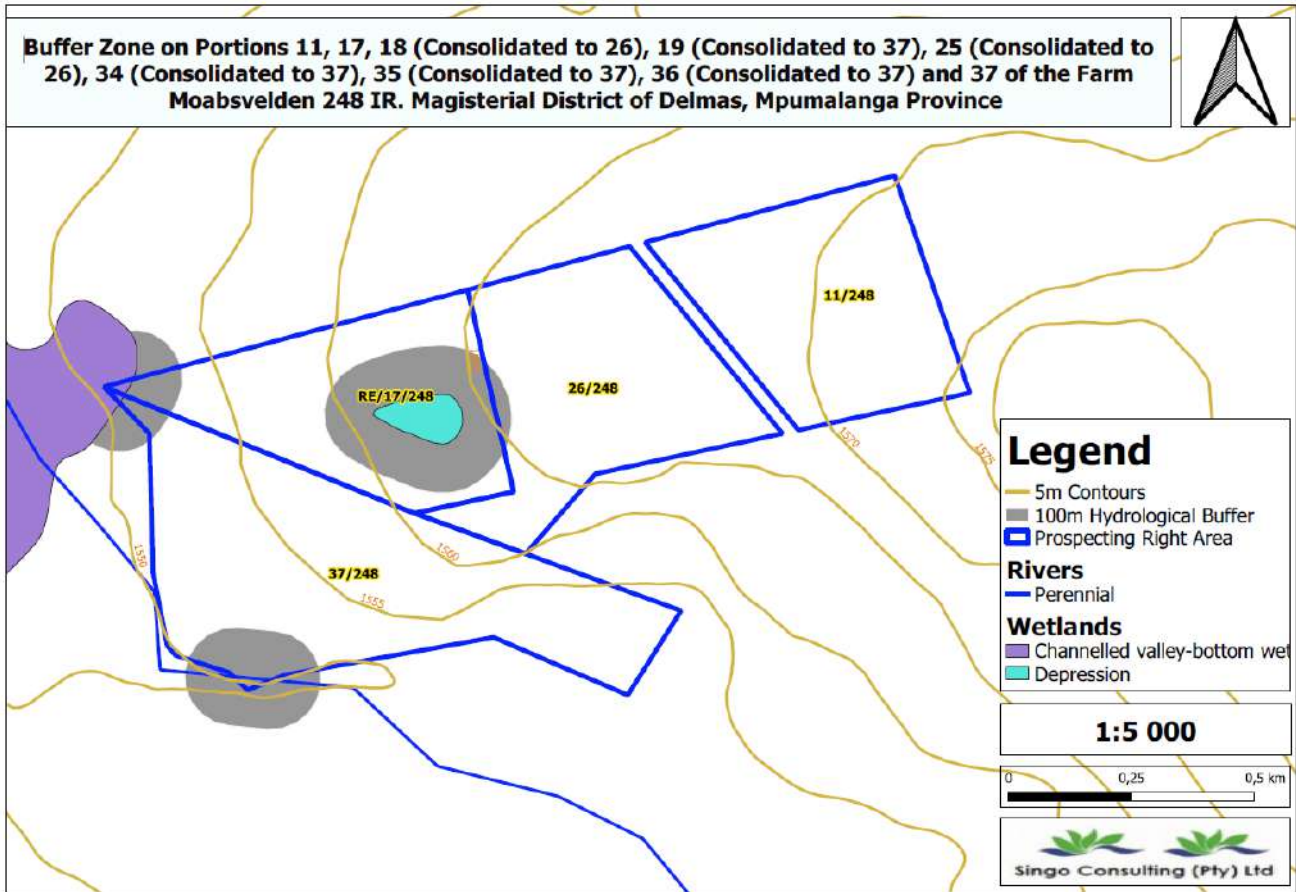


**Figure 22:** Map of Relative Archaeological And Cultural Heritage Theme Sensitivity.

## 7.9 ENVIRONMENTAL ASPECTS WHICH MAY REQUIRE PROTECTION AND/OR REMEDIATION

There are several identified wetlands identified within and around the project area. Buffers of 500m away from any waterbodies will be adopted to act as remediation against the activities proposed upon the property in question. The 500m buffer is considered adequate from a water quality perspective in providing functional filtering capacity to the river and the identified wetlands. There are no protected areas situated within 5 km of the application area.

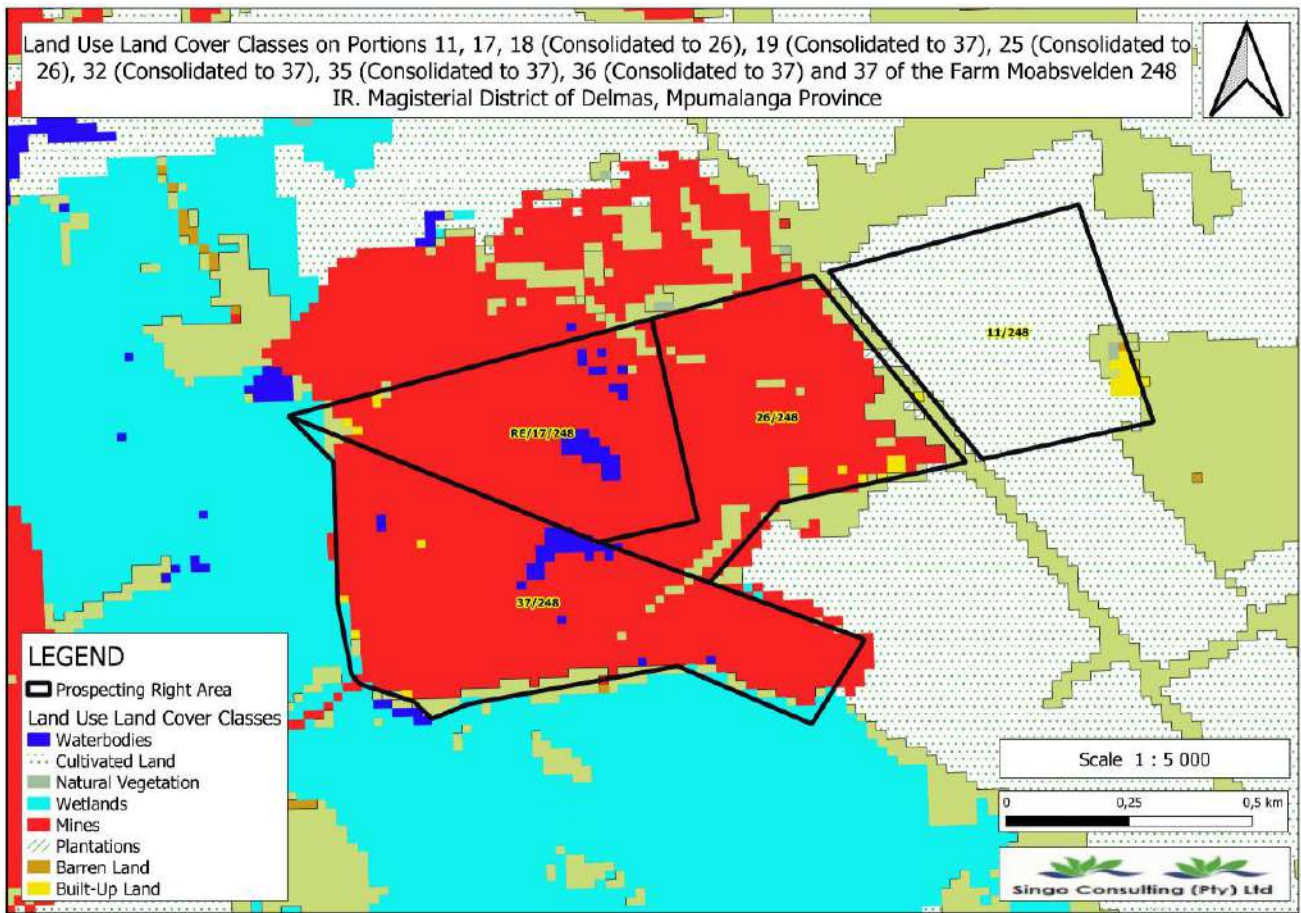




**Figure 23:** Buffer map for the proposed application area.

### 7.10 DESCRIPTION OF CURRENT LAND USES

The existing current land uses therein is depicted in a form of a map and pictures in Figure 22 and 23 below. Portions 17, 26 and 37 are covered by a mine called Thabacheu Silica Mining, whereas portion 11 of the farm is used for agricultural purposes. Noticeable below on *Figure 18* are the leaves, stalks, and cobs of maize (corn) which were left on the field after harvest. Adjacent to the project area, there is Exxaro Leeuwpan operating Coal Mine. The railway line and power lines passes through the proposed project.



**Figure 24:** Land Use and Land Cover Classes of the Project Area.



**Table 12:** Thaba Chueu Mining within the proposed area.



### 7.11 DESCRIPTION OF SPECIFIC ENVIRONMENTAL FEATURES AND INFRASTRUCTURE ON SITE

The proposed site is accessible via the unnamed road from the R555. The noticeable environment features and infrastructure on site, includes but not limited to the following:

- ❖ power lines traversing the Application area
- ❖ Unpaved road which gives easy access within the project area
- ❖ Railway line passing through the project area



**Figure 25:** Environmental Features and infrastructure on site

## **7.12 IMPACTS AND RISKS IDENTIFIED**

Probability, length, size, and magnitude will be used to calculate the significance of an impact. The pre- and post-mitigation scores should provide an indication of how mitigable an effect can be.

Non-invasive prospecting techniques will be applied. Activities requiring access to the site include Geological Field Mapping Semi-Regional Geophysical Survey, Comprehensive Field and Aerial Geophysical Survey, Prospecting Boreholes, Boreholes to confirm mineralization continuity & possible deposit size and Resource Definition Drilling.

The potential impacts that may result from the proposed prospecting activities are as follows:

- ❖ Job Creation;
- ❖ Introduction of invasive/alien plants
- ❖ Clearance/Disturbance of vegetation;
- ❖ Compacting of Soils;
- ❖ Generation and disposal of waste;
- ❖ Contamination of surface and ground water;
- ❖ Noise;
- ❖ Dust;
- ❖ Erosion due to vegetation clearance;
- ❖ Impact on surface and ground water features;
- ❖ Soil pollution through diesel and oil spillages from the drill rig and vehicles

## **7.13 THE IMPACT ASSESSMENT METHODOLOGY**

The criteria for impact significance assessment is driven by the specifications of the NEMA EIA Regulations (2010). The specific approach to the significance rating technique is to assess the environmental risk (ER) by considering the consequences (C) of each impact (including nature, extent, duration, magnitude, and reversibility) and relate this to the likelihood / likely (P) of impact occurrence.

The environmental risk is determined by this. Certain considerations, including cumulative effects, public concern, and potential for irreplaceable resource loss, are often used to determine a priority factor (PF) that is applied to the ER to determine the overall significance (S).

The significance (S) of an impact is determined by applying an Environmental Risk priority factor. The environmental risk depends on the consequence (C) of the particular impact and the probability of the impact that arises. Consequence (C) is determined by considering Nature (N), Extent (E), Duration (D), Magnitude (M), and Reversibility (R) applicable to the particular impact.

The consequence of the impact for the purpose of this methodology is represented by:

$$C = (E+D+M+R) \times N$$

4

In the determination of the consequence each individual aspect is represented by a rating scale as described in Table 13:

**Table 13:** Criteria for Determination of Impact Consequence

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

When the C is determined the ER is calculated by multiplying the C and the P according to the standard risk assessment relationship. Probability is rated / ranked according to Table 14.

**Table 14:** Probability Scoring

<b>Probability</b>	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

The result is a qualitative representation of relative ER associated with the impact. Therefore, ER is calculated as follows:

$$ER = C \times P$$

**Table 15:** Determination of Environmental Risk

**PROBABILITY/LIKELIHOOD**

<b>CONSEQUENCE</b>	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
			1	2	3	4

The environmental risk assessment outcome will result in a set of ratings, from 1 to 25. Then, these ER scores are grouped into respective classes as illustrated in Table 16.

**Table 16:** Significance Classes

Environmental Risk Score	
Value	Description
< 10	Low (i.e. where this impact is unlikely to be a significant environmental risk),
≥ 10; < 20	Medium (i.e. where the impact could have a significant environmental risk),
≥ 20	High (i.e. where the impact will have a significant environmental risk).

For each impact, the ER impact will be determined without relevant management and mitigation (pre-mitigation) measures, as well as post implementation of relevant management and mitigation

measures (post-mitigation). This allows for an estimate in the degree to which the impact can be managed/ mitigated.

In accordance with the requirements of Regulation 31 (2)(l) of the EIA Regulations (GMR 543), and in addition to the assessment criteria set out above, it is essential to assess each potential significant impact in terms of:

- Cumulative impacts; and
- The degree to which the impact may cause irreplaceable loss of resources.

Furthermore, it is critical that public opinion and sentiment regarding a future development and consequent potential impacts are taken into account in the decision-making process.

An impact priority factor (PF) will be applied to each impact ER (post-mitigation) in an attempt to ensure these factors are considered. This priority factor is not intended to distract from risk ratings, but rather to concentrate on the decision-making authority's attention on the concerns and impacts of higher priority / significance. The PF will be applied to the ER score based on the assumption that relevant suggested management/ mitigation impacts are implemented.

**Table 17:** Criteria for the Determination of Prioritisation

<b>Public response (PR)</b>	Low (1)	Issue not raised in public response.
	Medium (2)	Issue has received a meaningful and justifiable public response.
	High (3)	Issue has received an intense meaningful and justifiable public response.
<b>Cumulative Impact (CI)</b>	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
<b>Irreplaceable loss of resources (LR)</b>	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final priority of impact is expressed as a single consolidated priority, as the sum of each individual requirement listed in Table 15. Consequently, the priority for effect is set as follows:

$$\text{Priority} = \text{PR} + \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (refer to Table 16).

**Table 18:** Determination of Prioritisation factor

Priority	Ranking	Prioritisation Factor
3	Low	1
4	Medium	1.17
5	Medium	1.33
6	Medium	1.5
7	Medium	1.67
8	Medium	1.83
9	High	2

The PF is multiplied by the Post Mitigation scoring ER to determine the final impact significance. The ultimate goal of the PF is to be able to increase the environmental risk level after mitigation by a maximum ranking class, if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential, significant public response, and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

**Table 19:** Environmental Significance Rating

Environmental Significance Rating	
Value	Description
< -10	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ -10 < -20	Medium negative (i.e. where the impact could influence the decision to develop in the area).
≥ -20	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
0	No impact
< 10	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ 10 < 20	Medium positive (i.e. where the impact could influence the decision to develop in the area).
≥ 20	High positive (i.e. where the impact must have an influence on the decision process to develop in the area).



## 7.14 THE POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED

The proposed prospecting activities to be carried out include the use of non-invasive prospecting techniques. Therefore, the application area will be physically disrupted although this disruption will be restricted to the specified borehole sites and not to the entire application region. The actual invasive research covers just a few properties within the field of application itself and therefore the disruption due to invasive research should be limited. The access roads may over time and continuous use deteriorate and become damaged, however, the overall impact will be minimal as people on site will be limited to the applicant, contractor and geologists for the topographical and geophysical surveys.

To date, there has not been any objections by the respective landowners or neighbouring property owners. The proposed project's positive impacts are inclusive but not limited to the discovery of economically viable commodities within the Victor Khanye Local Municipality where mining is expected to boost their economy and contribute to a decrease in unemployment rates. There are no immediate nearby communities within the Prospecting Right area where the prospecting activities would have pose an impact on. The Delmas and Botleng communities are at least 10km away from the project area. The prospecting activities will see an increase in the use of access tracks by vehicles driving around the site. Provisions have been made for the rehabilitation of all areas disturbed during prospecting, including access tracks.

The BAR & EMPr will be made available to the Public at the local library and upon request via emails, we transfer or even dropbox links. All comments and correspondence with the I&AP's will be included in the final BAR & EMPr to be submitted for adjudication to the DMRE. Furthermore, it should be noted that the impact scores themselves will include the results of the public response and comment. Please refer to for the Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.

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

**Table 20:** Positive and negative impacts of the proposed project.

Impact	Pre-Mitigation Score
Job Creation	+5.25
Impact	Pre-Mitigation Score
Clearance/Disturbance of vegetation	-8.00
Compacting of Soils	-5.25
Drilling impact on identified lithic scatters	-8.00
Impact on the Farm	-2.00
Deterioration and damage to existing access roads and tracks	-8.00
Safety and security risks to landowners and lawful occupiers	-6.00
Interference with existing land uses	-7.00
Generation and disposal of waste	-6.00
Contamination of surface and ground water	-8.25
Introduction/invasion by alien species	-6.00

Noise	-4.50
Impact on fauna	-6.75
Pollution of Soils	-4.50
Dust	-4.50
Erosion due to vegetation clearance	-5.25
Impact on surface water features	-6.00
Impact on groundwater	-6.00
Loss of fossil heritage	-3.50

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

A description and assessment of the mitigation measures for each potential impact identified in the impact assessment process is provided by the following sections. The impact scores below are contemplative of the impacts post the implementation of mitigation measures. The final significance of each potential impact is also reflected below indicated by a second score. The second 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. The results of the public consultation will be used to update the impact scores upon completion of the public review period, where after the finalised report will be submitted to the DMRE for adjudication.

The mitigation types below 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 EMP mitigation measures (e.g. Spill prevention, Hydrocarbon Storage);
- ❖ 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 abluion of site laydown areas is to be located within 100m of a watercourse.
- ❖ Where shallow aquifers are encountered, a survey of the drinking water/ livestock watering boreholes should be undertaken (within 5km 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).

Impact	Post-Mitigation Score	Final Significance
Job Creation	+5.25	+5.25
Clearance of vegetation	-7.00	-7.00
Compacting of Soils	-3.75	-3.75
Drilling impact on identified lithic scatters	+3.75	+4.38
Impact on the Farm	+1.75	+1.75
Deterioration and damage to existing access roads and tracks	-5.00	-5.00
Safety and security risks to landowners and lawful occupiers	-4.00	-4.00
Interference with existing land uses	-5.00	-5.83
Generation and disposal of waste	-4.50	-4.50
Contamination of surface and ground water	-3.50	-4.08
Introduction/invasion by alien species	-3.00	-3.00
Noise	-2.50	-2.50
Impact on fauna	-6.00	-7.00
Pollution of Soils	-2.50	-2.50
Dust	-2.50	-2.50
Erosion due to vegetation clearance	-2.50	-2.50
Impact on surface water features	-3.50	-3.50
Impact on groundwater	-3.50	-3.50
Loss of fossil heritage	-3.25	-3.25

## **7.16 MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED**

Since exploration is temporary in nature, no permanent structures will be constructed. Negotiations and agreements will be made with the property owner to use any existing infrastructure like access roads. The location of the property is in an area where the geological formation that is known to host the desired mineralisation.

## **7.17 STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE**

The proposed project area as discussed above, has been selected due to the geology of the site and the anticipated favourable tectono-stratigraphic setting of the proposed prospecting area. No prospecting will occur within 500m of any watercourse. Besides the use for agricultural purposes, some parts of the application area remain unused. 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 owner to use any existing infrastructure like access roads, farm houses and other things like coreshed. Negative impacts identified above will be mitigated through implementation of the proposed mitigation measures as detailed in the EMPr. Where negative impacts cannot be avoided, rehabilitation will be undertaken.

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

## **8 FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY**

The impact assessment process may be summarised as follows:

- Landowner and stakeholder consultation Environmental assessment conducted for neighbouring projects
- A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:
  - -South African National Biodiversity Institute (SANBI) Biodiversity
  - -Geographic Database LUDS system
  - -Geographic Information System base maps
  - -Municipal Integrated Development Plan and Spatial Development Framework.
- Site visits conducted in 04 May 2021. The site visit was used to ground truth the desktop information.

- The rating of the identified impacts was undertaken in a quantitative manner as provided in this document. The ratings are undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and actual views.
- The identification of management measures is done based on the significance of the impacts and measures that have considered appropriate and successful, specifically as Best Practical and Economical Options.

## 9 IMPACT ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

**Table 21:** Impact Assessment Summary

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE In which impact is anticipated	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Geological Field Mapping and Environmental Screening	Interference with existing land uses	Site Access	Planning	-7.00	Site access control, heritage impact assessment; consultation with Landowners	-8.17
	Deterioration and damage to existing access roads and tracks	Transportation	Planning Operation	-8.00	Site access control; Demarcation of access tracks to be used	-5.00
Regional Ground Geophysical Surveys and Detailed Ground Geophysical Surveys	Interference with existing land uses	Site Access	Planning	-7.00	Site access control, heritage impact assessment; consultation with Landowners	-5.83
	Deterioration and damage to existing access roads and tracks	Transportation	Planning Operation	-8.00	Site access control; Demarcation of access tracks to be used	-5.00
Site Clearance	Clearance of vegetation	Prospecting areas	Construction	-8.00	Demarcation of sensitive areas in consultation with	-7.00
	Erosion due to vegetation clearance	Prospecting areas	Construction Operation	-2.50	Limit construction to approved demarcated areas. Rehabilitation using indigenous seed mix.	-2.50
Drilling	Impact on surface water features	Prospecting areas	Construction	-3.50	No prospecting drill site to be located within 100m of watercourse. Implementation of pollution prevention mitigation measures.	-3.50
	Drilling impact on identified lithic scatters	Prospecting areas	Construction Operation	-1.75	Notification of Provincial and National Heritage Authorities	+1.00

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE in which impact is anticipate	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
<b>Drilling</b>	Impact on Plaas 152	Construction	Construction Operation	-2.00	Notification of Provincial and National Heritage Authorities Temporary heritage signage during the construction (drilling) phase	+1.00
	Pollution of Soils	Prospecting areas	Construction Operation	-4.50	Adequate spill prevention and clean-up procedures of hazardous substance (e.g., fuel, grease, oil, brake fluid, hydraulic fluid) should be developed and implemented during the prospecting activities.  Should any major spills of hazardous materials take place; such should be reported in terms of the Section 30 of the NEMA.	-2.50
	Dust	Prospecting areas	Construction Operation	-4.50	Use of suitable dust suppression measures such as water spraying; All stockpiles of fine material must be covered; Limit clearance of vegetation.	-2.50
	Interference with existing land uses	Site Access	Planning Construction Operation	-7.00	Site access control, heritage impact assessment; consultation with Landowners	-5.83
<b>Rehabilitation</b>	Introduction/ invasion by alien species	Prospecting areas	Construction Operation Rehabilitation	-6.75	Use of indigenous species for rehabilitation, immediate rehabilitation of areas where construction is completed, rehabilitation monitoring.	-3.00
<b>Target Prospecting Boreholes &amp; Widely Spaces Boreholes</b>	Pollution of Soils	Drilling	Construction Operation	-4.50	Adequate spill prevention and clean-up procedures of hazardous substance (e.g., fuel, grease, oil, brake fluid, hydraulic fluid) should be developed and implemented during the prospecting activities. Should any major spills of hazardous materials take place; such should be reported in terms of the Section 30 of the NEMA.	-2.50



NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECT AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Compacting of Soils	Drilling	Construction Operation Decommissioning	-5.25	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.	-3.75
	Surface Water	Drilling	Construction Operation Decommissioning	-6.00	No invasive prospecting activities to be undertaken within 100m of a watercourse. water use licences is applied to the Department of Water and Sanitation.	-3.50
	Groundwater	Drilling	Construction Operation Decommissioning	-6.00	Where shallow aquifers are countered, and a pollution event occurs at a particular borehole, a survey of the drinking water/ livestock watering boreholes should be undertaken (within 5km of the prospecting borehole sites).  A detailed development of groundwater monitoring programme for these drinking water/ livestock watering boreholes and pre- and post- prospecting water quality samples should be taken.	-3.50
	Noise	Drilling	Construction Operation	-3.75	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.  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.	-2.50

NAME ACTIVITY	POTENTIAL IMPACTS	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Loss of fossil heritage	Drilling	Construction Operation	-3.25	Should by any chance fossils be uncovered during the construction phase, these must be handled in accordance with the requirements of the National Heritage.  Resources Act, 1999 (Act 25 of 1999) (NHRA); and ECO should alert SAHRA so that appropriate mitigation (e.g., recording, sampling, or collection) can be taken by a professional paleontologist.	-3.25
	Impact on faunal species	All prospecting activities	Construction Operation	-2.50	All incidents of harm to any natural vegetation (apart from the agreed upon areas) or animals must be reported to the ECO. Harvesting or poaching of animals and plants is forbidden.  No food of the construction workers should be left open and unattended as the likelihood of animals taking the food is high. This process disturbs ecological processes and is therefore strictly forbidden.	-2.50

NAME OF ACTIVITY	POTENTIAL IMPACTS	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Ablutions - Chemical Toilets	Contamination of surface waters	All prospecting activities	Construction Operation	-6.75	Provision of adequate chemical toilets on site, chemical ablutions to be emptied regularly.  Chemical ablutions must not be placed near watercourses.	-4.08
Temporary Fuel storage	Pollution of Soils	Drilling	Construction Operation	-4.50	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 to reduce surface and groundwater contamination. No earthen mud sumps are to be constructed and utilized.  Soils in drilling areas where disturbances will be encountered must be stripped and stockpiled outside affected areas for use after completion of the drilling program.  Topsoil must be adequately stripped to the correct depth and stored separately from subsoils;	-2.50
	Contamination of Surface and Ground water	Drilling	Construction Operation	-8.25	No prospecting boreholes may be located within 100m of a watercourse.  Cut of trench and berm must be constructed around the drill pad to prevent contaminated surface runoff from entering shallow aquifers and surrounding water resources, where required by the topography.  A liner should be placed over the drill pad and drip trays must be used in all areas where hydrocarbons are handled;	-4.08

NAME OF ACTIVITY	POTENTIAL IMPACTS	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Creation of access roads	Disturbance/ Clearance of vegetation	Transportation	Construction Operation	-8.00	No indiscriminate driving in natural areas. Use of existing access tracks wherever possible. Rehabilitation of any disturbed areas due to prospecting.	-7.00
Undertake rehabilitation as per the annual and final Rehabilitation plan	Introduction/invasion by alien species	Rehabilitation	Operation Rehabilitation	-6.75	<p>Only indigenous plant species must be used during revegetation of disturbed areas through a plant specialist.</p> <p>Restoration and Rehabilitation must be implemented as soon as the prospecting activities are completed</p> <p>Sites must be restored to the original condition with vegetation cover. Natural drainage patterns must be restored. All surface infrastructure must be removed</p> <p>Temporary access roads/tracks must be suitably rehabilitated.</p> <p>Sites must be monitored by the relevant ECO for adequate rehabilitation and until rehabilitation desired is achieved.</p>	-3.00
Monitoring of rehabilitation efforts	Erosion due to vegetation clearance	Closure and Rehabilitation	Rehabilitation Post-rehabilitation	-5.25	<p>The post operational monitoring and management period following decommissioning of prospecting activities must be implemented by a suitable qualified independent party for a minimum of one (1) year unless otherwise specified by the competent authority.</p> <p>Where required, provision must be made to monitor any unforeseen impact that may arise because of the proposed prospecting activities and incorporated into post closure monitoring and management.</p>	-2.50

## 10 SUMMARY OF SPECIALIST REPORTS

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Hydrogeological Study Soil Study		X X	

Please refer to Appendix 7 for complete specialist reports.

## 11 ENVIRONMENTAL IMPACT STATEMENT

### 11.1 SUMMARY OF KEY FINDINGS

Below is the outlined 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 no major threats to the waterbodies found within the project area since buffers of 100m will be put in place to ensure protection of these sensitive areas.
- The proposed prospecting area does not fall within any Critical Biodiversity Areas. To a large extent, the land is heavily modified; these areas have been changed by other activities, in this case, agricultural activities.
- Key findings for the socio-economic environment
- Consultation is still on-going with the relevant stakeholders, I&APs as well as the respective landowners in order to capture any comments or concerns regarding the proposed activities following a flawless and unbiased approach, to ensure that all parties are part of the decision making. The concerns raised will be included in the Final BAR & EMPr.

### 11.2 SUMMARY OF POSITIVE AND NEGATIVE IMPLICATIONS AND RISKS

#### Positive Impact associated with the proposed Prospecting:

- Discovery of an economically viable mineral resources
- Employment contributing to the economy
- Positive contribution to the South African Gross Domestic Product

## Negative Impact associated with the proposed Prospecting:

- Clearance/Disturbance of vegetation;
- Compacting of Soils;
- Drilling impact on identified lithic scatters;
- Generation and disposal of waste;
- Contamination of surface and ground water;
- Noise;
- Pollution of Soils;
- Dust;
- Erosion due to vegetation clearance;
- 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
- Introduction/invasion by alien species

Appropriate mechanisms for avoidance and mitigation of these negative impacts has been identified on the EMPr.

## 12 PROPOSED IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES

The objectives of the EMPr will be to provide sufficient information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impact. The above mentioned to be achieved can be through the measures below:

- Sufficient information and guidance must be provided to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.
- Ensure the Adherence to an open and transparent communication procedure with all stakeholders at all times and that information is communicated in a manner which is understandable and accessible to I&APs;
- Manage any social friction with landowners by regular engagement with the landowner and the entering into an access agreement with the landowner.
- Minimise negative impacts through consultation with stakeholders and through local knowledge;



- To have little to no impact to the current existing land uses as far as possible during prospecting;
- Limit the impact on the groundwater and surface water features through the implementation of the EMPr impact mitigation measures, and recommendations provided on specialist studies performed for this proposed prospecting application.
- To avoid damage to existing road infrastructure; and
- Boreholes and access tracks will be in areas that will result in minimal ground disturbance.

### **13 ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION**

- The Landowner should be engaged at least 1 month prior to any site activities being undertaken once drill sites are known; and a map detailing the drilling locations should be provided to the landowner as well as the DMRE prior to commencement of prospecting activities.
- No activities shall take place within 500m of the waterbodies.
- Recommendations made on the specialist studies (Hydrogeological, hydrology & Wetland delineation study) will be taken into consideration.
- Should any heritage resources be stumbled upon that were not jotted down in this EMPr, prospecting activities should be placed on hold and SAHRA must be notified immediately.

### **14 DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE**

The location of drill sites is still proposed and will be confirmed through the phased approach of the prospecting programme. This assessment is therefore based on a desktop approach at a broad scale and assuming that drilling could occur anywhere within the proposed prospecting license area except near water bodies or sinkhole. 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.

### **15 REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED**

#### **15.1 REASONS WHY THE ACTIVITY SHOULD BE AUTHORISED OR NOT**

It is the opinion of the EAP that the proposed activity should be authorised to improve the economy of the Victor Khanye as well as to discourage the inclined unemployment rates. Prospecting activities will not interfere with the current landuse since crop farming is not all year round. Activities will be proposed to be done after the harvest season. Concurrent rehabilitation will be done after each drill site to return the land to its pre-prospecting state. The impacts on the environment can be mitigated through open communication and transparency with the community, landowners, implementation of the proposed EMPr provisions including the decommissioning, closure and rehabilitation plans, and limiting site access requirements.

## **15.2 CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION**

- ❖ There will be Stakeholder Engagement continuation throughout the prospecting activities to ensure the community and landowners are kept informed and allowed to raise issues. These issues will then be addressed through a grievance mechanism.
- ❖ Areas of high sensitivity should be avoided.
- ❖ Arrangements for financial provisions for the decommissioning, closure and rehabilitation must be made.
- ❖ The applicant should adhere to the conditions of the EA, EMPR and the Specialist reports for this project.

## **16 PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED**

The Environmental Authorisation is required for the duration of the Prospecting Right of five (5) years. The authorisation is required for the duration of the prospecting right which is an initial 5 years and the Application should be given an opportunity for possible withdrawals.

## **17 UNDERTAKING**

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 Basic Assessment Report and the Environmental Management Programme report.

## **18 FINANCIAL PROVISION**

A financial provision of approximately **R2 295 796.00** (excluding that the of rehabilitation activities) has been budgeted for the prospecting programme over 5 years as PWP, will be made by Mandlezile industrial supply (Pty)Ltd.

**Table 22: Financial Quantum**

CALCULATION OF THE QUANTUM							
Applicant: Evaluator:		<b>Mandlezile industrial supply (Pty)Ltd</b> Khumbelo Makhado			Ref No.:	DMRE REF: MP 30/5/1/1/2/15846 PR.	
					Date:	May-21	
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	16	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	228	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	336	1	1	0
3	Rehabilitation of access roads	m2	300	41	1	1	12300
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	395	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	216	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	455	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	238697	1	1	0
7	Sealing of shafts adits and inclines	m3	0	122	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	159131	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	198195	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	5575653	1	1	0
9	Rehabilitation of subsided areas	ha	0	133249	1	1	0
10	General surface rehabilitation	ha	0,9	126059	0,01	1	1134,531
11	River diversions	ha	0	126059	1	1	0
12	Fencing	m	0	144	1	1	0
13	Water management	ha	0	47931	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	16776	1	1	0
15 (A)	Specialist study	Sum	0	0	1	1	0
15 (B)	Specialist study	Sum	0	0	1	1	0
						Sub Total 1	13434,531
1	Preliminary and General		1612,14372	weighting factor 2			1612,14372
				1			
2	Contingencies			1343,4531	Subtotal 2		1343,4531
							16390,13
SIGN		Khumbelo Makhado		VAT (15%)		37371,45	
DATE		2021/05/25		Grand Total		53762	

**18.1 EXPLAIN HOW THE AFORESAID AMOUNT WAS DERIVED**

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.

**18.2 CONFIRM THAT THIS AMOUNT CAN BE PROVIDED FOR FROM OPERATING EXPENDITURE**

Motau Mining herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted. Work will be approved on a phase-by-phase basis, dependent on the results obtained in the previous phase i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. The amount is also reflected in the Prospecting Work Programme submitted to the DMRE.

**19 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY**

No additional information other than the appendices of this report has been included.

**19.1 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 BAR REPORT MUST INCLUDE THE:**

**19.1.1 IMPACT ON THE SOCIO-ECONOMIC CONDITIONS OF ANY DIRECTLY AFFECTED PERSON**

Potential impacts mentioned below on the socio-economic conditions have the potential to include:

❖ **Safety and security risks to landowners and lawful occupiers**

This is with reference to the unfamiliar workers to enter the project area during the prospecting activities. This impact could potentially affect the landowners, 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 and no prospecting activities shall take place at night.

❖ **Interference with existing land uses**

Parts of the land is used for agricultural purposes. The impact will be minimal since activities are of short duration which do not involve heavy equipment.

**19.1.2 IMPACT ON ANY NATIONAL ESTATE REFERRED TO IN SECTION 3(2) OF THE NATIONAL HERITAGE RESOURCES ACT**

Whilst no heritage resources have been identified within the proposed prospecting area care will be taken to avoid any sensitive heritage resources that may otherwise be identified during Prospecting. Where graves or fossils are identified proposed boreholes will be moved to avoid features of this type. If fossils or graves are discovered, the relevant authorities will be immediately notified and drilling will be stopped in this area. The area does have protected areas, threatened ecosystems or critical biodiversity, and no sensitive parts will be negatively affected by the drilling procedures owing to the small scale of the prospecting activity.

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

Refer to Appendix 3 & 4 for the proof of consultations conducted

## PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME

### 21 INTRODUCTION

#### 21.1 DETAILS OF THE EAP

Details of EAP are included in PART A section 1(a).

#### 21.2 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

The description of the aspects of the activity that are covered by the Draft Environmental Management Programme report is already included in PART A SECTION 2 above.

#### 21.3 COMPOSITE MAP

Refer to SECTION 11.2 above. Exploration is a temporal activity thus no permanent structures will be erected.

### 22 DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

#### 22.1 DETERMINATION OF CLOSURE OBJECTIVES

The following section details the goals and objectives that **Mandlezile Industrial Supply (Pty) Ltd** will aim to achieve. It includes both a commitment to ensure legal compliance and then highlights the goals and objective for those impacts which are deemed most significant for exploration. The vision, and consequent objective and targets for rehabilitation, decommissioning and closure, aim to reflect the local environmental and socio-economic context of the project, and to represent both the corporate requirements and the stakeholder expectations.

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

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

❖ **Verification of rehabilitation success.** Entails monitoring of rehabilitation.

## **22.2 VOLUMES AND RATE OF WATER USE REQUIRED FOR THE OPERATION**

2 000litres per day and 60 000 litres required for drilling purposes for the entire operation.

## **22.3 HAS A WATER USE LICENCE BEEN APPLIED FOR?**

No water use licence has been applied. Since no boreholes have yet been established or located on site, it is anticipated that water brought onto the site will be sourced from the Victor Khanye Local Municipality.



## 22.4 IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

**Table 23:** Impacts to be mitigated

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Site clearance	Construction Operation	0.9 ha, short term and localized	<ul style="list-style-type: none"> <li>• Demarcation of sensitive areas in consultation with relevant specialists and ECO;</li> <li>• Utilise local labour if possible;</li> <li>• Minimise removal of vegetation as far as possible;</li> <li>• Identification and relocation of protected species by a qualified ecologist (and application of the relevant biodiversity permits where required);</li> <li>• Minimize dust generation; Limit vehicle access;</li> <li>• Implement alien vegetation management;</li> <li>• Ongoing identification of risks and impacts;</li> <li>• Emergency preparedness;</li> <li>• Monitoring and review; and</li> <li>• Avoid disturbance of fauna as much as possible, especially bird nesting sites.</li> </ul>	NEMA MPRDA NEMBA NEMAQA Dust regulations NWA DWAf Best Practice Guidelines	Throughout Construction and operation
Site access	Construction Operation	105.569 ha, short term and localized	<ul style="list-style-type: none"> <li>• 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).</li> <li>• This induction should be presented or otherwise facilitated by the Contractors EO/Mine EO wherever possible.</li> <li>• 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.</li> <li>• 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.</li> <li>• Consideration must be taken by the applicant and/or contractors when on site not to interfere with the existing land uses and practices.</li> </ul>	NEMA OHS and MHSA	Throughout Construction and operation

Establishment of site infrastructure	Construction	2,1 ha, short term and localized	<ul style="list-style-type: none"> <li>• Minimise physical footprint of construction;</li> <li>• Ensure construction is consistent with occupational health and safety requirements;</li> <li>• Minimise vegetation clearance;</li> <li>• Ensure proper and adequate drainage;</li> <li>• Minimise waste and control waste disposal;</li> <li>• Fencing of all drill sites with security access control and warning signs;</li> <li>• Establish waste storage areas for recycling;</li> <li>• Ensure adequate containment of waste to prevent pollution;</li> <li>• Minimise dust generation;</li> <li>• Limit vehicle access to approved access roads;</li> <li>• Prepare contingency plans for spillage and fire risks.</li> </ul>	<p>NEMA MPRDA NEMBA NEMAQA Dust regulations NWA DWAf Best Practice Guidelines NHRA</p>	Throughout Construction and operation
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Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Storage of construction vehicles	Construction and Operation	0,6 ha, 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 Compacting of soil must be avoided as far as possible, and the use of heavy machinery must be restricted in areas outside of the proposed exploration sites to reduce the compaction of soils.	NWA DWAf BPG	Throughout Construction and operation
Transportation/ access to and from drill sites	Construction and Operation	2,1 ha, 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;	NEMA NEMBA CARA NEMAQA Dust Regulations Road Traffic Act	Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>All farm gates must be closed immediately upon entry/exit;</p> <p>Under no circumstances may the contractor damage any farm gates, fences, etc.;</p> <p>On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic (where relevant);</p> <p>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;</p> <p>Damage caused to public roads as a result of the construction activities must be repaired in consultation with the relevant municipal authorities; and</p> <p>All measures should be implemented to minimize the potential of dust generation.</p>		
Storage of hazardous substances	Construction and Operation	0,6 ha, 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

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>Hazardous substances must be confined to specific and secured areas, and stored at all-time within banded areas;</p> <p>Adequate spill prevention and clean-up procedures should be developed and implemented during the prospecting activities.</p> <p>Should any major spills of hazardous materials take place, such should be reported in terms of the Section 30 of the NEMA.</p>		
Waste management	Construction and Operation	Short-medium term, localized	<p>Waste generated on site must be recycled as far as possible. Recyclable waste must not be stored on site for excessive periods to reduce risk of environmental contamination;</p> <p>Drill muds, formation water (if encountered), etc. would constitute waste and must be classified and ranked in terms of relevant legislation for correct disposal; and</p> <p>A Waste Management System must be implemented, and provide for adequate waste storage (in the form of enclosed containers) waste separation for recycling, and frequent removal of non-recyclable waste for permanent disposal at an appropriately licensed waste disposal facility. No waste material is to be disposed of on site.</p>	DWAF Minimum requirements for waste disposal NEMWA	Throughout Construction and operation

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Prospecting boreholes: 15 sites , with a footprint of 200 m <sup>2</sup> each	Construction and Operation Decommissioning	0,9 ha, short term	<p>Vegetation clearing for prospecting sites should be kept to a minimum in order to reduce the disturbance footprint;</p> <p>The use of heavy machinery must be restricted in areas outside of the proposed prospecting sites to reduce the compaction of soils;</p> <p>All measures should be implemented to minimize the potential of dust generation;</p> <p>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;</p> <p>When working near to a potential sensitive area, the contractor must limit the number of simultaneous activities to the minimum;</p> <p>Ensure proper storage of fuels;</p> <p>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;</p> <p>Workforce should be kept within defined boundaries and to agreed access routes.</p> <p>No-invasive prospecting activities to be undertaken within 100m of a watercourse.</p> <p>Should any watercourse be affected, then the necessary water use licences should be obtained from the Department of Water and Sanitation.</p> <p>No ablation of site laydown areas is to be located within 100m of a watercourse.</p> <p>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.</p>	<p>SANS 10103 ECA Noise Regulations NEMAQA Dust Regulations NWA</p>	Throughout Construction and operation and decommissioning

<b>Prospecting</b>	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
<b>Resource definition drilling</b>	Planning Phase Construction and Operation	0,9 ha, short term	<p>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. 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.</p> <p>Any spills of hydrocarbons or fluids used during operation, must be cleaned up immediately.</p> <p>An above ground drilling sump must be used to contain drilling mud to reduce surface and groundwater contamination. No earthen mud sumps are to be constructed and utilized.</p> <p>No prospecting boreholes should be drilled in the immediate vicinity of existing private boreholes.</p> <p>Soils in drilling areas where disturbances will be encountered must be stripped and stockpiled outside affected areas for use after completion of the drilling program.</p> <p>Topsoil must be adequately stripped to the correct depth and stored separately from subsoils.</p> <p>A liner should be placed over the drill pad and drip trays must be used in all areas where hydrocarbons are handled;</p> <p>On-site vehicles must be limited to approved access.</p> <p>routes and areas on the site so as to</p>	MPRDA Regulations GN R527 SANS 10103 ECA Noise Regulations NEMAQA Dust Regulations NWA DWAFF BPG NHRA	Planning Phase Throughout Construction and operation



Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic;</p> <p>The designated competent authority (DMR) may, at the cost of the Applicant, appoint an independent and competent person to undertake borehole examination.</p> <p>Should any fugitive emissions be detected, then the recommendations of the must be undertaken throughout the drilling activity up to the decommissioning of the wells.</p> <p>Should any chance finds be uncovered during the construction phase, these must be handled in accordance with the requirements of the National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA); and</p> <p>If a possible heritage site (including graves) or artefact is discovered during construction, all operations in the vicinity of the discovery (at least 30 m buffer) should stop and a qualified specialist contracted to evaluate and recommend appropriate actions. Depending on the type of site that can include initiating a grave relocation process, documentation of structures or archaeological excavations.</p> <p>Should fossil remains be discovered in the during any phase of construction, either on the surface or exposed by fresh excavations, the ECO responsible for these developments should be alerted immediately. Such discoveries ought to be protected (preferably in situ) and the ECO should alert SAHRA so that appropriate mitigation (e.g.</p>		

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>recording, sampling or collection) can be taken by a professional palaeontologist.</p> <p>The Final BAR and appendices must be submitted to SAHRA for record purposes;</p> <p>If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit, must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA; and</p> <p>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.</p>		

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Refuelling	Construction and Operation	Short term and localized	<p>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;</p> <p>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.</p>	NWA DWAF BPG	Throughout Construction and operation
Maintenance and repair	Construction and Operation	Short term and localized	<p>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;</p> <p>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.</p>	NWA DWAF BPG NEMA	Throughout Construction and operation
Borehole Closure	Decommissioning and Closure	Short term and localized	<p>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;</p> <p>Cement and liquid concrete are hazardous to the natural environment on account of the very high pH of the material, chemicals contained.</p>	NWA DWAF BPG	Throughout Decommissioning and Closure

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			<p>therein. As a result, the contractor shall ensure that:</p> <ul style="list-style-type: none"> <li>• Concrete shall not be mixed directly on the ground;</li> <li>• 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 aggregate shall also be removed.</li> </ul>		
Removal of surface infrastructure	Decommissioning	Short term and localized	<p>All infrastructure, equipment, and other items used during prospecting will be removed from the site.</p> <p>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.</p>	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

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
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

## 22.5 IMPACT MANAGEMENT ACTIONS AND OUTCOMES

**Table 24:** Summary of impact management actions and outcomes

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
<b>Site clearance</b>	Deterioration and damage to existing access roads and tracks; Dust generation; Clearance of vegetation; Invasion by alien species; Sedimentation Erosion	Topography; Soil; Air Quality; Surface Water; Groundwater; Transportation	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA NEMBA CARA Threatened or Protected Species (TOPS) regulations  NEMAQA Dust regulations NWA DWAf best Practice Guidelines

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
<b>Establishment of base camps and access</b>	Interference with existing land uses Safety and security risks to landowners and lawful occupiers; Deterioration and damage to existing access roads and tracks; Dust generation; Clearance of vegetation; Pollution of soils Contamination on surface and ground	Topography; Landform; Soil disturbance; Fauna and Flora; Air Quality; Surface Water; Groundwater; Socioeconomics	Construction Operation	Avoidance and control through preventative measures (e.g. communication with landowners, site access control) Remedy through application of mitigation measures in EMP	NEMA MPRDA NEMBA CARA Threatened or Protected Species (TOPS) regulations NEMAQA Dust regulations NWA DWAf best Practice Guidelines



Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
<b>Storage of construction vehicles</b>	Pollution of surface and groundwater resources from potential hydrocarbon spills; and Compaction of soils	Surface water; Groundwater; Soils.	Construction Operation	Avoid through implementation of EMP mitigation measures (e.g. communication with landowners) Control through implementation of ESMS	Protected Species (TOPS) regulations NEMAQA Dust regulations NWA DWAf best Practice Guidelines
<b>Transportation to and from drill sites</b>	Soil compaction; Disturbance and Loss of fauna and flora; Wearing and tearing of existing roads; and Dust generation from increased traffic.	Soil disturbance; Fauna and Flora; Air quality.	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA NEMBA CARA Threatened or Protected Species (TOPS) regulations NEMAQA

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

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
<b>Prospecting boreholes</b>	Vegetation clearance; Possible erosion; Changes in drainage and surface hydrology; Soil disturbance and compaction; Emissions from vehicles; Land use conflict; Noise disturbance due to acoustic sources; Dust generation; Disturbance or damage of palaeontological resources; Potential spills of hydrocarbons; Influx of people; Impact on groundwater	Ecology; Topography; Access/footprint; Soil disturbance; Noise; Air Quality; Socio-economics; Groundwater	Construction Operation Decommissioning	Control through implementation of EMPR mitigation measures	SANS10103 ECA Noise Regulations NEMAQA Dust regulations NWA
<b>Resource definition drilling</b>	Vegetation clearance Removal of topsoil; Changes in drainage and surface hydrology; Drainage and soil contamination; Land use conflict; Dust generation;	Air Quality; Noise; Surface water; Groundwater,	Operation	Control through implementation of EMPR mitigation measures	SANS10103 ECA Noise Regulations NEMAQA Dust regulations

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
	Disturbance of wildlife and communities in close vicinity; New access roads; Increased transportation; Damage to local infrastructure; Disturbance or damage of palaeontological resources; Influx of people; Wastewater discharge; Spillage and leaks of hydrocarbons; Pollution or interplay between groundwater aquifers; Waste disposal.				NWA DWAF best Practice Guidelines
<b>Refuelling</b>	Potential hydrocarbon spills that could pollute soil or surface and/or groundwater resources.	Pollution; Surface water; Groundwater	Construction Operation	Control through implementation of EMPr mitigation measures	NWA DWAF best Practice Guidelines
<b>Maintenance and repair</b>	Potential hydrocarbon spills that could pollute surface and groundwater resources.	Pollution; Surface water; Groundwater	Construction Operation	Control through implementation of EMPr mitigation measures	NWA

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
<b>Borehole closure</b>	<ul style="list-style-type: none"> <li>• Pollution of groundwater resources;</li> <li>• Potential pollution of habitats with cement residue that may be exposed to runoff etc.</li> </ul>	Pollution; Groundwater	Decommissioning	Control through implementation of EMPr mitigation measures	NWA
<b>Removal of surface infrastructure</b>	<ul style="list-style-type: none"> <li>• Soil compaction;</li> <li>• Pollution of soil and surrounding vegetation.</li> </ul>	Landform; Topography; Soils.	Decommissioning	Control through implementation of EMPr mitigation measures	MPRDA In accordance with

					Rehabilitation plan
<b>Rehabilitation</b>	<ul style="list-style-type: none"> <li>• Soil compaction;</li> <li>• Soil and Water contamination;</li> <li>• Erosion;</li> <li>• Change is drainage and surface hydrology;</li> <li>• Loss of habitat; and</li> <li>• Disturbance to wildlife and communities in close vicinity</li> </ul>	<p>Topography</p> <p>Land use</p> <p>Soil disturbance</p> <p>Ecology</p> <p>Surface water</p> <p>Groundwater</p>	Rehabilitation	Control through implementation of EMPr mitigation measures	MPRDA In accordance with Rehabilitation plan
<b>Monitoring of rehabilitated sites</b>	<ul style="list-style-type: none"> <li>• Soil compaction;</li> <li>• Soil and Water contamination;</li> <li>• Erosion;</li> <li>• Disturbance to wildlife; and communities in close vicinity.</li> </ul>	<p>Topography</p> <p>Land use</p> <p>Soil disturbance</p> <p>Ecology</p> <p>Surface water</p> <p>Groundwater</p>	Post-operation	Control through adhering to monitoring requirements	MPRDA and regulations

## 23 FINANCIAL PROVISION

The following regulations, Regulation 6, 10 and 11 of the Financial Provisioning Regulations aims to regulate the determination and making of financial provision as contemplated in the NEMA under the NEMA regulations for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts from prospecting, mining or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future.

### 23.1 DESCRIBE THE CLOSURE OBJECTIVES AND THE EXTENT TO WHICH THEY HAVE BEEN ALIGNED TO THE BASELINE ENVIRONMENT DESCRIBED UNDER THE REGULATION

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

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

### 23.2 CONFIRM SPECIFICALLY THAT THE ENVIRONMENTAL OBJECTIVES IN RELATION TO CLOSURE HAVE BEEN CONSULTED WITH LANDOWNER AND INTERESTED AND AFFECTED PARTIES

The environmental objectives in relation to closure will be consulted with affected parties. The end use for area will revert to its pre-prospecting land use after the prospecting operations. However, should the prospecting operation yield positive results, then the farm could be subject to a mining rights application and another more comprehensive Public Participation, Scoping, EIA and EMP process. If a mining right is granted, then the area will be rehabilitated according to the requirements of the approved Environmental Management Programme that would apply throughout the life of the mine.

## 23.3 REHABILITATION PLAN

### 23.3.1 INTEGRATED REHABILITATION AND CLOSURE PLAN

The main aim of the rehabilitation plan development is to mitigate the impacts caused by the prospecting activities and to restore land back to a satisfactory standard. It is best practice to develop the rehabilitation plan as early as possible so as to ensure the optimal management of rehabilitation issues that may arise. It is important that the closure plan of the project is defined and understood

aforehand the process and is complementary to the rehabilitation goals. Rehabilitation and closure objectives need to be site specific and be well aligned with the EMPr.

### **Phase 1:** Making Safe

All 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. In line with the DWAF (2008). Best Practice Guideline A6: Water Management for Underground Mines. The contractor shall ensure that the concrete is not mixed directly on the ground and visible remains of concrete, either solid or from washings should physically be removed immediately and disposed as waste since cement and liquid concrete are hazardous to the natural environment with regards to the high pH of the material, and the chemicals contained therein.

### **Phase 2:** Landform Design, Erosion Control and Revegetation

Landform, erosion control and re-vegetation form an important part of the rehabilitation process. The landform should be rehabilitated to a condition as close as possible to that which existed prior to prospecting. This can be achieved by the following:

- ❖ Shaping, levelling and de-compacting the final landscape after removing all the project infrastructure, dress with topsoil.
- ❖ Removing access roads with no beneficial re-use potential by deep ripping, shaping and levelling after the removal and disposal of any culverts, drains, ditches and/or other infrastructure. Natural drainage patterns are to be reinstated as closely as possible.
- ❖ Constructing contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation.
- ❖ Promoting re-vegetation through the encouragement of the natural process of secondary succession.
- ❖ Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the borehole sites), so as to encourage the establishment of pioneer vegetation.
- ❖ Remove alien and/or exotic vegetation.

### **Phase 3:** Monitoring and Maintenance

Following decommissioning, the post-operational monitoring and management period of prospecting activities must be implemented by a suitable qualified independent party for a minimum of one year unless otherwise specified by the competent authority. Monitoring of any unforeseen impact will be provisioned should there be a need as a result of the proposed prospecting activities and incorporated into post closure monitoring and management. The monitoring activities during this period will include but not be limited to re-vegetation of disturbed areas where required and biodiversity monitoring.



### **23.3.2 POST-CLOSURE MONITORING AND MAINTENANCE**

A monitoring programme shall be developed and submitted to the relevant authority for approval, as a part of the Final Rehabilitation Plan prior to decommissioning and rehabilitation activities. The programme should include proposed monitoring during and after the closure of the prospecting borehole sites and related activities. The plan will act as a confirmation that any waste, wastewater or other pollutants that is generated as a result of decommissioning will be managed appropriately, as per the detailed requirements set out in the Final Rehabilitation Plan, acceptable cover has been achieved in areas where natural vegetation is being re-established and that the prospecting drill sites are safe- not a resultant to pollution. Environmental report will be submitted annually.

### **23.4 EXPLAIN WHY IT CAN BE CONFIRMED THAT THE REHABILITATION PLAN IS COMPATIBLE WITH THE CLOSURE OBJECTIVES**

The rehabilitation plan seeks to ensure that negative impacts on the receiving environment that could not be prevented or mitigated during the prospecting activities are rehabilitated. The use of indigenous species during re-vegetation will ensure that ecosystem restoration is initiated and prevent invasion by alien species, the capping of boreholes will prevent future environmental issues related to fluid leakage or lateral movement through the borehole, as well as protect water resources. The appropriate disposal of waste will ensure that land is usable, in alignment with surrounding land uses and that no hazardous materials are left on site post-prospecting.

### **23.5 CALCULATE AND STATE THE QUANTUM OF THE FINANCIAL PROVISION REQUIRED TO MANAGE AND REHABILITATE THE ENVIRONMENT IN ACCORDANCE WITH THE APPLICABLE GUIDELINE**

Refer to section 18

### **23.6 CONFIRM THAT THE FINANCIAL PROVISION WILL BE PROVIDED AS DETERMINED**

Mandlezile Industrial Supply (Pty) Ltd herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted. Work will be approved on a phase-by-phase basis, dependent on the results obtained in the previous phase i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. The amount is also reflected in the Prospecting Work Programme submitted to the DMRE.

## 24 MECHANISMS FOR MONITORING COMPLIANCE

**Table 25:** Mechanisms for monitoring compliance

Source Activity	Impacts Requiring Monitoring Programme	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
<b>Desktop Study: Literature Survey / Review / acquisition of data</b>	None	None	None	None
<b>Geological field mapping</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<ul style="list-style-type: none"> <li>• Site inspections and checklists;</li> <li>• Complaints register</li> </ul>	<input type="checkbox"/> Contractors Environmental Representative; ECO	<input type="checkbox"/> Daily inspections and checklists
<b>Regional Ground Geophysical Surveys</b>	<input type="checkbox"/> All Impacts Identified in the EMP	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Site Clearance:</b>	<ul style="list-style-type: none"> <li>• Possession of permits for protected species</li> <li>• Relocation of protected species</li> <li>• Alien vegetation management</li> </ul>	<ul style="list-style-type: none"> <li>• Document Control</li> <li>• Site Inspections and checklists</li> <li>• Report review and</li> <li>• Development of actions plans</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors Environmental Representative;</li> <li>• Environmental specialist, ECO</li> </ul>	<ul style="list-style-type: none"> <li>• Once-off control of documents, site visit and reporting;</li> <li>• Monthly site visits;</li> <li>• Monthly Reports Annual Performance Assessment</li> </ul>

Source Activity	Impacts Requiring Monitoring Programme	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
<b>Target Prospecting Boreholes:</b>  <b>15 drill sites</b>	<ul style="list-style-type: none"> <li>• Alien vegetation management</li> <li>• Noise (if any complaints are registered by residents)</li> <li>• Air quality (if complaints are registered)</li> <li>• Surface and groundwater management</li> <li>• Impacts on heritage features</li> </ul>	<ul style="list-style-type: none"> <li>• Site Inspections and checklists;</li> <li>• Report review and development of corrective action plans</li> <li>• Inspection of surface water features</li> <li>• Survey of groundwater users and use within 5km of the invasive prospecting sites.</li> <li>• Demarcation of sensitive areas</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors Environmental Representative;</li> <li>• Environmental specialist, ECO</li> <li>• Senior Environmental Management;</li> <li>• Geohydrologist (if required)</li> </ul>	<ul style="list-style-type: none"> <li>• Once-off control of documents, site visit and reporting;</li> <li>• Monthly site visits;</li> <li>• Monthly Reports Annual Performance</li> <li>• Prior to invasive prospecting activities and monitoring post-prospecting.</li> </ul>
<b>Data Compilation</b>	None	None	None	None

Source Activity	Impacts Requiring Monitoring Programme	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
<b>Detailed Ground geophysical Surveys</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Widely Spaced Prospecting Boreholes: 15 sites</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative; ECO	<input type="checkbox"/> Daily inspections and checklists
<b>Closely Spaced Prospecting Boreholes</b>	<ul style="list-style-type: none"> <li>• Alien vegetation management</li> <li>• Noise (if any complaints are registered by residents)</li> <li>• Air quality (if complaints are registered)</li> </ul>	<ul style="list-style-type: none"> <li>• Site Inspections and checklists;</li> <li>• Report review and development of corrective action plans</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors Environmental Representative;</li> <li>• Environmental specialist, ECO</li> <li>• Senior Environmental Management.</li> </ul>	<ul style="list-style-type: none"> <li>• Once-off control of documents, site visit and reporting;</li> <li>• Monthly site visits;</li> <li>• Monthly Reports Annual Performance</li> </ul>
<b>Environmental Screening by ECO</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists

Source Activity	Impacts Requiring Monitoring Programme	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
<b>Ablutions - Chemical Toilets</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Sample storage (Existing BMM prospecting office. No new infrastructure to be constructed)</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Access Route (Mostly existing roads to be utilised. Access tracks will be made where there are no existing routes.)</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Temporary general waste storage (General/domestic waste - Wheelie bin)</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists

Source Activity	Impacts Requiring Monitoring Programme	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
<b>Temporary hazardous waste storage (Hazardous waste – Sealed Container)</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<input type="checkbox"/> Contractors Environmental Representative	<input type="checkbox"/> Daily inspections and checklists
<b>Compilation of geological plans</b>	None	None	None	None
<b>Undertake decommissioning and rehabilitation as per the rehabilitation plan 6 000 m2 +15 000 m2 (Drill sites + Access tracks)</b>	<ul style="list-style-type: none"> <li>• Alien vegetation management</li> <li>• Noise (if any complaints are registered by residents)</li> <li>• Air quality (if complaints are registered)</li> </ul>	<ul style="list-style-type: none"> <li>• Site Inspections and checklists;</li> <li>• Report review and development of corrective action plans</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors Environmental Representative;</li> <li>• Environmental specialist, ECO</li> <li>• Senior Environmental Management</li> <li>• Surface water specialist</li> </ul>	<ul style="list-style-type: none"> <li>• Monthly site visits;</li> <li>• Monthly Reports and Annual Performance Assessments</li> </ul>
<b>Monitoring of rehabilitation efforts</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists	<ul style="list-style-type: none"> <li>• ECO;</li> <li>• Independent Environmental Auditor</li> </ul>	<input type="checkbox"/> Monthly reports

<b>Surface Water</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<input type="checkbox"/> Site Inspections and checklists;	<input type="checkbox"/> ECO;	<input type="checkbox"/> Monthly Reports
		<input type="checkbox"/> Report review and development of corrective action plans	<ul style="list-style-type: none"> <li>• Contractors Environmental Representative;</li> <li>• Senior Environmental Management</li> </ul>	
<b>Groundwater</b>	<input type="checkbox"/> All Impacts Identified in the EMPr	<ul style="list-style-type: none"> <li>• Site Inspections and checklists;</li> <li>• Report review and development of corrective action plans</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental specialist, ECO</li> <li>• Senior Environmental Management</li> </ul>	<ul style="list-style-type: none"> <li>• Monthly;</li> <li>• If pollution event occurs at boreholes.</li> </ul>



## **25 INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT**

The Performance Assessment report will be submitted to the DMRE annually. Should there be any emergencies or unforeseen impacts, the DMRE officials or any other relevant government departments will be notified immediately.

## **26 ENVIRONMENTAL AWARENESS PLAN AND TRAINING**

Environmental awareness Plan and Training form a basic part of a complete EMPr. The overall aim of the training will be to ensure that all site staff are informed of their relevant requirements and obligations pertaining to the relevant authorisations, licences, permits and the approved EMPr and conservation of the environment. The applicant and contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner and are capable of complying with the relevant environmental requirements.

### **26.1 MANNER IN WHICH EMPLOYEES WILL BE INFORMED OF ENVIRONMENTAL RISKS**

Environmental awareness will be manifested and promoted by induction course for all personnel on site, before commencing site visits. Personnel should also be alerted to particular environmental concerns associated with their tasks for the area in which they are working and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. Courses will be given by reputable personnel and in a language and medium understood by workforces. Toolbox talk sessions can also be held prior to site access as a form of environmental awareness.

### **26.2 MANNER IN WHICH RISKS WILL BE DEALT WITH TO AVOID POLLUTION OR DEGRADATION OF THE ENVIRONMENT**

The risks measures to control or mitigate any causes of pollution or degradation of the environment as a result of the proposed prospecting activities taking place include the containment of the potential pollutants and contaminants at source and handling which must be conducted in bunded areas. Implementation of a waste management system for all waste stream present on site as well as the implementation of the impact management objectives, outcomes, and actions, as described above in the Environmental Management Programme report. It is of great importance to ensure extensive environmental training for personnel on-site to avoid any pollution or environment degradation.

## **27 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY**

No additional information was requested or is deemed necessary.

## 28 UNDERTAKING

The EAP herewith confirms

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



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Signature of the environmental assessment practitioner:

SINGO CONSULTING (PTY) LTD

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Name of company:

01/06/2021

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Date: June 2021

# APPENDICES

**Appendix 1:** *Details and experience of the EAP*

## EAP profile

Dr Ndinanyi Kenneth Singo

### TERTIARY EDUCATION

Qualification	:	<b>Ph.D.</b> (Geology, Applied Environmental Mineralogy & Geochemistry)
Institution	:	University of Johannesburg
PhD Project Title	:	In Search of the Possible Economic Potential, through Conceptual Study, on Reclamation of Defunct Mine Residue areas for Development Purposes: Case study of Musina Copper Mine, Gyanu Louis Moore Gold Mine and Zwigodini Nyala Magnesite Mine, South Africa
Qualification	:	<b>M.Sc.</b> (Environmental Management)
Institution	:	University of South Africa
Masters Project Title	:	An Assessment of Heavy Metal Pollution In the Vicinity of the Defunct Copper Mine Dumps in Musina, South Africa
Qualification	:	<b>B.Sc.</b> (Hons) Mining & Environmental Geology
Institution	:	University of Venda
Honours Project Title	:	Structural Control on Kimberlite Pipes: A Case Study of Venetia Kimberlite Pipe-K19, Venetia Open Cast Diamond Mine, South Africa

### 1 Introduction

Dr. Singo is a Principal Consultant (Earth Science), and REAP (EAPASA) in the Mining, Agricultural and Construction sector and currently works for Singo Consulting, an advisory firm based in eMalahleni. He has over 11 years' experience in diverse areas of natural resources including Geology, Geochemistry and Environmental Geochemistry. He is a coal expert with extensive experience of the Waterberg, Soutpansberg, Witbank, Highveld, and Springbok flats, as well as the Tete (Mostize) coalfield in Mozambique.

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

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

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

### 2 Affiliations

- South African Council for Natural Scientific Professions (SACNASP: Earth Science Reg. No: 400069/16)
- Geological Society of South Africa (GSSA)

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- and Erven 0-16 of the Vaalbank Township HU (Town code: N0HJ0684), situated under the Magisterial District Of Vryheid/Utrecht, Kwazulu-Natal Province. Mahlatj A- 010 072 2011.
19. Basic Assessment Report and Environmental Management Programme Report for Prospecting Right Application for Barytes, Corundum, Magnesite, Gold, Vanadium and Manganese, in all Portions of the Farms: Hopeful 93 LT and Nieuwland 112 LT, situated within Collins Chabane Local Municipality under the Magisterial District of Vuwani, Limpopo Province. Mahlatj A- 010 072 2011.
  20. 20. Basic Assessment Report and Environmental Management Programme Report for Prospecting Right Application for Barytes, Corundum, Magnesite, Gold, Vanadium and Manganese, in all Portions of the Farms: Koedoesfontein 113 LT, Zeemool 110 LT & Schaaplaagte 108 LT, situated within Greater Letaba Local Municipality under the Magisterial District of Sekgose, Limpopo Province. Mahlatj A- 010 072 2011.
  21. Basic Assessment Report and Environmental Management Plan in the Application for a Prospecting Right in respect of Ter Blance 155 MT, Septimus 156 MT, Martin 157 MT, Rynie 158 MT Amonda 159 MT, Graandk 162 MT, and David 160 MT, Fokvohodwe, Limpopo Province. 27 73 501 2819
  22. Basic Assessment Report and Environmental Management Programme Report Mining Permit for coal resources on portion of portions 167,76 & 77 of the farm Haauwpoort 335 JS. Sthosana Jonathan Basl+27 76 602 3797.
  23. Proposed mining of coal on the farm Middelburg Town and Townlands, farm 287 JS (portion RE) in Middelburg Mpumalanga Province. Basic Assessment Report and Environmental Management Programme report. 076 246 3677.
  24. Basic Assessment Report and Environmental Management Programme report for mining permit for coal resources on a portion of farm 1231 JS, situated under magisterial district of Middelburg, Mpumalanga province. 072 2039 153.
  25. 25. Basic Assessment Report and Environmental Management Programme report for Mining Permit for coal resources on portion of portion 07 of the farm Teufffontein 407 JS, situated under Magisterial District of Middelburg, Mpumalanga Province. 072 2039 153.
  26. Proposal to re-establish Quarry pit on farm Spitzkop 276 IS, portion 64, Msukaligwa Local Municipality, Mpumalanga. Basic Assessment Report and Environmental Management Programme report 071 414 7066/078 2828 839.
  27. Proposal to establish Quarry pit on portion re of farm Randjesfontein 43 MT, Vhembe District Municipality (Musina Local Municipality), Limpopo Province. Basic Assessment Report and Environmental Management Programme report +27 78 2727 839.
  28. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Greater Giyani 891 LT Portion RE, Magisterial District of Giyani, Limpopo Province. +27 78 2727 839 / 072 0816 682.
  29. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Braispruit 320 LS Portion 02, Magisterial District of Soutpansberg, Limpopo Province. 072 081 6682 / 078 272 7839.
  30. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Uitenpas 02 MT Portion RE, Magisterial District of Musina, Limpopo Province. 072 081 6682 / 078 272 7839.
  31. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of a Portion of Farm 440 MT, Zwigodini, Limpopo Province. 072 081 6682 / 078 272 7839.
  32. Prospecting Right Application on Portion(s) 3 & 64 of Farm Eenzaamheid 534 JR, Portion 4, 5, 6, 7, 8, & 9 of Farm Loopspruit 435 JR, Bronkhorstspuit & Wilbank, Mpumalanga Province. +27 11 615 9318 / +27 82 495 4560- Marlou George.
  33. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Slangkop 296 LQ and Steenbokpan, Magisterial District of Mokopane, Limpopo Province. +27 82 495 456/+27 11 615 9318- George Marlou.
  34. Basic Assessment Report and Environmental Management Programme Report for mining permit for coal resources on portion of portion 00216 of the farm Blesbokgaagte 296 JS, IN Wilbank, Mpumalanga Province. +27 82 495 456/+27 11 615 9318- George.
  35. Basic Assessment Report and Environmental Management Programme Report for prospecting right application by Bo Vincle Holdings for coal resources on various farm portions, Magisterial District of Wilbank, Mpumalanga Province. Khumalo Michael- 078 791 5858.
  36. Mining Permit for coal resources on portion re of the farm Boschmansfontein 12 IS, under Magisterial District OF Wilbank, Mpumalanga Province. 082 416 7582/ 061 490 3111.
  37. Prospecting Right in respect of Moofontein 285 JS. Portion(s): 1, 4, 5, 6, 7, 8 & 9 Magisterial District of Middelburg, Mpumalanga Province. 076 246 3677 074 897 7977
  38. Prospecting Right Application in respect of Beerkraal 104 LR, Portion RE, Magisterial District of Mokopane, Limpopo Province. 076 246 3677 / 074 897 7977- Simeane G B.
  39. Basic Assessment Report and Environmental Management Programme report in respect of portion 03, 04 and 05 of the farm Grootrietvley 210 JS, within the Magisterial District of Belfast, Mpumalanga. +27 76 246 3677- Simeane G B.

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40. Basic Assessment Report & Environmental Management Programme Report for the: proposed prospecting for coal resources by Jaments (pty)ltd on Leeufontein farm no 219 IR portion 5. +27 76 246 3677- Simelane G B.
41. Mining Permit application for coal resources on portion RE of the farm Boschmansfontein 12 IS, under Magisterial District of Witbank, Mpumalanga Province. +27 76 246 3677- Simelane G B.
42. Basic Assessment Report and Environmental Management Programme Report Mining Permit for coal resources on portion 01 of the farm Boschmansfontein 12 IS, under Magisterial District of Witbank, Mpumalanga province. +27 76 246 3677- Simelane G B.
43. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Blesboispruit 455 JS on portion: 1, 3 and 4, Magisterial District of Belfast, Mpumalanga Province. +27 76 246 3677- Simelane G B.
44. Proposed mining of the coal on the Farm Middelburg Town and Townlands. Farm 287 JS (Portion RE), in Middelburg, Mpumalanga Province. +27 76 246 3677- Simelane G B.
45. Basic Assessment Report and Environmental Management Programme Prospecting Right in respect of portion 17 of Wilkranz 53 TS, Mpumalanga. +27 76 246 3677- Simelane G B.
46. Proposed entablement of an open cast coal mine on the Farm Bandfontein, Farm no. 309 JS (Portion 34), in Witbank, Mpumalanga Province. 076 246 3677 / 074 897 7977-Simelane G B
47. Basic Assessment Report and Environmental Management plan in the Application for a Prospecting Right in respect of All Portions of the Farm Doornfontein 446, within the jurisdiction of Tsantsabane Local Municipality, in Northern Cape Province. 076 246 3677.
48. Basic Assessment Report and Environmental Management Programme respect of Report in Kromdraai 292 IS on portion(s): 01, 03, 08, 19, 20, 26 & 29 in the Magisterial District of Witbank, Mpumalanga Province. Simelane G B- 076 246 3677 / 074 897 7977.
49. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Kromdraai 292 IS on portion: 7, 25, 33, 34, 35, 36, 38, 39 & 40 Magisterial District of Witbank, Mpumalanga Province DMR REF: MP30/S/1/1/2/15188PR. 076 246 3677-Simelane G B.
50. Basic Assessment Report and Environmental Management Plan Prospecting Right in respect of Portion 1 - 29 in Farm Belfontein 420 IS, Magisterial District of Bethal, Mpumalanga. 076 246 3677 / 074 897 7977-Simelane G B.
51. Basic Assessment Report and Environmental Management Plan for Prospecting Right in respect of All portions of Bankhoek 464 IS and Hendrikspan Settlement 460 IS, Mpumalanga Province. 076 246 3677 / 074 897 7977-Simelane G B.
52. Proposed establishment of an open cast Coal mine Within portions of even 4912 and 4457 of Witbank Extension 34 (a portion of remainder of portion 61 of the farm Witbank 307 JS), in Witbank, Mpumalanga Province. +27 76 246 3677-Simelane G B.
53. Vlakspuit prospecting right Report Basic Assessment and Environmental Management Plan in respect of Portion RE, 2 & 24 of the Farm Vlakspuit 308 IS under the magisterial district of Bethal, Mpumalanga province. +27 76 246 3677-Simelane G B.
54. Basic Assessment Report and Environmental Management in respect of portion of portion 01 of the farm Aangewys 81 IS, within the Magisterial District of Emalahleni (Witbank), Mpumalanga Province. +27 76 246 3677-Simelane G B.
55. Basic Assessment Report and Environmental Management Plan Prospecting Right in respect of portion 17 of Wilkranz 53 TS, Mpumalanga. +27 76 246 3677-Simelane G B
56. Basic Assessment Report and Environmental Management Plan Prospecting Right Application in respect of Portion 04,05 and 08 of the Farm Bankpan 225 IS, Magisterial District of Bethal, Mpumalanga Province. +27 76 246 3677-Simelane G B.
57. Basic Assessment Report and Environmental Management Report in respect of Kofffontein 530 JR on the entire farm, Magisterial District OF Bronkhorstspuit, Gauteng Province. +27 76 246 3677-Simelane G B.
58. Prospecting Right Application by Jaments (pty) ltd for coal resources on portion 10 of the farm Goedehoop 106 IF, Magisterial District of Ermelo IN. +27 76 246 3677-Simelane G B.
59. Basic Assessment Report and Environmental Management Plan for Prospecting Right Application by Jaments (pty) ltd for coal resources on farm Kalbasfontein 284 JS, Magisterial District of Witbank, Mpumalanga Province. Mpumalanga Province. +27 76 246 3677-Simelane G B.
60. Basic Assessment Report and Environmental Management Plan Prospecting Right in respect of portion 17 of Wilkranz 53 TS, Mpumalanga. +27 76 246 3677-Simelane G B.
61. Basic Assessment Report and Environmental Management Programme in respect of the Prospecting Right Application by New Venture Exploration (pty) ltd for coal resources on portion(s): 1, 5, 9, 12, 13, 14, & 20 of the farm Suikerboeckkop 278 JS, Magisterial of Witbank in Mpumalanga Province. 072 914 3508.
62. Basic Assessment Report and Environmental Management Programme Report for Prospecting Right application on portions 01-07, 09-11 & RE the farm Klarestroum 147 KP, situated under Moses Kotane Local Municipality, North West Province. Simelane G B- 076 246 3677/ 074 897 7977.

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63. Proposed coal mining pit on portion 83 of the farm Schoongezicht 308 JS IN Kwa-Guqa, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga Province. 076 246 3677- Simelane G B.
64. Basic Assessment Report and Environmental Management Programme Report in respect of portion 01 and portion 15 of the farm Aangewys 81 IS, within the Magisterial District of Emalahleni (Witbank), Mpumalanga Province. 076 246 3677- Simelane G B.
65. Basic Assessment Report and Environmental Management Plan for Prospecting Right in respect of portion 17 of Witkranz 53 TS, Mpumalanga. 076 246 3677 / 074 897 7977-Simelane G B.
66. Basic Assessment Report and Environmental Management Plan application for a Prospecting Right in respect of Woestaleen 447 JS on Portion: 08, Magisterial District of Middleburg, Mpumalanga Province. DMR Ref (DMR: MP 30/5/1/1/2/15068 PR.
67. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Jagdrift 359 ff and Helen 386 ff on portions 1, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14 & re, magisterial district of Wakkerstroom, Mpumalanga Province. 076 246 3677- Simelane G B.
68. Prospecting Right Application in respect of Rietvallei 78 JS on Portion 17, Magisterial District of Middleburg, Mpumalanga Province. 076 246 3677- Simelane G B.
69. Basic Assessment Report and Environmental Management Plan in respect of Portions 00,01,11-34,36-44,47-51,53-55,61-65,69-75,79-84,91-93 & 99 of the Farm Geluk 348 JT (Ref: MP 305/1/1/2/15424 PR) under Magisterial District of Belfast, Mpumalanga Province. 076 246 3677- Simelane G B.
70. Basic Assessment Report AND Environmental Management Plan Prospecting Right application by Jaments (pty) ltd for coal resources on farm Leeuwpoot 283 JS, Magisterial District of Witbank in Mpumalanga province, Mpumalanga Province. 076 246 3677- Simelane G B.
71. Basic Assessment Report and Environmental Management Plan Prospecting Right Application in respect of Portion RE of the Farm Yzerfontein 106 IS, Magisterial District of Bethal, Mpumalanga Province. 076 246 3677- Simelane G B.
72. Proposed coal mining pit on portion 19 of the farm Biesboklaagte 296 JS, Kwa-Guqa, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga province. 076 246 3677- Simelane G B.
73. Proposed coal mine pit on portion 76 of the farm Naauwpoot 335 JS, Witbank, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga province. +27 (0) 76 246 6377.
74. Basic Assessment Report & Environmental Management Programme Report for the: proposed Prospecting for coal resources by New Venture Exploration (pty)ltd portion 71 of farm Klipfontein 322 JS, and portion 30, 32, 54 - 56 & 154 of farm Naauwpoot 335 JS, in Witbank, Mpumalanga province. 076 246 3677- Simelane G B.
75. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application on portions 1, 2 & RE of the farm Buchansvale 61 IG, portions 1 and RE of the farm Somerville 62 IG, portions 1-7, 9, 11-15, 17-30 & RE of the farm Klerkskraal 65 IG, portion re of the farm eileen's home 67 IG, portions 10, 11, 13, 19 & RE of the farm Boverste oog van Mooltvier 68 IG & portion re of the farm Boverste oog van Mooltvier 271 IG, situated under the Magisterial District of Ventersdorp, North West province. 076 246 3677- Simelane G B.
76. Proposed coal mine pit on portion 08 of the farm Driefontein 338 JS, Magisterial District of Middelburg, Mpumalanga province. 076 246 3677- Simelane G B.
77. Proposed mining of the coal On the Farm Koomfontein 27 IS, in Middelburg, Mpumalanga Province. Basic Assessment Report and Environmental Management Programme Report. 076 246 3677- Simelane G B.
78. Basic Assessment Report and Environmental Management Plan Prospecting Right in respect of Portion 02: 03 & RE of Farm Kilpbank 295 ff, Mpumalanga. 076 246 3677- Simelane G B.
79. Basic Assessment Report and Environmental Management Plan Prospecting Right in respect of All portions of Bankhoek 464 IS and Hendrikspan Settlement 460 IS, Mpumalanga. 076 246 3677- Simelane G B.
80. Basic Assessment Report and Environmental Management Plan Prospecting Right Application in respect of the Farm Sterkwater 24 LQ, Magisterial District of Lephalale, Limpopo Province. 076 246 3677- Simelane G B.
81. Basic Assessment Report and Environmental Management Plan Prospecting Right Application in respect of Portion 05, 11 & 14 of the Farm Halfgewonnen 190 IS, Magisterial District of Carolina, Mpumalanga Province. DMR REF: MP 305/1/1/2/ 15441 PR. 076 246 3677- Simelane G B.
82. Basic Assessment Report & Environmental Management Programme Report for the: proposed prospecting for coal resources by: Jaments (pty)ltd on farm Vierfontein farm no. 61 is portion of portion 6, portion of portion 32, portion of portion 45 and portion of portion 47. 076 246 3677- Simelane G B.

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83. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Jaments (pty) ltd for coal resources on farm Potatfontein 412 JS, Magisterial District of Middleburg, Mpumalanga Province. 076 246 3677- Simelane G B.
84. Prospecting Right application by Jaments (pty) ltd for coal resources on portion RE of farms Rhenosterpan 331 LG and Dopperfontein 332 LG in Magisterial District of Lephalale, Limpopo province. 076 246 3677- Simelane G B.
85. Basic Assessment Report & Environmental Management Programme Report prospecting right application for coal on portion 1 & 4 of the farm Spring Grove 227 IF Magisterial District Ermelo Province Mpumalanga. 076 246 3677- Simelane G B.
86. Basic Assessment Report and Environmental Management Programme Report in respect of portion 8 of the farm Kromdraai 325 IS and the Remaining Extent of the farm Branddrift 322 IS under Magisterial District of Standerton, Mpumalanga Province. 076 246 3677- Simelane G B.
87. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Coal, in Portions 4 & 5 of the Farm Keerom 374 JS, situated within Steve Tshwete Local Municipality under the Magisterial District of Middelburg, Mpumalanga Province. 076 246 3677- Simelane G B.
88. Basic Assessment Report and Environmental Management Plan Application for a prospecting right in respect of farm Schuins 378 KI, situated at Thaba Chweu Local Municipality in the Magisterial District of Lydenburg, Mpumalanga Province. 076 246 3677- Simelane G B.
89. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application to prospect for gold, chrome, silver and platinum on portion 04 of the farm Hilversum 696 JT, RE of the farm Mantose 716 JT and the RE of farm Estada 704 JT situated under the Magisterial District of Barberton Mpumalanga province. 076 246 3677- Simelane G B.
90. Basic assessment report & environmental management programme report Prospecting Right Application for coal on portion 5, 10-16, 105 & 156 of the farm Kromdraai 292 JS, Magisterial District Witbank, Mpumalanga Province. 076 246 3677- Simelane G B.
91. Prospecting Right, Environmental Authorization and Integrated Water Use License Application (IWULA) for diamond on portion 3 and portion of portion 4 of the farm Langverwacht no. 94, remainder of farm Doornlaagte no.97 and portions 2, 4, 5, 6, 9, 10, 12, 14, 15 & 18 of the farm Brakdam no.143 situated under the Kimberley Magisterial District, Northern Cape. 076 246 3677- Simelane G B.
92. Basic Assessment Report & Environmental Management Programme Report for Prospecting Right Application in respect of Diamond on the Farm Pienaars Fontein 55, situated in the Magisterial District of Barkly West, Northern Cape Province. 076 246 3677- Simelane G B.
93. Basic Assessment Report and Environmental Management Programme Report for Prospecting Right application for diamond on the farm Weltevreden 214, on the Remaining Extent & portion 01, situated under the Magisterial District of Barkly West, Northern Cape Province. 076 246 3677- Simelane G B.
94. Basic Assessment Report & Environmental Management Programme Report for Prospecting Right, Environmental Authorization and Integrated Water Use License Application (IWULA) for Diamond on the Farm Plaas 152, situated under the Barkly West Magisterial District, Northern Cape. 076 246 3677- Simelane G B.
95. Draft Basic Assessment Report and Environmental Management Programme Report for Mining Permit application for coal on a portion of portion 44 of the farm Blesbokaagte 296 JS, situated within the Magisterial District of Witbank, Mpumalanga Province. 076 246 3677- Simelane G B.
96. Basic Assessment Report and Environmental Management Programme Report FOR Mining Permit application in respect of portion of portion 23 of the farm Blesbokaagte 296 JS, Magisterial District of Witbank, Mpumalanga Province. 076 246 3677- Simelane G B.
97. Basic Assessment Report and Environmental Management Programme Report Mining Permit for coal on portion of portion 23 of the farm Blesbokaagte 296 JS, situated under the Magisterial District of Witbank, Mpumalanga Province. 076 246 3677- Simelane G B.
98. Basic Assessment Report and Environmental Management Programme Report for Mining Permit application in respect of portion of portion 23 of the farm Blesbokaagte 296 JS, under magisterial District of Witbank, Mpumalanga Province. 076 246 3677- Simelane G B.
99. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Barytes, Corundum, Magnesite, Gold, Vanadium and Manganese in all Portions of the Farms Hartebeestfontein 139 LT, Schoonuitsicht 111 LT and Noblehof 92 LT situated under the Magisterial District of Vuwani and Seligose, Limpopo Province. Ngamone Xolani-078 5325 761.

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100. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Beryllium, Corundum, Magnetite, Gold, Vanadium and Manganese on the Remaining Extent of the Farm Morgerzon 94 LT situated under the Magisterial District of Vuwani, Limpopo Province. Ngomane Xolani-078 5325 761.
101. Prospecting Right application on portions 45 & 61 of the farm London 112 HO, situated under the Magisterial District of Schweizer-Reneke, North West Province. Jack Mazwi- 082 782 8219.
102. Proposed coal Mine pit on portion of portion 11 the farm Woestalen 477 JS, Magisterial District of Middelburg, Mpumalanga Province. Jack Mazwi- 082 782 8219
103. Basic Assessment and Environmental Management Programme Report application for Environmental Authorization of a coal Processing Plant on plot 49 (portion of portion 49) of the farm Naauwpoort 335 JS, situated in the Magisterial District of Emalahleni, Mpumalanga Province. +27 71 167 8625.
104. Mining Permit Application on De Goedeverwachting332 KT under the magisterial district of Sekhukhune land, In Limpopo Province. 0734985613 / 0727276041
105. Prospecting Right Application on Portion(s) 15 and 16 of the farm Spitzkop 333 KT under the magisterial district of Sekhukhune land, In Limpopo Province. 0734985613 / 0727276041
106. Basic Assessment Report and Environmental Management Programme Report in respect of the farm Tigerpoort 426 KS, portion of portion 1 and the Remaining Extent. 0734985613 / 0727276041.
107. Coalpit on portion of portion 11 and 19 of the farm Orspoed 500 JR, Bronkhorstspuit, Tshwane Metropolitan Municipality, 072 268 2682.
108. Basic Assessment Report and Environmental Management Programme Report coal pit on portion of portion 11 and 19 of the farm Orspoed 500 JR, Bronkhorstspuit, Tshwane Metropolitan Municipality, 072 268 2682.
109. Proposed coal Mining pit on portion 84 of the farm Nootgedacht 300 JS, Kwa-Guqa, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga Province. +27 76 162 9147.
110. Prospecting Right Application on Portion(s) 1,2, 3, 4, 6, 7, 8, 9,10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22 & RE of the Farm Hoosfontein 28 IS, Middelburg, Mpumalanga Province. +27 12 809 1896 / +27 79 078 4532.
111. Mining Permit of the granite in Mbuzini village, situated within the Magisterial District of Ehlanzeni, Mpumalanga Province. 082 0505 226/084 528 1447.
112. Draft Environmental Management Programme (empr) for the proposed construction of a filling station with a convenience store on Mabeskraal (Tamboeterand) within a portion of portion 0 of the farm Tamboeterand 143 JP, North West Province. 02 November 2019.
113. Basic Assessment and Environmental Management Programme Report application for a Mining Permit and Environmental Authorization on a portion of portion 08 of the farm Dreehoek 273 IS, situated in the Magisterial District of Ermelo, Mpumalanga Province. +27 71 167 8625.
114. Basic Assessment Report and Environmental Management Programme Report Mining Permit for coal and pseudo coal on portion of portion 1 of the farm Donkerhoek 10 HT situated under the Magisterial District of Wakkerstroom, Mpumalanga Province. Maseko Sibusiso Roberti+27 72 960 2738.
115. Basic Assessment Report and Environmental Management Programme Report for Mining Permit application in respect of portion of portion 01 of the farm Grootlaagte 70 HT, Magisterial District of Wakkerstroom, Mpumalanga Province. Maseko Sibusiso Roberti+27 72 960 2738.
116. Basic Assessment Report and Environmental Management Programme of Mining Permit for coal on the portion of portion 1 of the farm Sulkerhoek 104 HT, situated in the Magisterial District of Wakkerstroom, Mpumalanga Province. Maseko Sibusiso Roberti+27 72 960 2738.
117. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Folyol Construction and projects for coal and pseudo coal resources on portions 1,3 & 10 of farm Donkerhoek 10 HT and portions 5 & 6 of the Prospectfarm 361 IT, within the Magisterial District of Wakkerstroom, Mpumalanga Province. Maseko Sibusiso Roberti+27 72 960 2738.
118. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Folyol Construction and Projects for coal and pseudo coal resources on portions 1,3 & 70 (excluding mining permit area) of the farm Grootlaagte 70 HT and all portions of the farm St. Helena 67 HT, within the Magisterial District of Wakkerstroom, Mpumalanga Province. Maseko Sibusiso Roberti+27 72 960 2738.

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119. Basic Assessment Report and Environmental Management Programme Report for Mining Permit application in respect of portion 31 (remaining extent) of the farm Spitskop 276 IS, Magisterial District of Emelo, Mpumalanga Province. +27 63 198 2305
120. Prospecting Right Application on the Farm Pretoria 264 KT, situated under the Magisterial District of Sekhukhune, in Limpopo Province.
121. Mining Permit Application on De Goedeverwachting 332 KT under the magisterial district of Sekhukhune land, in Limpopo Province. Basic Assessment Report & Environmental Management Programme Report. 0734985613 / 0727276041.
122. Mining Permit application by Black Igolide Chrome (pty) ltd for Chrome resources on portion 5 (Remaining Extent) of the farm Alverton 274 KT, Magisterial District of Sekhukhune, Limpopo Province. 073 342 3893.
123. Basic Assessment Report & Environmental Management Programme Report. 082 957 6206.
124. Basic Assessment Report & Environmental Management Programme Prospecting Right Application for Chrome, Andalusite, Copper, Iron Ore, Manganese and Platinum group metals on portions 1 and RE of the Farm Vloenshoop 301 KT, situated under the Magisterial District of Sekhukhune, in Limpopo Province. 0835286888.
125. Basic assessment report & environmental management programme report Prospecting Right Application for Chrome, Andalusite, Copper, Iron Ore, Manganese and Platinum group metals on portions 1 to 11 and RE on the Farm Steelpoortsdrift 296 KT, situated under the Magisterial District of Sekhukhune, in Limpopo Province. 0835286888.
126. Basic Assessment Report and Environmental Management Programme Report Mining Permit for coal resources on portion of the Remaining Extent of the farm Woodstock 232 It, Magisterial District of Emelo, Mpumalanga Province. 083 528 6888/082 713 4541.
127. Basic Assessment Report & Environmental Management Programme Report Basic Assessment Report and Environmental Management Programme Report of the mining permit on farm Alverton 274 KT for Chrome, Copper, Andalusite, Iron, Manganese, Nickel and Platinum group metals. In the Magisterial District of Greater Tubatse, Mpumalanga.
128. Prospecting Right Application on the Farm Edendale 124 KT, situated under the Magisterial District of Greater Tubatse, in Limpopo Province.
129. Mining Permit for sand and aggregate resources on portion of the Remaining Extent of the farm Kwaggafontein 216 JR, in Wilbank, Mpumalanga Province.
130. Proposal to establish sand and aggregate pit on farm portion of Remain Extant of Kwaggafontein 216 JR. 013 243 2916.
131. Proposed chrome mine pit on the farm Alverton 274 kt, Magisterial District of Tubatse, Limpopo Province Basic Assessment Report & Environmental Management Programme Report. +27 82 808 4555.
132. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application for coal and general clay on: portions RE/23, 28, 52 & 85 of the farm Grootfontein 165 IR, portions RE/16, RE/29, 66 & 74 of the farm Varkenfontein 169 IR under the Magisterial District of Nigel, Gauteng Province. +27 72 372 0580.
133. Basic Assessment Report and Environmental Management Programme Mining Permit application for coal on portion of portion 27 of the farm Grootfontein 23 HT, situated under the Magisterial District of Wakkerstroom, in Mpumalanga Province. +27 60 583 9290.
134. Proposed Coal Mining pit on portion RE of the farm Wateryk 304 JS, Hlanikahle, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga Province. 013 741 1844, M: 061 4252 560, M: 072 5372 172.
135. Basic Assessment Report and Environmental Management Plan of an application for a Prospecting Right in respect of a Portion of Portion 39 of Farm Schoongezicht 218 IR, Magisterial District of Wilbank, Mpumalanga Province. +27 82 338 2796.
136. Basic Assessment Report and Environmental Management Programme Report Mining Permit for Coal and Pseudo Coal resources on portion of portion 88 of the farm Nooitgedacht 300 JS, in Wilbank, Mpumalanga province. 072 884 5397.
137. Basic assessment and environmental management programme report Mining permit by Lance Holdings (Pty) Ltd for the proposed aggregate pit on Portion of the Remaining Extent of the Farm Njelepoort 193 MT, situated in the Magisterial District of Dzanani, Limpopo Province. 082 893 8121.
138. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal on portion of portion 83 of the farm Schoongezicht 308 JS, situated under the Magisterial District of Wilbank, Mpumalanga Province. 072 353 5358.
139. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal on portion of portion 08 of the farm Woestalleen 477 JS, situated under Magisterial District of Middleburg, Mpumalanga Province.
140. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal on portion of portion 08 of the farm woestalleen 477 JS, situated under Magisterial District of Middleburg, Mpumalanga Province. +27 (0) 72 353 5358.
141. Environmental Management Programme Performance Assessment Report for Coal pits at farm Schoongezicht 308 JS, portion of portion 06, situated under the Magisterial District of Wilbank, Mpumalanga Province.

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142. Coal mini pit on farm Kaffir Locatie 24 HT, Mkhondo Local Municipality, Mpumalanga province Basic Assessment Report and Environmental Management plan report. +27 (0) 82 256 0854.
143. Annual Environmental Management Programme Performance Assessment. +27 (0) 82 256 0854.
144. Proposed coal mine pit on portion RE of the farm Tecklenburg's 548 JU, Magisterial District of Barberton, Mpumalanga Province Basic Assessment Report & Environmental Management Report. 079 118 4934.
145. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal resources on portion of portion 2 of the farm boschfontein 447 JS, under the Magisterial District of Middelburg, Mpumalanga Province. Daniel Zulu. +27 72 082 9999.
146. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Coal, Pseudocoal and Tarbanite/ Oil Shale In all Portions of the following various Farms; Stockholm 5642 GT, Stonehammar 4723 GT, Valkop 2253 GT, Eamscliff 3308 GT, Beauvale 2249 GT, Gamet 5180 GT, Knostrope 3316 GT, Bavloan-kloof 5031 GT, Hartlot dale 4324 GT, N.R. Gehren 17317 GT, The paddock 3615 GT, Kirkland 4124 GT, Zuur kop 4127 GT, Rooifontein 13483 GT, Saaf 6594 GT, 18499 GT, Eamscliff 17612 GT, Giba 15095 GT, Rooifontein 5270 GT, Rest 4658 GT, Summerville 4245 GT and Rodekop 4656 GT, situated within Masinga Local Municipality, under the Magisterial District of Dundee, KwaZulu-Natal Province. Daniel Zulu. +27 72 082 9999.
147. Proposed Coal Mining pit on portion B of the farm Grootvallei 258 JS, Witbank, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga province Basic Assessment Report and Environmental Management Programme Report. 013 692 7975.
148. Basic Assessment Report and Environmental Management Programme Mining Permit for Coal on portion of portion 34 of the farm Elandsfontein 309 JS, situated under the Magisterial District of Witbank, Mpumalanga Province.
149. Prospecting Right application in respect of Noolgedacht 366 JT, Portion (s): 2, 3, 4, 5, 7, 10, 11, 12 and 13, Belfast/Waterval Boven, Mpumalanga Province. 0814128530.
150. Basic Assessment Report and Environmental Management Programme Report. Prospecting Right application by Coztouch (pty) ltd for Coal resources on the farm Kromspruit 453 FO portion 01, 02, 03, 04, RE on the Magisterial of Edenburg, FreeState Province. 081 412 8530.
151. Draft Basic Assessment Report & Environmental Management Programme Report Prospecting Right application by CML projects (pty) ltd for coal resource on portion 39 of the farm Blandspruit 291 JS, Magisterial District of Middelburg, Mpumalanga Province. 0814128530.
152. Basic Assessment and Environmental Management Programme Report Prospecting Right application on the farm Paardefontein 584 IR, situated under the Magisterial District of Standerton, Mpumalanga Province. 081 412 8530.
153. Basic Assessment Report and Environmental management programme report Prospecting Right application by Coztouch (pty) ltd for coal resources on farm Derdehoek 82 HT, Magisterial District of Volksrust, Mpumalanga Province. 0814128530. Masipa M.
154. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Coztouch (pty) ltd for coal resources on farm Doornkop 412 JS, Magisterial District of Middelburg, Mpumalanga Province. 0814128530. Masipa M.
155. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Coztouch (pty) ltd for coal resources on farm Span de Kroon 29 HS, Magisterial District of Standerton, Mpumalanga Province. Masipa M. 0814128530.
156. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Coztouch (pty) ltd for coal resources on farm Vermaakskool 532 IS, Magisterial District of Volksrust, Mpumalanga Province. 0814128530. Masipa M.
157. Draft Basic Assessment Report & Environmental Management Programme Report Prospecting Right application by Coztouch (pty) ltd for coal resource on portion of portion 5 & portion of portion 6 (known as portion 2) of the farm Witpoort 545 IR, Magisterial District of Balfour, Mpumalanga Province. 0814128530. Masipa M.
158. Basic Assessment Report and Environmental Management Programme Report in respect of farm Berg-en-dal 376 JT, Portions 1, 4, 5, 6, 7, 11, 13, 14, 15, 16, 17, 18, 20 and Remaining Extent. +27 81 4128 530. Masipa M.
159. Basic Assessment Report and Environmental Management Programme Report in respect of farm Berg-en-dal 378 JT and Wemmerhuse 327 JT. +27 81 4128 530.
160. Basic Assessment Report and Environmental Management Programme Report Prospecting Right report by Gadebe Investments cc for coal and gravel resources on farm Goedgedacht 228 JR, Magisterial District of Delmas, Mpumalanga Province. Masipa M. +27 81 4128 530.

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161. Basic Assessment and Environmental Management Programme Report Prospecting Right application on the farm Paardeplaat 512 JT, situated under the Magisterial District of Belfast, Mpumalanga Province. 081 412 8530.
162. Draft Basic Assessment Report and Environmental Management Programme Report in respect of the Remaining Extent of portion 01, portions 2, 6, the Remaining Extent of portions 3, 7, 9, 11 and 12, portions 15-20 of the farm Rietfontein 19 H and portion 4 of farm Doornkloof 23 H, situated under the Magisterial District of Carolina, Mpumalanga Province. +27 81 412 8530.
163. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Kamoma 2020 Investment (pty) Ltd for coal resources on farm Moabsvelde 412 JS, magisterial district of Middelburg, Mpumalanga province
164. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Lehakwe events and marketing (pty) Ltd for clay resources on farm Speekfontein 336 JS, Magisterial District of Witbank, Mpumalanga Province.
165. Draft Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resource on the Remaining Extent of portions 3, 4 & 27, portions 24 and 25 of the farm Avontuur 725 JT, Magisterial District of Carolina, Mpumalanga Province. 0814128530.
166. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Coal, Chrome and Platinum Group Metals (PGMs) on the Remaining extent of Portion 01 of the Farm Bankplaats 239 JS situated under the Magisterial District of Middelburg, Mpumalanga Province. 0814128530.
167. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resource on portions 1,3,6,8,23,24,25,26,27,28,29,30,31 & 32 of the farm Baviaanskloof 144 HS, located within Volksrust Magisterial District, Mpumalanga, Province. 0814128530.
168. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on farm Craigelea 202 H, Magisterial District of Ermelo, Mpumalanga Province. 0814128530.
169. Draft Basic Assessment Report and Environmental Management Programme report prospecting right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on the farm Doornhoek 143 JT, magisterial district of Ehlanzeni, Mpumalanga Province. 0814128530.
170. Draft Basic Assessment Report and Environmental Management Programme Report prospecting right application by siphwe Intskelelo trading enterprise (pty) Ltd for clay resource on the farm Gloria 186 G, under the Magisterial District of Middelburg, Mpumalanga Province. 0814128530.
171. Draft Basic Assessment Report and Environmental Management Programme report for the proposed prospecting right application of the mineral coal on all portions of the farm Klipspruit 502 H under the Magisterial District of Piet Retief, Mpumalanga Province.
172. Basic Assessment report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on farm Kroonstad 494 IS, Magisterial District of Gert Sibande, Mpumalanga Province. 0814128530.
173. Basic Assessment Report and Environmental Management Programme Report in respect of the Remaining Extent of the farm Samlee 411 H, within the Magisterial District of Piet Retief Mpumalanga Province. +27 81 412 8530.
174. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on farm Squamans 568 JU, Magisterial District of Balfour Mpumalanga Province. +27 81 412 8530.
175. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resource on farm Sterkfontein 54 HT, Magisterial District of Gert Sibande, Mpumalanga Province. +27 81 412 8530.
176. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on farm Uitenhage 133 H, Magisterial District of Ermelo, Mpumalanga Province. +27 81 412 8530.
177. Basic Assessment Report and Environmental Management Programme Report for coal resources in respect of the Remaining Extent of the farm Varkensdriif 314 H, within the Magisterial District of Piet Retief Mpumalanga Province. +27 81 412 8530
178. Basic Assessment Report and Environmental Management Programme in the application for a Prospecting Right in respect of Volharding 265 IS farm on Remaining Extent, in the Magisterial District of Ermelo, Mpumalanga. +27 81 412 8530
179. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Siphwe Intskelelo trading enterprise (pty) Ltd for coal resources on farm Winteskraal 55 HT, Magisterial District of Volksrust, Mpumalanga Province. +27 81 412 8530.

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180. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal resources on portion of portion 79 of the farm Wilbank 307 JS, Nkangala District Municipality, Mpumalanga Province. Moabi Karabelo 082 645 8889.
181. Proposed coal mining pit on portion 04 of the farm Straffontein 252 JR, Delmas, Nkangala District Municipality (Victor Khanye Local Municipality), Mpumalanga province. +27 (0) 11 883 3166.
182. Proposed coal Mining pit on portion of portion 14 of the farm Middelburg 231 IR, Delmas, Nkangala District Municipality (Victor Khanye Local Municipality), Mpumalanga Province. +27 (0) 82 543 0677.
183. Mining Permit for silica sand and aggregate in portion of the Remaining Extent of portion 05 of the farm Moabsvelde 248 IR, in the Magisterial District of Delmas in Mpumalanga Province. 082 543 0677.
184. Basic Assessment Report & Environmental Management Programme Report Mining Permit application for sand, aggregates, silica and decorative stones (gemstones) on portion 15 of the farm Middelburg 231 IR, Delmas Magisterial, Mpumalanga Province. 082 543 0677.
185. Basic Assessment Report and Environmental Management Programme Report Proposed Prospecting Right Application for Coal on All Portions of the Farm Geluk 234 IR; Portions 3, 4 & 10 of the farm Leeuwpoot 205 IR and Multiple Portions of the farm Rietkil 237 IR, situated under the Magisterial District of Delmas, Mpumalanga Province. 082 543 0677.
186. Draft Basic Assessment Report and Environmental Management Programme Report Prospecting Right and Environmental Authorization application by Motau Mining services (pty) ltd for coal and pseudo on portions re. 14 of the farm Middelburg 231 IR, portions 3 & 7 of the farm Witkilp 229 IR, portion re of the farm Goedklop 275 IR and portions 14, 17 & 35 of the farm Goedgedacht 228 IR, situated under the Magisterial District of Delmas, Mpumalanga Province. 082 543 0677.
187. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Aggregate and Silica Sand on Portion of the Remaining Extent of portion 5 of the Farm Moabsvelde 248 IR, situated in the Delmas Magisterial District, Mpumalanga Province. 082 543 0677.
188. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Construction aggregates, Silica and Gemstones on Portions 4, 5 & 15 of the Farm Middelburg 231 IR and Portion 13 of the Farm Leeuwpoot 205 IR, situated in the Delmas Magisterial District, Mpumalanga Province. 082 543 0677.
189. Basic Assessment Report & Environmental Management Programme Report Mining Permit Application in respect of Coal Resources on a Portion of the remaining Extent of the Farm Mambuka 16919 GU, situated in King Cetshwayo Magisterial District, KwaZulu-Natal Province. 063 213 3321.
190. Basic Assessment Report & Environmental Management Programme Report Mining Permit Application in respect of Coal Resources on a Portion of the remaining Extent of the Farm Lot 272 Empangeni 12922 GU, situated in King Cetshwayo Magisterial District, KwaZulu-Natal Province. +27 63 213 3321.
191. Basic Assessment Report & Environmental Management Programme Report Mining Permit Application in respect of Coal Resources on a Portion of the remaining Extent of the Farm Mambuka 16919 GU, situated in King Cetshwayo Magisterial District, KwaZulu-Natal Province. +27 63 213 3321.
192. Proposed granite/syenite quarry on the remaining extent of the farm Giko 17448 et, situated under the Magisterial District of Ugu, Kwazulu-Natal Province. +27 63 213 3321.
193. Basic Assessment Report & Environmental Management Programme Proposed granite/syenite quarry on the Remaining Extent of the farm Giko 17448 et, situated under the Magisterial District of Ugu, Kwazulu-Natal Province. Olivia Keamogetswe Matsomela 063 213 3321.
194. Basic Assessment report & Environmental Management Programme Report proposed Mining of coal application by Niche Mining resources pty(ltd) on farm Klippoot 277 JS portion 10, in Wilbank, Mpumalanga Province. 063 156 7794.
195. Prospecting Right application on the farms Schlickmanskloof 258 KT, Rooboklaagte 259 KT, Derdegeld 277 KT and Derde Geld 278 KT, situated under the Magisterial District of SekhukhuneLand, Limpopo Province. +27 76 264 2882.
196. Basic Assessment Report & Environmental Management Programme Report Mining Permit application for coal by Ansec trading pty (ltd) on a portion of portion 7 of the farm Tuetfontein 407 JS, within the Magisterial District of Middelburg, Mpumalanga Province 0729955507.
197. Basic Assessment Report and Environmental Management Programme Mining Permits for coal resources on portion of portion 01 of the farm Patatfontein 412 JS, situated under the Magisterial District of Middelburg, Mpumalanga Province. 072 012 5641.
198. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Coal, and Pseudocoal on the following various Farms: Remaining Extent & Portion 1 of Farm Kalkheuvel 454 MS; Farm Witfontein 18LS; Portions 1, 2, 3 & Remaining Extent of Farm Rietbokvlei 449 MS; Portions 1, 2, 5 & Remaining Extent of Farm Fraaifontein 447 MS and Portions

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199. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Coal and Pseudocoal on the on the Remaining Extent, Remaining Extent of Portion 1, Portions 2, 3 and 6 of the Farm Trekpad 455 MS, situated in the Local Municipality of Makhado, under Soutpansberg Magisterial District, Limpopo Province. Lesego Mathebula +27 62 873 2244.
200. Basic Assessment Report and Environmental Management Programme Mining Permit for coal, pseudo coal, clay & shale on portion of portion 15 of the farm Leeuwfontein 219 IR situated under the Magisterial District of Witbank, Mpumalanga Province. Heza D. R. +27 72 496 4087.
201. Basic Assessment Report and Environmental Management Programme Mining Permit for coal, pseudo coal, clay and shale extracting on portion within the Remaining Extent of portion 01 of the farm rietvllei 64 IS, situated in the Magisterial District of Witbank, Mpumalanga Province. Heza D. R. +27 72 496 4087.
202. Basic Assessment Report and Environmental Management Programme Mining Permit for coal, pseudo coal, clay, and shale on the portion of portion 6 of the farm Rondavel 403 IS, situated in the Magisterial District of Standerton, Mpumalanga Province. Heza D. R. +27 72 496 4087.
203. Basic Assessment Report and Environmental Management Programme Mining Permit for coal, pseudo coal, on portion of portion 0000 of the farm vaalbank 400 IS, situated under the Magisterial District of Standerton, Mpumalanga Province. Heza D. R. +27 72 496 4087.
204. Basic Assessment Report & Environmental Management Programme Report Mining Permit application for RDH Holdings (pty) ltd on portion of portion 07 of the farm Welgelegen 221 IR for coal, pseudo coal, shale and clay, situated under the Magisterial District of Delmas, Mpumalanga. Heza D. R. +27 72 496 4087.
205. Basic Assessment Report and Environmental Programme Report Prospecting Right Application for coal, pseudo coal, clay & shale on all portions of the Farm Leeuwfontein 219 IR situated under the Magisterial District of Witbank, Mpumalanga Province. Heza D. R. +27 72 496 4087.
206. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by RDH Holdings (pty) ltd for coal, pseudo coal, shale and clay resources on the Remaining Extent, portion of RE/1 and portions 2,4,6 -12 of the farm Rietvllei 64 IS, within the Magisterial District of Witbank, Mpumalanga Province. Heza D. R. +27 72 496 4087.
207. Basic Assessment Report and Environmental Management Programme Report Prospecting Right and environmental authorization application by RDH Holdings for coal, pseudo coal, clay, and shale on all portions (excluding a portion of portion 6) of the farm Rondavel 403 IS situated under the Standerton Magisterial District, Mpumalanga Province. Heza D. R. +27 72 496 4087.
208. Draft Basic Assessment Report and Environmental Management Programme Report Prospecting Right and Environmental Authorization application by RDH Holdings for coal, pseudo coal, clay and shale on all portions (excluding a portion of portion re) of the farm Vaalbank 400 IS situated under the Standerton Magisterial District, Mpumalanga Province. Heza D. R. +27 72 496 4087.
209. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application for coal, pseudo coal, clay & shale on all portions (excluding portion 07) of the farm Welgelegen 221 IR Magisterial District Delmas Province Mpumalanga. Heza D. R. +27 72 496 4087.
210. Mining Permit for coal resources on farm Middelburg Town and Townlands 287 JS, in Middelburg, Mpumalanga Province.
211. Prospecting Right Application on Portion (s) 05 & 07 of the Farm Weltevreden 174 IS, situated under the Magisterial District of Carolina, Mpumalanga Province. Basic assessment Report & Environmental Management Programme Report. +27 79 868 3161/ +27 81 492 8380.
212. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by Rowan trading and projects for coal resources on farm Kopemyn 435 JS Magisterial District of Middelburg, Mpumalanga Province. 076 246 3677
213. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application in respect of Coal Resources on Portions 1, 3, 4, 5 and 6 of the Farm Outfall 2414 GT, situated in the Magisterial District of Dundee, KwaZulu-Natal Province. Mathekho A. 073 441 0358/ 083 502 0801.
214. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application portion 02 of the farm Vlakfontein523 JR, situated under the Magisterial District of Bronkhorstspuit, Gauteng Province. +27 81 612 3157.

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215. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application for rare earths and vanadium on portion of portion 19 and portion 35 of the farm Vaalbank 511 JR, situated under the Magisterial District of Tshwane, Gauteng Province. +27 81 612 3157- Aaron Hlopho.
216. Basic Assessment Report & Environmental Management Programme Report Mining Permit Application for Coal on Portion 3 of Farm Bloemhof 127 HF, in the Magisterial District of Vryheid in KwaZulu Natal Province. +27 81 612 3157- Aaron Hlopho.
217. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application on portions 01, 03, 04 & 05 of the farm Bloemhof 127 HF, situated under the Magisterial District of Vryheid/Utrecht, KwaZulu-Natal Province. 081 570 3157.
218. Proposed Coal Mining pit on portion 20 and 29 of the farm schoongezicht 308 JS and portion 92 of the farm Nooitgedacht 300 JS, Kwa-Guqa, Nkangala District Municipality (Emalahleni Local Municipality), Mpumalanga Province. +27 (0) 72 600 7456/ +27 (0) 82 505 4561
219. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of the Farm Schoongezicht 308 JS, Magisterial District Wilbank, Mpumalanga Province (Portion 28, 29, 32, 33, 34, 38, 41 & 55). 082 505 4561.
220. Proposed coal Mining pit on portion of portion 8 of the farm Driefontein 338 JS, Magisterial District of Middelburg, Mpumalanga Province Basic Assessment Report & Environmental Management Programme Report. 072 9143 508.
221. Proposed coal mining pit on portion of portion 81 of the farm Onverwacht 70 IS, Magisterial District of Kriel, Mpumalanga Province. Basic assessment report & Environmental Management Programme Report. 0729143508.
222. Basic Assessment Report and Environmental Management Plan Prospecting Right application by Sasekha Enterprise (pty) ltd for coal resources on the farms Devon 7575, Curagh 7589, Dorset 10890, Wits 11144 and Poona 7511, Magisterial of Amajuba in KwaZulu-Natal Province. 072 914 3508.
223. Proposed Mining of the quarry on portion of a portion of the farm Matabula 701 JU, situated within the Magisterial District of Nelspruit, Mpumalanga Province. Basic Assessment Report and Environmental Management Programme Report. 078 272 7839.
224. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Brakfontein 264 IR (portion 11), 017 648 4995
225. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right in respect of Wolvenfontein 534 IR (portions 18, 19 and 20). 017 648 5674.
226. Mining Permit for Coal resources on farm Blyvoornulicht 363 JI, in Belfast, Mpumalanga Province. Basic Assessment Report and Environmental Management Programme Report. 060 349 3230.
227. Basic Assessment Report & Environmental Management Programme Report Prospecting Right application on the farms Grootspuit 455 JR, Vaalplaas 463 JR, Viakfontein 457 JR & viakfontein 453 JR, situated under the Magisterial District of Bronkhorstspuit, Gauteng Province. +27 79 228 0366.
228. Basic Assessment Report & Environmental Management Programme Prospecting Right application for arsenic, barite, asbestos, copper, fluorspar, lime, tin, thorium, uranium, gold, silver and coal on the Remaining Extent, portions 1 and 2 of farm Driefontein 693 KR, situated under the magisterial district of Moutse, Limpopo Province. 082 770 4736 Mr V S M Thabethe.
229. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for arsenic, barite, asbestos, copper, fluorspar, tin, lime, thorium, uranium, silver, gold & coal on Remaining extent, portions 2 & 3 of the Farm Keerom 729 KS, situated under the Magisterial District of Moutse, Limpopo Province. 082 770 4736 Mr V S M Thabethe.
230. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by The Curve Behind Trading 209 CC for arsenic, barite, asbestos, copper, fluorspar, lime, tin, thorium, uranium, gold, silver & coal resources on Remaining Extent & portion 2 of the farm Spitspunt 688 KR, Magisterial District. 082 770 4736 Mr V S M Thabethe.
231. Amendment to the Environmental Management Programme (Prospecting Right) of the farm Eerste Geluk 256 IS, situated under the Magisterial District of Bethal, Mpumalanga Province. 079 659 7991.
232. Basic assessment report and environmental management programme Mining Permit application for coal on portion 85 of the farm Naauwpoort, situated under the Magisterial District of Wilbank, Mpumalanga Province. Maxwell Mlangeni +27 76 085 5585/ +27 72 234 3443.
233. Basic Assessment Report & Environmental Management Programme Report Mining Permit for coal resources on portion of portions 167,76 & 77 of the farm Naauwpoort 335 JS, Sikhosana Jonathan Basi +27 76 602 3797.
234. Basic Assessment Report & Environmental Management Programme Report Mining Permit application for coal on a portion of portion 09 of the farm Onverwacht 70 IS, Magisterial District of Kriel, Mpumalanga Province. 079 530 7662.

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235. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by TR Engineering Projects (pty) Ltd for chrome ore on farm Bosoorivlei 75 JT, Magisterial District of Lydenburg, Mpumalanga Province. T. Nare +27 79 530 7662.
236. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by TR Engineering Projects (pty) Ltd for chrome resources on farm Kilfontein 144 JT, Magisterial District of Lydenburg, Mpumalanga Province. T. Nare +27 79 530 7662.
237. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application by TR Engineering Projects (pty) Ltd for copper, tin ore and tungsten resources on farm Rietfontein 446 JS, Magisterial District of Bronkhorstspuit/Mkobela, Mpumalanga Province. T. Nare +27 79 530 7662.
238. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application on portions 02, 03 & 20 of the farm Dwarfontein 209 IR, situated under the Magisterial District of Delmas, Mpumalanga Province. 013 854 0800/ 073 322 4171.
239. Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right Portion of portion 1 of the farm Simalangenitsha No. 16956 HU and the whole extent of the farm Bongaspoort 16930 HU.
240. Basic Assessment Report and Environmental Management Programme Report In respect of portion 01, 02, 03, 04, 05, 06, 07 & 08 of the farm Wasbank 194 HF, within the Magisterial District of Dundee, Kwazulu-Natal Province. (+27) 72 226 7673.
241. Basic Assessment Report & Environmental Management Programme Report Basic Assessment Report and Environmental Management Programme Report In Respect of Mining Permit Application for Chrome ore, Iron ore, Platinum Group Metals, Vanadium, Nickel & Tin on the Farm Keerom 151 JS, Situated Under the Magisterial District of Groblersdal, Limpopo Province. +27 13 696 2518.
242. Basic Assessment Report & Environmental Management Programme Prospecting Right application on the farm Keerom 151 JS, situated under the Magisterial District of Groblersdal, Limpopo Province. 071 126 1157.
243. Basic Assessment Report and Environmental Management Programme Report of the Mining Permit on farm Spitskop 333 KT for chrome, copper, andalusite, iron, manganese, nickel, and platinum group metals. In the Magisterial District of Greater Tubate, Limpopo. 071 126 1157.
244. Basic Assessment Report and Environmental Management Plan Mining Permit application in respect of Portion of Portion 01 of the Farm Wonderhoek 376 JS, Magisterial District of Middelburg, Mpumalanga Province. 072 226 7673.
245. Mining permit for chrome, nickel, and copper ore resources on portion of portion re of farm Liliput 166 JP, situated under the Magisterial District of Bojanala district Municipality, North West Province. Basic Assessment Report & Environmental Management Programme Report. 27 13 696 2518.
246. Mining Permit for chrome ore extraction on portion of portion 17 of the farm Krokodilpoort 418 JQ, situated under the Magisterial District of Brits, North West Province. Basic Assessment Report & Environmental Management Programme Report. 27 13 696 2518.
247. Basic Assessment Report & Environmental Management Programme Report. Prospecting Right Applications on various Farm portions within the Rustenburg and Moses Kotane Local Municipalities. Under the Bojanala Magisterial district, North-West Province. Musa Ronukh Malkane. +27 13 696 2518.
248. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Applications on various Farm portions within the Rustenburg and Moses Kotane Local Municipalities. Under the Bojanala Magisterial district, North-West Province. Musa Ronukh Malkane. +27 13 696 2518
249. Proposed establishment of an open cast coal mine on the Farm Witbank, Farm no. 53, Registration Division, II (Portion of remaining Portion 01), in Carolina, Mpumalanga Province. +27 13 696 2518
250. Establishment of Coal Mining Operation Portion of Portion 5 of the farm Kilpoort 277 JS, in Middelburg, Mpumalanga Province Basic Assessment Report and Environmental Management Programme Report. 082 957 6206.
251. Basic Assessment Report & Environmental Management Programme proposed establishment of an open cast coal mine on the farm Iromdraai 292 JS (portion re), in wWitbank, Mpumalanga Province. +27 72 4252 448.
252. Basic Assessment Report and Environmental Management Programme Report Prospecting Right application for pgms, chrome, gold, silver, cobalt, copper and vanadium on the farm Badfontein 531 KS, situated under the Magisterial District of Thabamooop, Limpopo Province. 015 295 6085.
253. Basic assessment report & Environmental Management Programme Report. Prospecting Right Application for Chrome and Platinum Group Metals (PGMs) in all Portions Farm Droogekloof 471 KR, situated under the Magisterial District of Waterberg, Limpopo Province.

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254. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Chrome and Platinum Group Metals on all portions of the Farm Nootgezen 716 KS, situated under the Magisterial District of Nebo, Limpopo Province. 072 900 2785
255. Assessment Report & Environmental Management Programme Report Prospecting Right Application for Chrome and Platinum Group Metals on all portions of the Farm Nootgezen 761 KS, situated under the Magisterial District of Nebo, Limpopo Province. 072 900 2785.
256. Coal Mining Right application, Environmental Authorisation application (Integrated Environmental Impact Assessment and Environmental Management Programme Report) and Water Use Licence Application on portion 2, 8, 10, 11, 12, 13, 14, 15 & re of the farm Rietfontein 313 IR In, located in the Highveld Ridge Magisterial district, Mpumalanga Province. +27 011 656 1418.
257. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Chrome Ore, Iron Ore, Limestone, Manganese Ore & Platinum Group Metals (PGMs) on various portions of the Farm Roodekopjes of Zwartkopjes 427 JQ, situated under the Magisterial District of Brits, North West Province. +27 76 277 8418
258. Draft Basic Assessment Report & Environmental Management Programme Prospecting Right Application for Chrome, Copper, Nickel and Platinum Group Metals (PGMs) In all Portions of the Farm Bokpoort 328 KR, situated under the Magisterial District of Waterberg, Limpopo Province. 079 634 3609/ 063 735 6342.
259. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Chrome Ore, Iron Ore, Limestone, Manganese Ore & Platinum Group Metals (PGMs) on the Farms Bulhoek 75 JQ & Palmietfontein 72 JQ, situated under the Magisterial District of Brits, North West Province. 079 634 3609.
260. Basic Assessment Report & Environmental Management Programme Report Prospecting Right Application for Chrome (Cr), Nickel (Ni), Copper (Cu) and Platinum Group Metals (PGMs) In all Portions of the Farm Daelen 327 KR, situated under the Waterberg District Municipality, Limpopo Province.
261. Basic Assessment Report & Environmental Management Programme Report, Mining Permit for Coal resources on portion of portion 01 of the farm Vredehof 299 HU, situated under the Magisterial District of Zululand, Kwazulu-Natal Province. Sifiso GoodMan Banda. 066 468 7132.

**List of Projects:**

List of Projects conducted and successfully completed by your company in mining Permits and Right.

Client Name	Contract Start date (dd/mm/yyyy)	Contract End date (dd/mm/yyyy)	*Contact Person	Contact Person's phone number(s) and Email Address
CoalX-Balmoral	28-02-2018	Ongoing	Rian Telma	H Mduza <a href="mailto:bramduza@icloud.com">bramduza@icloud.com</a> Riaan CoalX < <a href="mailto:riaan@coalx.co.za">riaan@coalx.co.za</a> >
New Venture Mining-Witank	23-4-2017	18/02/2021	Mr. GB Simelane	076 246 3677 <a href="mailto:simelanegb@gmail.com">simelanegb@gmail.com</a> , <a href="mailto:simelane@jaments.co.za">simelane@jaments.co.za</a>
Verali Mineral	1-8-2017	Ongoing	Mr. Rambauli TJ	<a href="mailto:jrambauli@yahoo.com">jrambauli@yahoo.com</a> 073 501 2819
Benicon Mining	1-10-2018	Ongoing	Mr Gavin Kotzen	<a href="mailto:gk@kgroup.co.za">gk@kgroup.co.za</a> 083 626 4555 017 647 1047
Bashupi Construction JV PDS	1-3-2020	Ongoing	Mrs P Tshabalala	0722580283
Goedvertrouwd Mining	18-01-2021	Ongoing	Rian Telma	Riaan CoalX < <a href="mailto:riaan@coalx.co.za">riaan@coalx.co.za</a> >
New Venture Mining- Boschmansfontein	18-02-2021	Ongoing	Mr. GB Simelane	076 246 3677 <a href="mailto:simelanegb@gmail.com">simelanegb@gmail.com</a> , <a href="mailto:simelane@jaments.co.za">simelane@jaments.co.za</a>



## Appendix 2: Background Information Document

# BACKGROUND INFORMATION DOCUMENT

## Proposed Prospecting Right Application for Coal on portions 11, 17-23 and 25-37 of the farm Moabsvelden 248 IR.

Magisterial District of Delmas,  
Victor Khanye Local  
Municipality.

Prepared by:  
  
Singo Consulting (Pty) Ltd

Prepared for:  
Mandlezile Industrial Supply (Pty) Ltd

### INTRODUCTION AND THE PURPOSE OF THIS DOCUMENT

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Consultant by **Mandlezile Industrial Supply (Pty) Ltd** to conduct Environmental Impact Assessment (EIA), Compile an Environmental Management Programme report (EMPr) and undertake Public Participation Process (PPP). This is done for processes of acquiring environmental authorization for the proposed Prospecting Right application on the **abovementioned properties**, situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province, (**DMRE Ref: MP 30/5/1/1/2/ 15846 PR**).

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

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

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

### PROJECT DESCRIPTION

Following initial Prospecting Right Application with **DMRE Ref: MP 30/5/1/1/2/ 15846 PR**, affecting portions 11, 17-23 and 25-37 of the farm **Moabsvelden 248 IR** has been submitted for the prospecting of Coal.

This Prospecting Area, as seen in figure 1 & 2 below, is situated Approximately 9.40 km east of Delmas town, covers parts of Thaba Chueu Mining (Pty) Ltd and between R555 and R50 National roads.

Prospecting activities will be undertaken over a period of five (5) years and are designed in phases, each phase conditional on the success of the previous phase. Both invasive and non-invasive methods will be implemented. Invasive are those activities which have footprint or cause harm (if not mitigated or managed properly) or those that have a physical impact on the environment, while non-invasive do not cause any harm or effects on the environment.

**Non-invasive:** Desktop study of the area has commenced, and this incorporates desktop geographical and geological mapping. This will be followed by detailed geochemical and geotechnical surveys. In turn, this is followed by detailed geophysical studies.

**Invasive:** A detailed drilling, sampling, assaying and mineralogical study will be carried out. Diamond method will be utilised to prospect in situ coal ore deposits. To ensure or minimise impacts on the receiving environment, All the activities will be guided by the project's BAR & EMPr.

<p><b>REGULATORY FRAMEWORK</b></p> <p>Therefore, EIA process to be undertaken will be conducted in accordance with the National Environmental Management Act (Act 38 of 1998) and Environmental Impact Assessment regulations as amended (April 2017).</p> <p>The activity is to prospect the existence and occurrence of Coal therefore, this will be conducted in accordance with Mineral and Petroleum Resources Development Act, (Act 28 of 2002). Other regulatory guidelines to be followed include: National Water Act, 1998 (Act 36 of 1998), National Air Quality Standards (GN 1210: 2009) and National Dust Control Regulations (GN 275: 2017).</p> <p>These all will accurately be followed to ensure that identified impacts are assessed and mitigated according to their significance so that the protection of the receiving environment and populations is met.</p> <p><b>BASIC AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESSES</b></p> <p>These are planning and decision-making tools used in identifying potential environmental, economic and social consequences of a proposed activity prior the commencement of the activity.</p> <p>These together with the public issues and concerns are to be identified sufficiently early so that they can be assessed and incorporated into the final reports when/if necessary.</p> <p>These tools are regarded crucial because they are utilized in order to demonstrate to the relevant stakeholders about the potential impacts, which in turn leads to the Prospecting application process being a success or declined.</p>	<p><b>PUBLIC PARTICIPATION PROCESS</b></p> <p>Public Participation remains a cornerstone of the Environmental Impact Assessment process. It ensures provision of relevant and enough information with openness and transparency. Public Participation process presents to I&amp;APs, an opportunity to understand what the project is about, and affords them an opportunity to make valuable contributions towards the EIA process.</p> <p>I&amp;AP can be any person, group of persons or organization interested in or affected by the proposed activity, and any organ of state that may have jurisdiction over any aspect of the activity.</p> <p>The key objective of PPP during the EIA process is to afford the I&amp;APs with an opportunity to comment and provide valuable inputs during the planning phase of the project.</p> <p>For this specific proposed project, IAPs will be given a period of 30 days to comment and raise issues/concerns with regards to this BID.</p> <p>Kindly keep the following dates:</p> <ul style="list-style-type: none"> <li>❖ Announcement of the Prospecting Right Application: <u>30<sup>th</sup> of April 2021</u></li> <li>❖ Stakeholder engagement and consultation; <u>Friday the 30<sup>th</sup> of April 2021 - Tuesday the 30<sup>th</sup> of May 2021</u></li> <li>❖ Review of Draft Basic Assessment Report (BAR) and Environmental Management Programme report (EMPr):</li> <li>❖ <u>31<sup>st</sup> of May 2021 to the 30<sup>th</sup> of June 2021.</u></li> <li>❖ Submission of the Final BAR &amp; EMPr to the DMRE: <u>15<sup>th</sup> of July 2021.</u></li> <li>❖ Electronic copies of the Draft BAR &amp; EMPr will be made available upon request from Singo Consulting (Pty) Ltd, using the detailed EAP'S contact's below, via emails; Dropbox link; Google drive; WeTransfer, etc.</li> </ul>
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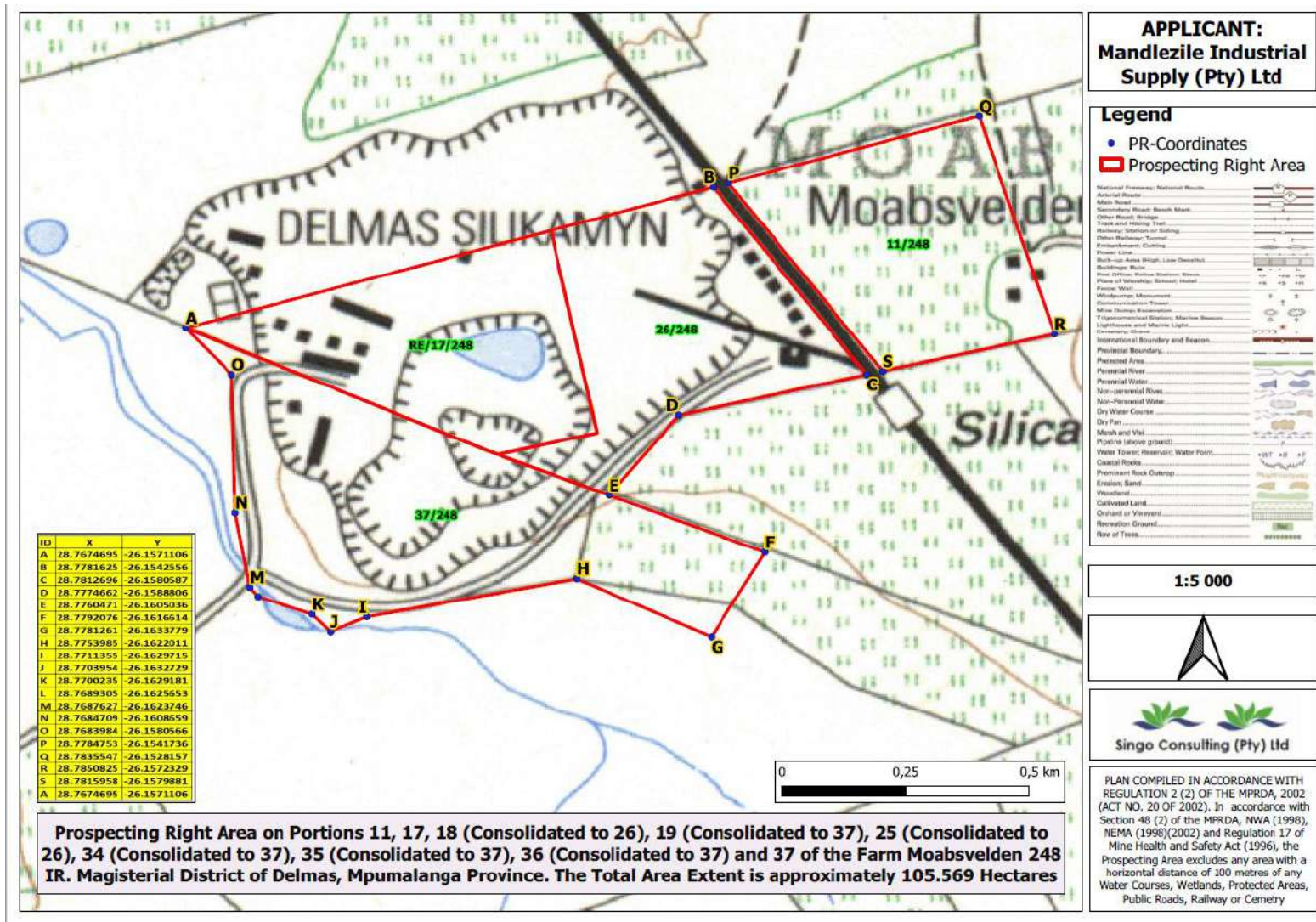





Figure 26: Regulation map of the proposed project area.


## Appendix 3: Landowner Engagement



MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...


 Khumbelo, Makhado <khumbelo@singoconsulting.co.za>  
 To 'sthewukele77@gmail.com'  
 Cc 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'
 
 Mon 2021/05/03 11:11  
 Reply Reply All Forward ...


 Background Information Document.pdf 765 KB
  Landowner Notification Letter.pdf 284 KB



MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...


 Khumbelo, Makhado <khumbelo@singoconsulting.co.za>  
 To 'abnermojalefa@gmail.com'  
 Cc 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'
 
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 Landowner Notification Letter.pdf 284 KB
  Background Information Document.pdf 766 KB

MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...


 Khumbelo, Makhado <khumbelo@singoconsulting.co.za>  
 To 'nellis.bester@invensil.co.za'  
 Cc 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'
 
 Mon 2021/05/03 12:32  
 Reply Reply All Forward ...

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  Background Information Document.pdf 765 KB

Dear Landowner/s

Receive warm greetings from Singo Consulting (Pty) Ltd.

Attached is the landowner Notification Letter and BID for the Prospecting Right Application of coal on your land. Please go through the attachments and kindly get back to us for further engagement.

Kind regards,



**Khumbelo, Makhado**  
 Geology Intern  
*BSc in Mining and Environmental Geology*

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 +27 13 692 0041  
 khumbelo@singoconsulting.co.za  
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**Singo Consulting (Pty) Ltd**

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 First Floor (South Block)  
 eMalaheni







## Appendix 4: Stakeholders Consultation & Correspondence



MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'MaryM@Dalrrd.gov.za'  
Cc 'kenneth@singoconsulting.co.za'; 'doreens@dalrrd.gov.za'; 'EllyT@Dalrrd.gov.za'; 'owen@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'  
Sat 2021/05/01 05:24


 Google earth view.pdf 3 MB    Reg 2.2.pdf 3 MB    Background Information Document.pdf 766 KB




PROSPECTING RIGHT APPLICATION FOR MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDE...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'sizwes@victorkhanyelm.gov.za'  
Cc 'selebalos@gmail.com'; 'Thabitha.matladi@victorkhanyelm.gov.za'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'  
Sat 2021/05/01 05:27


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MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'NevondoS@dws.gov.za'  
Cc 'Mbulaheni@dws.gov.za'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:28


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MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'TshifuT@eskom.co.za'  
Cc 'Wayleavesmou@eskom.co.za'; 'LudereTH@eskom.co.za'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:29


 Reg 2.2.pdf 3 MB    Google earth view.pdf 3 MB    Background Information Document.pdf 766 KB




MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'yuza.Chabalala@transnet.net'  
Cc 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:29

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MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'noncebos@labour.gov.za'  
Cc 'peter.molapo@labour.gov.za'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:30

 Reg 2.2.pdf 3 MB    Google earth view.pdf 3 MB    Background Information Document.pdf 766 KB

MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHA...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'phine@sanbi.org.za'  
Cc 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:30

 Reg 2.2.pdf 3 MB    Google earth view.pdf 3 MB    Background Information Document.pdf 766 KB

ANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHANY...

 Khumbelo, Makhado <khumbelo@singoconsulting.co.za> ↩ Reply   ↩ Reply All   → Forward   ⋮  
To 'Tramavhona@environment.gov.za'  
Cc 'emakhubele@environmental.gov.za'; 'pmatitla@environmental.gov.za'; 'slekota@environmental.gov.za'; 'bncube@environmental.gov.za'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'rudzani@singoconsulting.co.za'; 'tumelo@singoconsulting.co.za'  
Sat 2021/05/01 05:31

 Reg 2.2.pdf 3 MB    Google earth view.pdf 3 MB    Background Information Document.pdf 766 KB

Good Day

I hope this email finds you well.

Kindly note that Singo consulting Pty Ltd is currently conducting an Environmental Impact Assessment and Public Participation Process on behalf of Mandlezile Industrial Supply (Pty) Ltd.

Mandlezile Industrial Supply (Pty) Ltd has submitted an application for a Prospecting Right together with an Environmental Authorization to the Mpumalanga Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal on portions **11, 17-23 and 25-37** of the farm **MoabsvelDEN 248 IR** situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province, **(DMRE Ref: MP 30/5/1/1/2/ 15846 PR)**.

Please find the attached Google Earth View Map, Regulation 2(2) Map with coordinates and Background Information Document for the brief description of the proposed project.

I would like to hear more from you.

Kind regards,

**Khumbelo, Makhado**  
Geology Intern  
BSc in Mining and Environmental Geology

+27 71 321 2975  
+27 13 692 0041  
khumbelo@singoconsulting.co.za  
www.singoconsulting.co.za

**Singo Consulting (Pty) Ltd**  
09 Langa Crescent, Office No.16  
Corridor Hill Crossing  
First Floor (South Block)  
eMalaheni

LinkedIn Facebook WhatsApp Instagram

RE: MANDEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABSVELDEN 248 IR , SITUATED WITHIN VICTOR K...

Tshilisanani Tshifularo <TshifuT@eskom.co.za>  
To: Khumbelo, Makhado  
Cc: Amos Makua  
Wed 2021/05/12 07:18

You replied to this message on 2021/05/17 15:40.

Annex D.pdf (360 KB)  
Annex E.pdf (141 KB)  
LD\_INV\_E\_TT\_055\_2021.pdf (434 KB)  
LD\_INV\_E\_TT\_055\_2021MAP.pdf (1 MB)

Good day

Kindly receive the attached regarding your application with annex d and e to be signed before any work can commence.

Regards  
T Tshifularo  
Land and Rights Negotiations  
Land Development  
Eskom Distribution MOU  
Tell 013 693 2562  
Fax 086 605 3668

Protect yourself and others from Covid-19: Follow these steps  
Wear a 3 layered cloth mask  
Maintain 2m social distance at all times  
Wash hands frequently with soap or sanitize with alcohol based hand rub  
Eskom  
www.eskom.co.za





**Annex D - Letter of Consent**

Application to encroach on Eskom's right

With reference to your application dated 30 April 2021. WAYLEAVE APPLICATION: PROPOSED PROSPECTING RIGHT APPLICATION ON THE ABOVEMENTIONED PROPERTIES, SITUATED IN THE VICTOR KHANYE LOCAL MUNICIPALITY, UNDER DELMAS MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE, (DMRE REF: MP 30/5/1/1/2/ 15846 PR)..

Permission is hereby granted under the conditions listed on the attached document. Kindly indicate your acceptance of these conditions by initiating each page and signing in the appropriate area on the last page of the second copy and returning this copy to Eskom at the following address: [Tshifut@eskom.co.za](mailto:Tshifut@eskom.co.za) or [Wayleavesmou@eskom.co.za](mailto:Wayleavesmou@eskom.co.za) or [NekhahTT@eskom.co.za](mailto:NekhahTT@eskom.co.za)

Should you have any questions, please do not hesitate to contact (Tshilisanani Tshifularo) at either of the following:

TEL NUMBER            013 693 2562  
FAX NUMBER:            086 605 3668  
ADDRESS:                Eskom Park, Main Building, Room B 306,  
                                  PO Box 223 Witbank, 1035

Yours sincerely

SIGNATURE .....

NAME:                    Tshilisanani Tshifularo

TITLE:                    Miss

The Letter of Consent should contain two copies of the selected generic and specific conditions referring to the specific application received.

The second copy should have a clause at the bottom of the last page, as shown:

I, ..... (FULL NAMES AND SURNAME)

Herewith unconditionally accept the stipulations in the Letter of Consent pertaining to my co-use of Eskom servitude.

SIGNED AT..... THIS..... DAY OF..... (MONTH) (YEAR).....

.....

APPLICANT

WITNESS..... WITNESS.....

**Mpumalanga Operating Unit**  
Asset Creation  
Eskom Park  
P O Box 223 Emalahleni 1035 SA  
Tel +27 13 693 3716 Fax +27 86 661 7470 [www.eskom.co.za](http://www.eskom.co.za)  
Eskom Holdings SOC Limited Reg No 2002/015527/30



**Annex E - Indemnity**

To: Mpumalanga Operating Unit - Asset Creation

Cnr Water Meyer and Jellicoe Street

P O Box 223 Witbank 1035 SA

Tel +27 13 693 3764 [www.eskom.co.za](http://www.eskom.co.za)

In consideration of Eskom having agreed to us using the Eskom servitude area situated at

.....  
For purposes of..... And having regard that electricity is transmitted over the said servitude areas, we, the undersigned hereby agree and undertake:

1. To keep you indemnified and to hold you harmless against all loss, expense or damage from any cause arising including, but not limited to, death of or injury to any person or the loss of or damage to any property, which you may sustain as a result of having agreed to us using the abovementioned servitude areas or us not taking the required safety precautions with regard to the transmission of electricity and which are caused by our negligence or that of our employees contractors or agents.

2. To pay to you on demand whatever sum of loss or damages that is certified as such by an Eskom official, whose appointment and authority need not be proved, and such certificate shall be prima facie proof of the said loss or damages. We waive the benefits of the exceptions non causae debiti, non numeratae pecuniae and exclusion and any other exceptions which may be pleaded in respect of this indemnity.

3 If during the period of this indemnity any claim is made against Eskom by any third party for loss or damages from any cause arising out of our use of the abovementioned servitude area, including the taking of safety precautions by us or failure to do so, we will, immediately upon being notified thereof by you, at our own cost and expense undertake the defence of such claim in your name and for your benefit, subject to your instructions and input in such defence, Eskom's written consent shall be obtained before any settlement of compromise is agreed to or before any indulgence or waiver of rights are considered.

4 If any claim is instituted against us by any third party because of our presence and/or activities in the abovementioned servitude area we will immediately upon receipt or notification of such claim inform you accordingly and keep you informed until the matter is finalised.

5 This indemnity shall commence on the date of signature hereof and shall cease and terminate on the date that we stop using the abovementioned servitude areas subject thereto that it will still be of effect in losses, damages or claims arising before the termination date.

SIGNED AT..... THIS..... DAY OF..... (.....) (20...)

WITNESS

SIGNATURE OF AUTHORISED PERSON

Mpumalanga Operating Unit  
Asset Creation  
Cnr Water Meyer and Jellicoe Street  
P O Box 223 Witbank 1035 SA  
Tel +27 13 693 3764 [www.eskom.co.za](http://www.eskom.co.za)

Eskom Holdings SOC Ltd Reg No 2002/015527/30



Singo Consulting (pty) LTD  
Office no. 14 Corridor Hill Crossing  
09 Langa Crescent  
Emalahleni  
1035  
Email : admin@singoconsulting.co.za

Date:  
11 May 2021

Enquiries:T Tshifularo  
Tel: 013 693 2562  
Our Ref:LD-INV/E/TT/055/2021

Ref: MP 30/5/1/1/2/ 15846 PR).

Dear Sir/madam

**WAYLEAVE APPLICATION: PROPOSED PROSPECTING RIGHT APPLICATION ON THE ABOVEMENTIONED PROPERTIES, SITUATED IN THE VICTOR KHANYE LOCAL MUNICIPALITY, UNDER DELMAS MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE, (DMRE REF: MP 30/5/1/1/2/ 15846 PR).**

We refer to your application dated 30 April 2021.

This application affects the existing Eskom Distribution line,

**DRYDEN RURAL / DELMAS SILICA 1 11kV Feeder MV Overhead Line**

The approximate positions of these services are indicated on the attached sketches.

Eskom has no objection to the above mentioned application, provided the following conditions are adhered to:

- a) There is a 9 meters building and tree restriction on either side of the Centre lines of the 22kV ,and 15.5 meters for 88kV and 132kV power lines, which must be adhered to in all future development and or construction. Eskom's rights are protected by servitude. The approximate positions of these services are indicated on the attached sketches.
- b) Eskom's services and equipment must be acknowledged at all times and may not be tampered with or interfered with.
- b) No construction work may be executed closer than ten metres from any Eskom Distribution structure or structure-supporting mechanism.
- c) Natural ground level must be maintained within Eskom reserve areas and servitudes.
- d) All work within Eskom reserve areas and servitudes must be carried out in accordance with the requirements of the Occupational Health and Safety Act 85 of 1983 as amended.
- e)

Mpumalanga Operating Unit  
Asset Creation  
Eskom Park  
P O Box 223 Emalahleni 1035 SA  
Tel +27 13 693 3716 Fax +27 86 661 7470 www.eskom.co.za  
Eskom Holdings SOC Ltd Reg No 2002/015527/30

*TTN*



RE: MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, ON THE FARM MOABSVELDEN 248 IR , SITUATED WITHIN VICTOR K...



Khumbelo, Makhado <khumbelo@singoconsulting.co.za>

To: 'Tshilisanani Tshifularo'

Cc: 'Amos Makuja'; 'kenneth@singoconsulting.co.za'; 'owen@singoconsulting.co.za'; 'Rudzani Shonisani'

Reply Reply All Forward

Fri 2021/05/21 15:55



Good day

Kindly receive the signed annex d and e.

Kind regards,

**Khumbelo, Makhado**  
 Geology Intern  
*BSc in Mining and Environmental Geology*

+27 71 321 2975  
 +27 13 692 0041  
 khumbelo@singoconsulting.co.za  
 www.singoconsulting.co.za

**Singo Consulting (Pty) Ltd**

09 Langa Crescent, Office No.16  
 Corridor Hill Crossing  
 First Floor (South Block)  
 eMalaheni

LinkedIn Facebook WhatsApp Instagram



**Annex E - Indemnity**

**To: Mpumalanga Operating Unit - Asset Creation**

**Cnr Water Meyer and Jellicoe Street**

**P O Box 223 Witbank 1035 SA**

**Tel +27 13 693 3764 [www.eskom.co.za](http://www.eskom.co.za)**

In consideration of Eskom having agreed to us using the Eskom servitude area situated at Moabsvelden 248 IR, Magisterial district of Delmas

For purposes of Prospecting Right And having regard that electricity is transmitted over the said servitude areas, we, the undersigned hereby agree and undertake:

1. To keep you indemnified and to hold you harmless against all loss, expense or damage from any cause arising including, but not limited to, death of or injury to any person or the loss of or damage to any property, which you may sustain as a result of having agreed to us using the abovementioned servitude areas or us not taking the required safety precautions with regard to the transmission of electricity and which are caused by our negligence or that of our employees contractors or agents.

2. To pay to you on demand whatever sum of loss or damages that is certified as such by an Eskom official, whose appointment and authority need not be proved, and such certificate shall be prima facie proof of the said loss or damages. We waive the benefits of the exceptions non causae debiti, non numeratae pecuniae and exclusion and any other exceptions which may be pleaded in respect of this indemnity.

3 If during the period of this indemnity any claim is made against Eskom by any third party for loss or damages from any cause arising out of our use of the abovementioned servitude area, including the taking of safety precautions by us or failure to do so, we will, immediately upon being notified thereof by you, at our own cost and expense undertake the defence of such claim in your name and for your benefit, subject to your instructions and input in such defence, Eskom's written consent shall be obtained before any settlement of compromise is agreed to or before any indulgence or waiver of rights are considered.

4 If any claim is instituted against us by any third party because of our presence and/or activities in the abovementioned servitude area we will immediately upon receipt or notification of such claim inform you accordingly and keep you informed until the matter is finalised.

5 This indemnity shall commence on the date of signature hereof and shall cease and terminate on the date that we stop using the abovementioned servitude areas subject thereto that it will still be of effect in losses, damages or claims arising before the termination date.

SIGNED AT WITBANK THIS 14 DAY OF MAY (.....) (2021) 2021

[Signature]

WITNESS                      SIGNATURE OF AUTHORISED PERSON

Mpumalanga Operating Unit  
Asset Creation  
Cnr Water Meyer and Jellicoe Street  
P O Box 223 Witbank 1035 SA  
Tel +27 13 693 3764 [www.eskom.co.za](http://www.eskom.co.za)

Eskom Holdings SOC Ltd Reg No 2002/015527/30





**Annex D - Letter of Consent**

Application to encroach on Eskom's right

With reference to your application dated **30 April 2021. WAYLEAVE APPLICATION: PROPOSED PROSPECTING RIGHT APPLICATION ON THE ABOVEMENTIONED PROPERTIES, SITUATED IN THE VICTOR KHANYE LOCAL MUNICIPALITY, UNDER DELMAS MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE, (DMRE REF: MP 30/5/1/1/2/ 15846 PR)..**

Permission is hereby granted under the conditions listed on the attached document. Kindly indicate your acceptance of these conditions by initiating each page and signing in the appropriate area on the last page of the second copy and returning this copy to Eskom at the following address: [Tshifut@eskom.co.za](mailto:Tshifut@eskom.co.za) or [Wayleavesmou@eskom.co.za](mailto:Wayleavesmou@eskom.co.za) or [NekhahTT@eskom.co.za](mailto:NekhahTT@eskom.co.za)

Should you have any questions, please do not hesitate to contact (**Tshilisanani Tshifularo**) at either of the following:

TEL NUMBER           **013 693 2562**  
FAX NUMBER:         **086 605 3668**  
ADDRESS:             **Eskom Park, Main Building, Room B 306,**  
                              **PO Box 223 Witbank, 1035**

Yours sincerely

SIGNATURE .....

NAME:                 **Tshilisanani Tshifularo**

TITLE:                **Miss**

The Letter of Consent should contain two copies of the selected generic and specific conditions referring to the specific application received.

The second copy should have a clause at the bottom of the last page, as shown:

I, MAXWELL M MURGENI..... (FULL NAMES AND SURNAME)

Herewith unconditionally accept the stipulations in the Letter of Consent pertaining to my co-use of Eskom servitude.

SIGNED AT WITBANK THIS 14 DAY OF MAY (MONTH) (YEAR) 2021.....

[Signature].....

APPLICANT [Signature]

WITNESS..... WITNESS [Signature]

**Mpumalanga Operating Unit**  
Asset Creation  
Eskom Park  
P O Box 223 Emalaheni 1035 SA  
Tel +27 13 693 3716 Fax +27 86 661 7470 [www.eskom.co.za](http://www.eskom.co.za)  
Eskom Holdings SOC Limited Reg No 2002/015527/30

RE: MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, PROSPECTING APPLICATION ON THE FARM MOABVELDEN 248 IR ...



Vusi Khoza <Vusi.Khoza@dalrrd.gov.za>

To Khumbelo, Makhado

Cc owen@singoconsulting.co.za; kenneth@singoconsulting.co.za; tumelo@singoconsulting.co.za; 'Rudzani Shonisani'; Petruscha Lindoor; Mzothule Ngema; Themba Mkhonto; Lazarus Masuku; Thandeka Dhlamini

Reply Reply All Forward ...

Fri 2021/05/14 14:49

You replied to this message on 2021/05/14 15:56.



Good Day

Kindly find the attached letter for your information.

Regards

Vusi Khoza

**From:** Khumbelo, Makhado <khumbelo@singoconsulting.co.za>

**Sent:** 07 May 2021 09:57 AM

**To:** Themba Mkhonto <Themba.Mkhonto@dalrrd.gov.za>; Petruscha Lindoor <Petruscha.Lindoor@dalrrd.gov.za>

**Cc:** Vusi Khoza <Vusi.Khoza@dalrrd.gov.za>; owen@singoconsulting.co.za; kenneth@singoconsulting.co.za; tumelo@singoconsulting.co.za; 'Rudzani Shonisani' <rudzani@singoconsulting.co.za>

**Subject:** MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, PROSPECTING APPLICATION ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHANYE LOCAL MUNICIPALITY. DMRE REF: MP 30/5/1/1/2/ 15846 PR

RE: MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, PROSPECTING APPLICATION ON THE FARM MOABVELDEN 248 IR ...



Khumbelo, Makhado <khumbelo@singoconsulting.co.za>

To 'Vusi Khoza'

Cc: 'owen@singoconsulting.co.za'; 'kenneth@singoconsulting.co.za'; 'Rudzani Shonisani'; 'tumelo@singoconsulting.co.za'

Reply Reply All Forward ...

Fri 2021/05/14 15:57

Received, thanks.

Kind regards,



**From:** Vusi Khoza <Vusi.Khoza@dalrrd.gov.za>

**Sent:** Friday, 14 May 2021 14:49

**To:** Khumbelo, Makhado <khumbelo@singoconsulting.co.za>

**Cc:** owen@singoconsulting.co.za; kenneth@singoconsulting.co.za; tumelo@singoconsulting.co.za; 'Rudzani Shonisani' <rudzani@singoconsulting.co.za>; Petruscha Lindoor <Petruscha.Lindoor@dalrrd.gov.za>; Mzothule Ngema <Mzothule.Ngema@dalrrd.gov.za>; Themba Mkhonto <Themba.Mkhonto@dalrrd.gov.za>; Lazarus Masuku <Lazarus.Masuku@dalrrd.gov.za>; Thandeka Dhlamini <Thandeka.Dhlamini@dalrrd.gov.za>

**Subject:** RE: MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD, PROSPECTING APPLICATION ON THE FARM MOABVELDEN 248 IR , SITUATED WITHIN VICTOR KHANYE LOCAL MUNICIPALITY. DMRE REF: MP 30/5/1/1/2/ 15846 PR

Good Day

Kindly find the attached letter for your information.

Regards

Vusi Khoza



OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: MPUMALANGA  
18 Bell Street, Bell Tower building, Restitution House, Nelspruit | Private Bag X11330, Nelspruit, 1200  
Tel: (013) 752 4054 | Fax: (013) 752 5410

---

Enquiries: LV Masuku  
Date: 11/05/2021

**SINGOCONSULTING( PTY) LTD**

ATTENTION: KHUMBELO MAKHADO

E-MAIL: KHUMBELO@SINGOCONSULTING.CO.ZA

**LAND CLAIM IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 AND AS AMENDED IN TERMS OF THE RESTITUTION OF THE LAND RIGHTS AMENDMENT ACT 2014 (ACT NO 15 OF 2014).**

REFERENCE NUMBER: R/6/143/288/19023 & R/6/143/288/24123

PROPERTY DESCRIPTION OF THE CLAIMED LAND: Portions 11, 17-23 and 25-37 of the farm Moabsvelden 248 IR

We refer to the above claim that was lodged with the Commission on Restitution of Land Rights. Note that the lodgement of land claim is based on the Restitution of Land Rights Act, Act no 22 of 1994 and the Restitution of Land Rights Amendment Act, (Act no 15 of 2014).

**Please note that there are no land claims lodged before 1998 re-lodgement period, however there are new claims lodged.** The Commission is empowered to investigate all land claims and where applicable issues a Government Gazette to interested and affected parties if such land claims has been approved as valid claims. The above claims were lodged in terms of the Restitution of Land Rights Amendment Act, 2014 (Act No 15 of 2014) ("the Amendment Act") which, amongst others, reopened the lodgement of claims for a period of five years.

The validity of the Amendment Act was challenged in the Constitutional Court. The Constitutional Court found the Amendment Act to be invalid because of the failure of Parliament to facilitate public involvement as required by the Constitution. The Amendment Act ceased to be law on 28 July 2016 and the Commission is no longer allowed to accept lodgement of new claims from that date.

The Constitutional Court ordered that the claims that were lodged between 1 July 2014 and 27 July 2016 are validly lodged, but it interdicted the Commission from processing those claims until the Commission has finalised the claims lodged by 31 December 1998 or until Parliament passes a new law providing for the re-opening of lodgement of land claims. Parliament was given until 27 July 2018 to pass such a law.





The Commission will therefore not be processing these new claims until it finishes claims lodged by 31 December 1998 or until Parliament passes a new law providing for re-opening of lodgement of claims.

We apologise for the inconvenience.

Please quote the claim reference number in all correspondence with the Commission.

Yours sincerely,

**MR E.S. NKOSI**  
**CHIEF DIRECTOR**  
**OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER**  
DATE: 12/05/21

Emailing: Khumbelo Singo comments



Mary Mogale <MaryM@dalrrd.gov.za>  
To: khumbelo@singoconsulting.co.za

ℹ You replied to this message on 2021/05/31 11:27.



Reply Reply All Forward ...

Wed 2021/05/26 13:11

Good day

Kindly find attached comments. Sorry for sending late our scan was not working.

Regards

Mary Dorcus Mogale  
Resource Auditor  
Land and Soil Management  
Department of Agriculture Land Reform and Rural Development  
27 Brown Street  
Old Permanent Building  
2nd Floor, Room B5  
Nelspruit

Tel: 013 754 0728  
Cell: 071643 4754  
Work: 067 418 8249  
Web: www.dalrrd.gov.za  
E-mail: MaryM@dalrrd.gov.za



**Office No:** 16, First Floor (South Block)  
 Corridor Hill Crossing, 09 Langa Crescent,  
 Corridor Hill, emakohleni  
**Tel:** +27 71 321 2975/ +27 13 692 0041  
**Fax:** +27 86 5144 103  
**Email:** khumbelo@singoconsulting.co.za  
 : admin@singoconsulting.co.za

**REGISTRATION & COMMENT SHEET**

Prospecting Right Application on portions 11, 17-23 and 25-37 of the Farm Moabsvelden 248 IR by  
 Mandlezile Industrial Supply (Pty) Ltd

Attention: Khumbelo Makhado

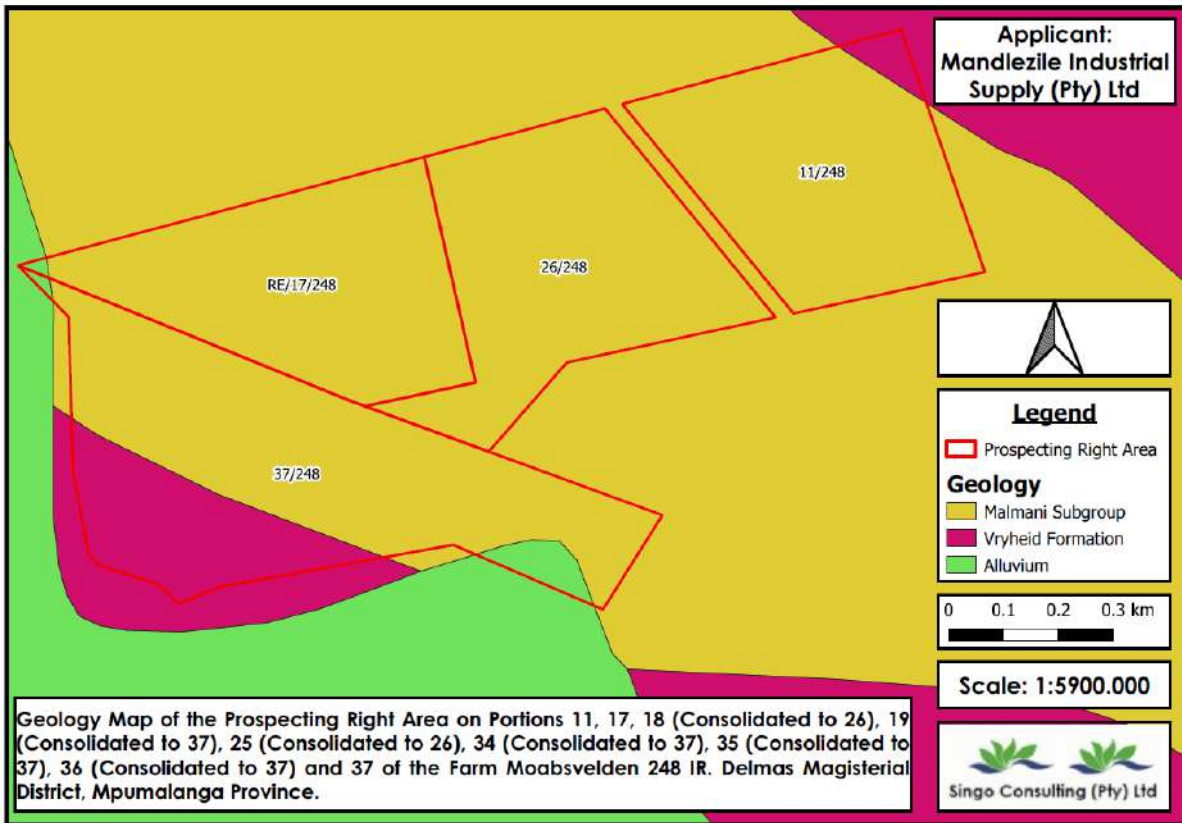
Email: khumbelo@singoconsulting.co.za

Title	MS	Name	MARY DORIS	Surname	MOGAI
Company	DALRPP				
Designation	Resource Auditor				
Address	P O Box 8806, MEISPRUIT, 1200				
Tel No.	012 754 0728	Fax No.			
E-mail	MaryME.davis@gov.za	Cell No.	067 417 8248	0716431474	
I would like to receive my notifications by (mark with "X"):		Post	<input type="checkbox"/>	E-mail	<input checked="" type="checkbox"/>
		Fax	<input type="checkbox"/>		
<b>Please indicate why you would have an interest in the above-mentioned project.</b>					
I am a Resource Auditor from DALRPP who enforces CARA ACT (Act 43 of 1983) that enhances the sustainability of natural resources.					
<b>Please provide your comments and questions here:</b>					
- Detailed Soil Studies must be included on the EMPR.					
- weeds and invader management plan must be included on the EMPR					
- Current land use must be included on the EMPR.					
Please feel free to attach a separate document					
<b>Please add any person you think may be interested and affected parties:</b>					
Full name			Company		
Address					
E-mail			Contact No.		

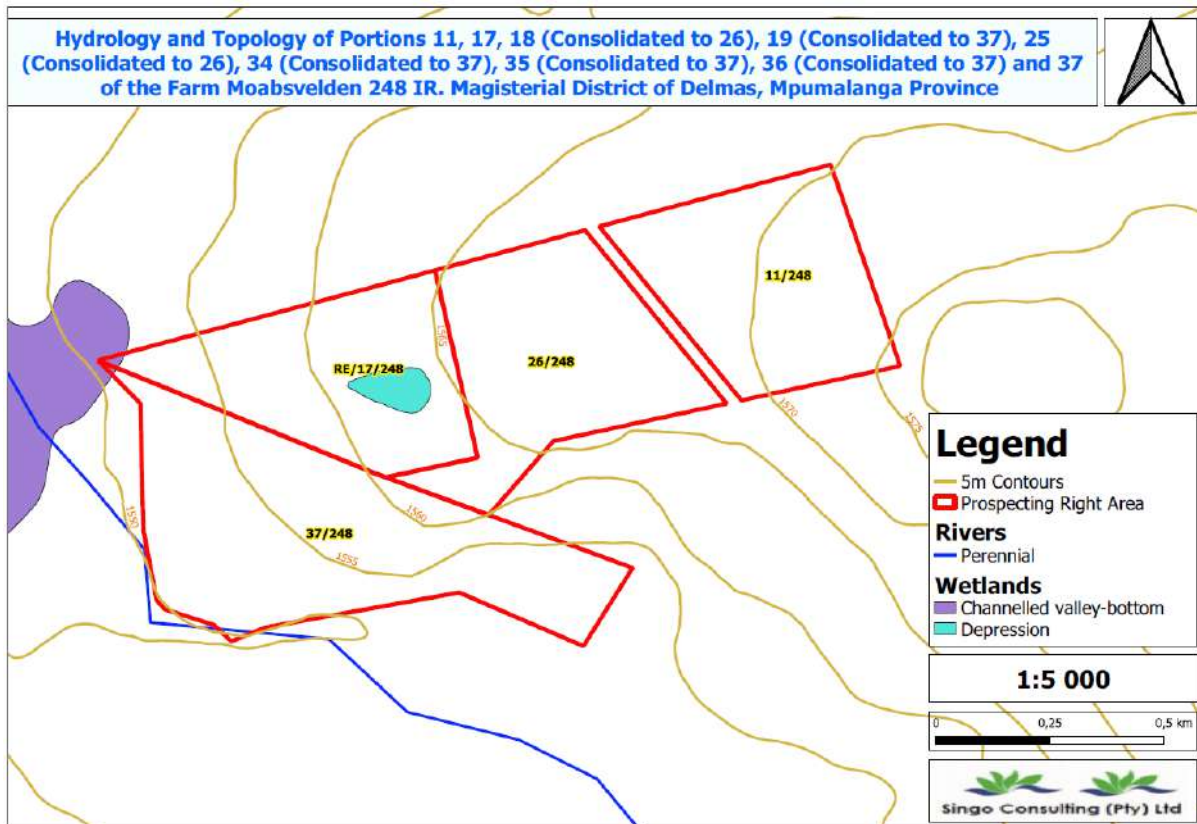
- Sensitive areas like wetlands must not be disturbed.  
 - Land capacity class and grazing capacity index must be included on the EMPR.



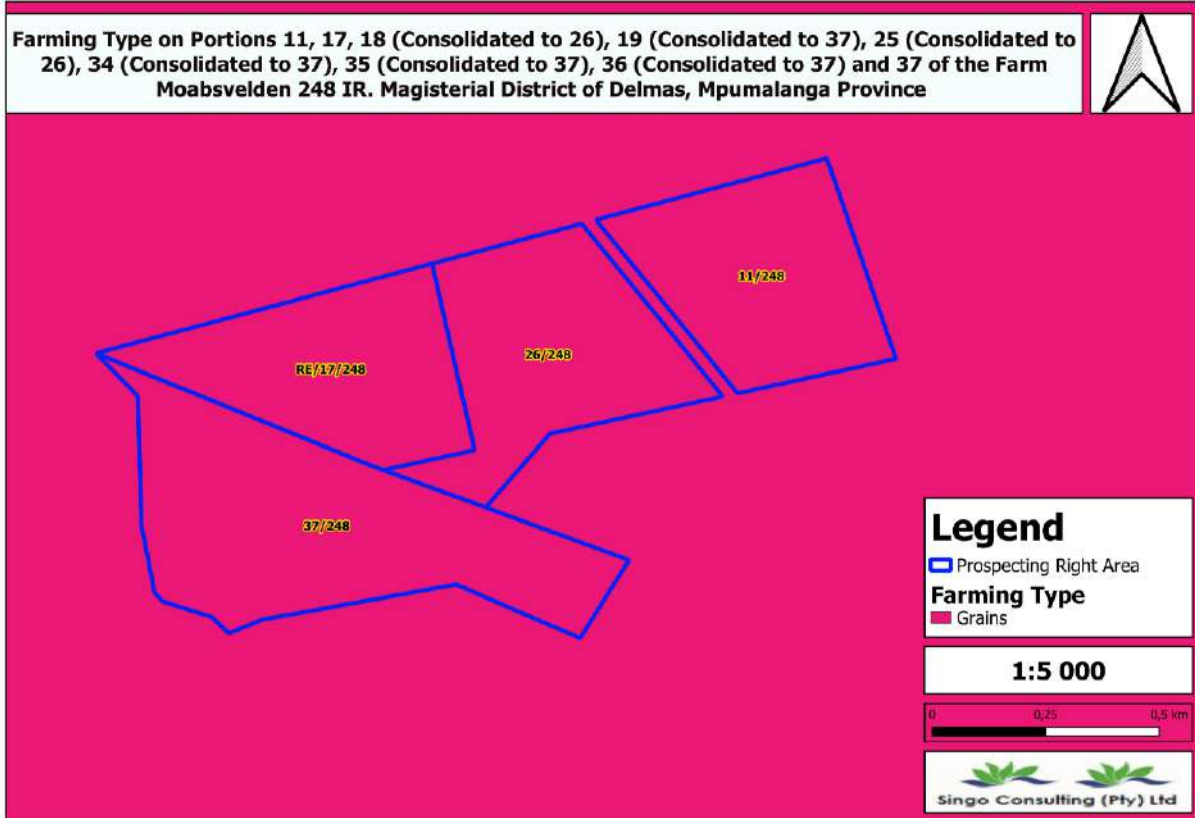




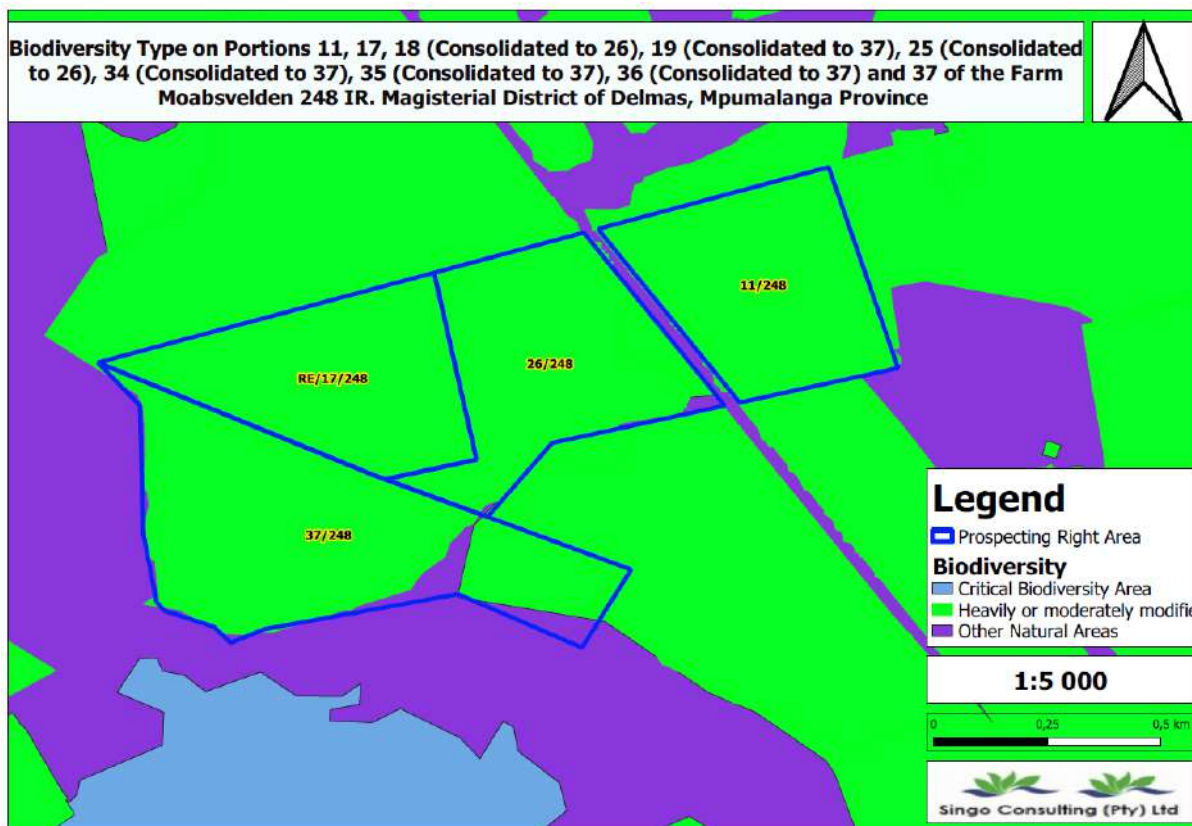
Geology map of the proposed area



Hydrology and Topology map of the proposed area

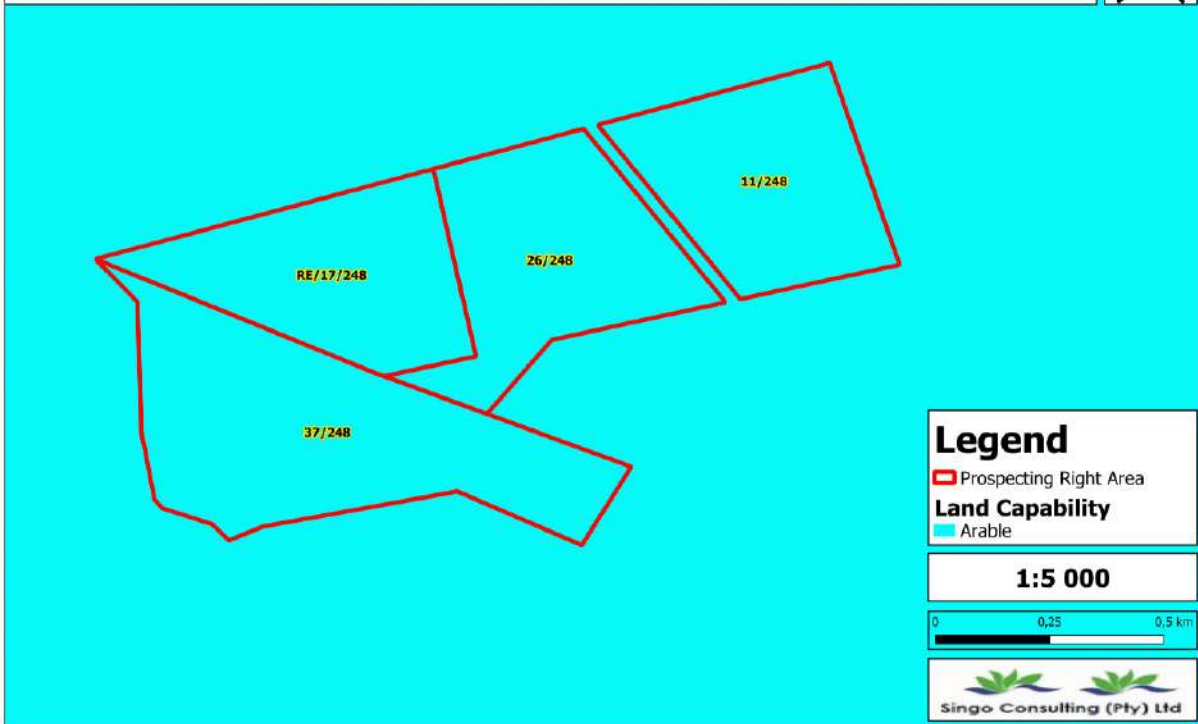


Farming type on the proposed area.



Biodiversity type map of the proposed area

Land Capability on Portions 11, 17, 18 (Consolidated to 26), 19 (Consolidated to 37), 25 (Consolidated to 26), 34 (Consolidated to 37), 35 (Consolidated to 37), 36 (Consolidated to 37) and 37 of the Farm Moabsvelden 248 IR. Magisterial District of Delmas, Mpumalanga Province



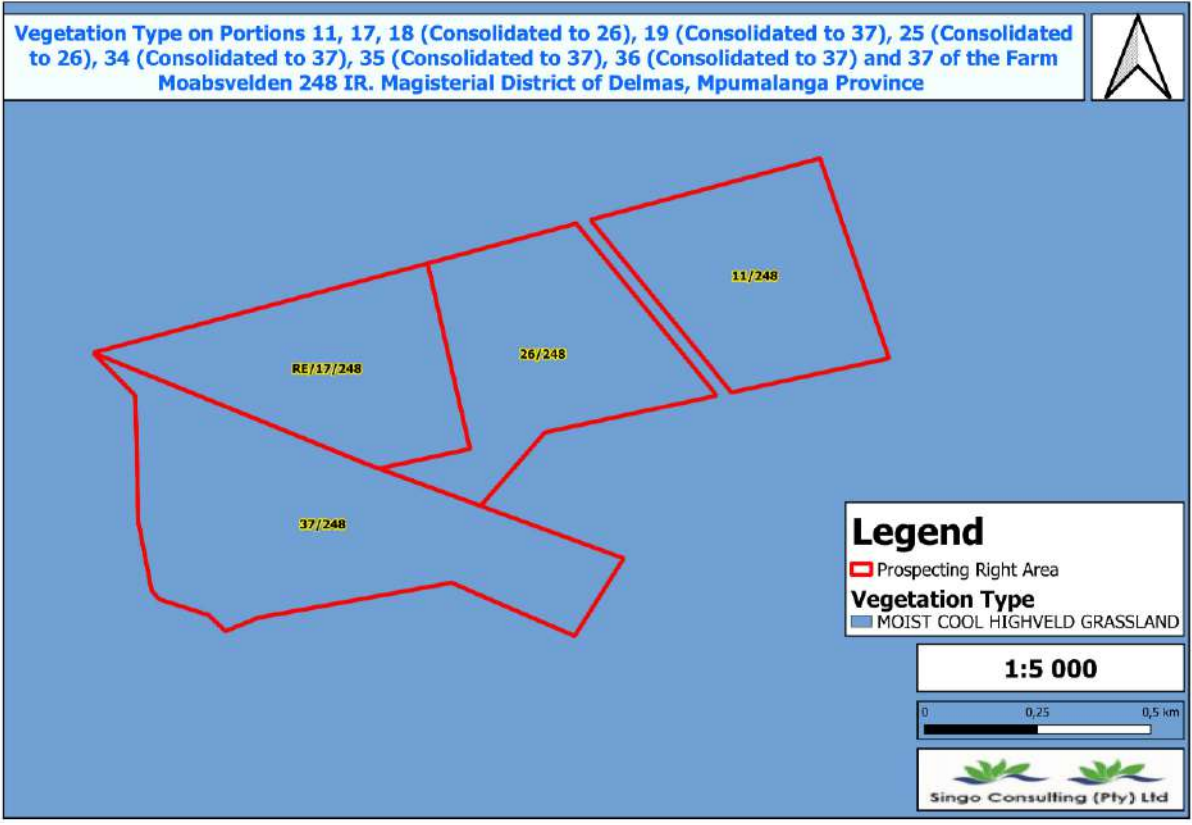
Land capability map of the proposed area

Soil Classes on Portions 11, 17, 18 (Consolidated to 26), 19 (Consolidated to 37), 25 (Consolidated to 26), 34 (Consolidated to 37), 35 (Consolidated to 37), 36 (Consolidated to 37) and 37 of the Farm Moabsvelden 248 IR. Magisterial District of Delmas, Mpumalanga Province

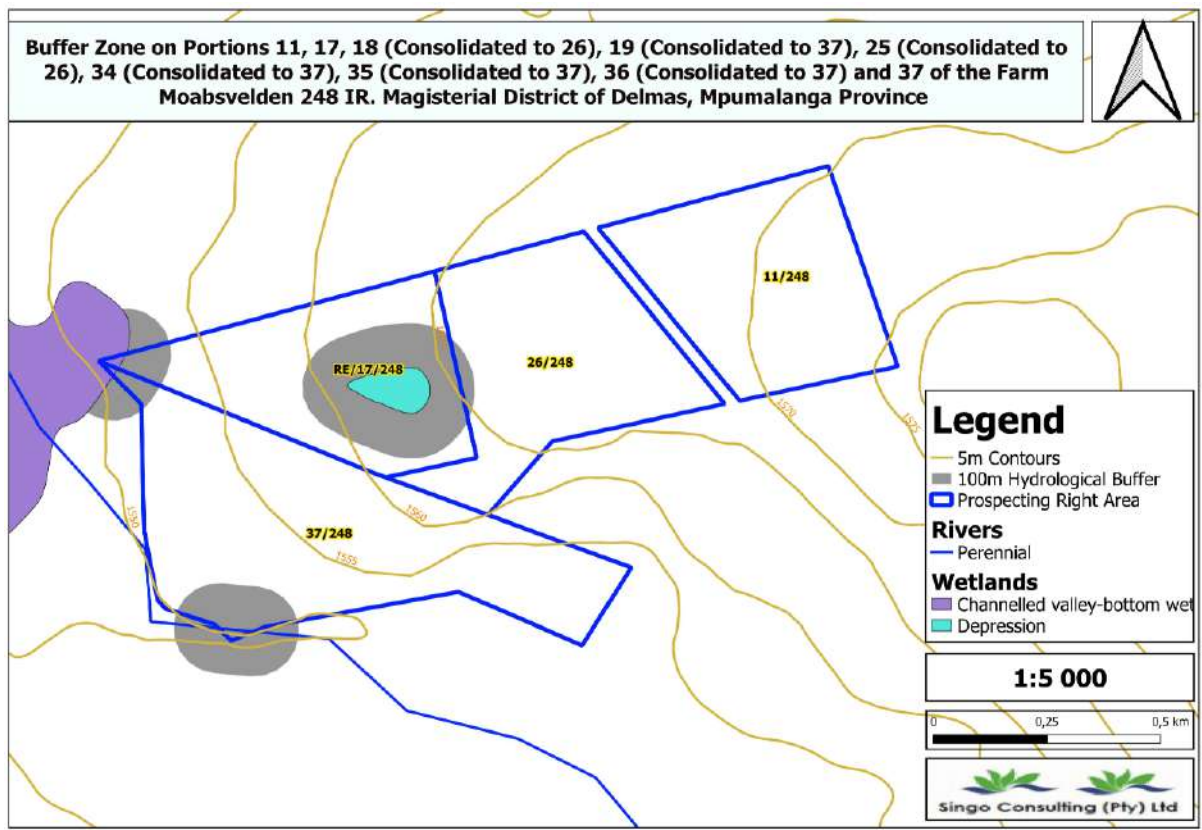


Soil classes map of the proposed area





Vegetation type map of the proposed area



Buffer zone map of the proposed area

## Appendix 6: Proof of Site Assessment and Placement of Site Notices



## **Appendix 7: Specialist Studies**



# PROSPECTING RIGHT HYDROGEOLOGICAL STUDY

HYDROGEOLOGICAL STUDY FOR A PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR MANDLEZILE INDUSTRIAL SUPPLY (PTY) LTD ON PORTIONS 11, 17-23 AND 23-37 OF THE FARM MOABSVELDEN 248 IR, SITUATED IN THE VICTOR KHANYE LOCAL MUNICIPALITY UNDER DELMAS MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE, SOUTH AFRICA.

PREPARED FOR

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DMRE REF: MP 30/5/1/1/2/ 15846 PR).

**2021**

## Project Information

Report Type      Prospecting Right Hydrogeological Report

Project Title:    Hydrogeological Report for Prospecting Right Application that has been Lodged for Coal located on the Farm Moabsvelden 248 IR situated in the Victor Khanye local Municipality under Delmas Magisterial District, Mpumalanga Province, South Africa.

Client             Mandlezile Industrial Supply (Pty) Ltd

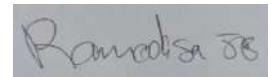
Site Location    Delmas, Mpumalanga Province, South Africa

Version            1

Date                14 May 2021

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Final Review and Approval    Dr. Kenneth Singo (Principal Consultant of Singo Consulting (Pty) Ltd) South African Council for Natural Scientific Professions (SACNASP: Earth Science Reg. No: 400069/16),



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Application of Coal

Report Credentials

**Disclaimer:**

**The results and conclusions of this report are limited to the Scope of Work agreed between Singo Consulting (Pty) Ltd and Mandlezile Industrial Supply (Pty) Ltd for whom this investigation has been conducted. All notions made and all knowledge contained within this report and its attachments hinge on the convenience to and dependability of relevant information, including maps, previous reports and word-of-mouth, from the Client and affected parties. All work conducted by Singo Consulting (Pty) Ltd is done in accordance with the Singo Consulting (Pty) Ltd Standard Operating Procedures.**

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## EXECUTIVE SUMMARY

Singo Consulting (Pty) Ltd was appointed by Mandlezile Industrial Supply (Pty) Ltd as an independent consulting company, to conduct a hydrogeological study. The hydrogeological study is being conducted in support of a prospecting right application for Mandlezile Industrial Supply (Pty) Ltd located in the Victor Khanye local Municipality under Delmas Magisterial District, Mpumalanga Province, South Africa.

## OUTCOMES OF THE INVESTIGATION

- Drilling activity will not be conducted near water resources.
- And all the wetlands, perennial and non-perennial rivers will be buffered, and a 100m buffer will apply.
- The topography of the project area is situated in a gentle topographical range of 1550 - 1575 mamsl.
- Extreme caution will be taken during prospecting, washing of any mechanical equipment or vehicles will be allowed near the water resources.
- Water samples will be taken from selected the exploration boreholes by using approved sampling techniques and adhering to recognized sampling procedures. Samples should be analysed for both organic as well as inorganic pollutants, as mining activity often led to hydrocarbon spills in the form of diesel and oil.
- The core logs of exploration boreholes will be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- After prospecting, rehabilitation of the disturbed area will take place.
- The numerical model will be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.



**Table of Contents**

EXECUTIVE SUMMARY ..... 4

1 INTRODUCTION ..... 7

    1.1 Background information ..... 7

    1.2 Project location ..... 8

2 GEOHYDROLOGICAL SETTING ..... 8

    2.1 Topography and drainage ..... 8

    2.2 Climate ..... 11

3 SCOPE OF WORK ..... 13

4 METHODOLOGY ..... 14

    4.1 Desktop study ..... 14

    4.2 Hydrocensus ..... 14

    4.3 Drilling and siting of boreholes ..... 15

    4.4 Groundwater modelling ..... 15

    4.5 Groundwater availability assessment ..... 15

5 BASELINE INFORMATION ..... 16

    5.1 Geology ..... 16

        5.1.1 Regional geology ..... 16

        5.1.2 Local geology ..... 19

    5.3 Hydrogeology ..... 23

    5.4 Potential contaminants ..... 24

6 AQUIFER CLASSIFICATION ..... 25

7 GROUNDWATER MODELLING ..... 26

    7.1 Software model choice ..... 26

    7.2 Model set-up and boundaries ..... 27

    7.3 Groundwater elevation and gradient ..... 27

    7.4 Groundwater sources and sinks ..... 27

    7.5 Model results ..... 28

        7.5.1 Groundwater flow model ..... 28

8 GEOHYDROLOGICAL IMPACTS ..... 29

9 CONCLUSIONS AND RECOMMENDATIONS ..... 34

10 REFERENCES ..... 35



### List of Figures

Figure 1: Locality map of the proposed project. ....	8
Figure 2: Topology within the project area. ....	9
Figure 3: Hydrology and topology of the prospecting right area. ....	10
Figure 4: Hydrological buffer of the prospecting right area. ....	11
Figure 5: Annual rainfall map. ....	12
Figure 6: Annual temperature map. ....	13
Figure 7: Southern African geological basins ....	19
Figure 6: The stratigraphy of the Transvaal Supergroup and Karoo Supergroup. ....	21
Figure 9: Geology of the prospecting right area ....	23
Figure 10: Examples of Absorbent spill kit to be used. ....	24
Figure 11: Aquifer classification of South Africa. ....	25
Figure 12: Groundwater flow model. ....	29

### List of Tables

Table 1: Aquifer characterisation ....	25
Table 2: Possible source, pathways and receptors ....	27
Table 3: Groundwater impact assessment ....	31



## 1 INTRODUCTION

### 1.1 Background information

Singo Consulting (Pty) was appointed by Mandlezile Industrial Supply (Pty) Ltd to conduct a hydrogeological study for the Prospecting Right Application which has been submitted for the prospecting of Coal on the Farm Moabsvelden 248 IR Ltd located in the Victor Khanye local Municipality under Delmas Magisterial District, Mpumalanga Province, South Africa.

This report is not planned to be an intense description of the proposed project; however, it is conducted as a specialist provisional geohydrological study to evaluate the geohydrological impact the prospecting activity has on the environment.



## 1.2 Project location

A locality map created by QGIS software illustrates detailed and comprehensive information regarding the surrounding settlements and infrastructure of the proposed project area. The proposed project area is on the Farm Moabsvelden 248 IR, located approximately 9.40 km East of Delmas town. The proposed area covers parts of Thaba Chueu Mining (Pty) Ltd and between R555 and R50 national roads.

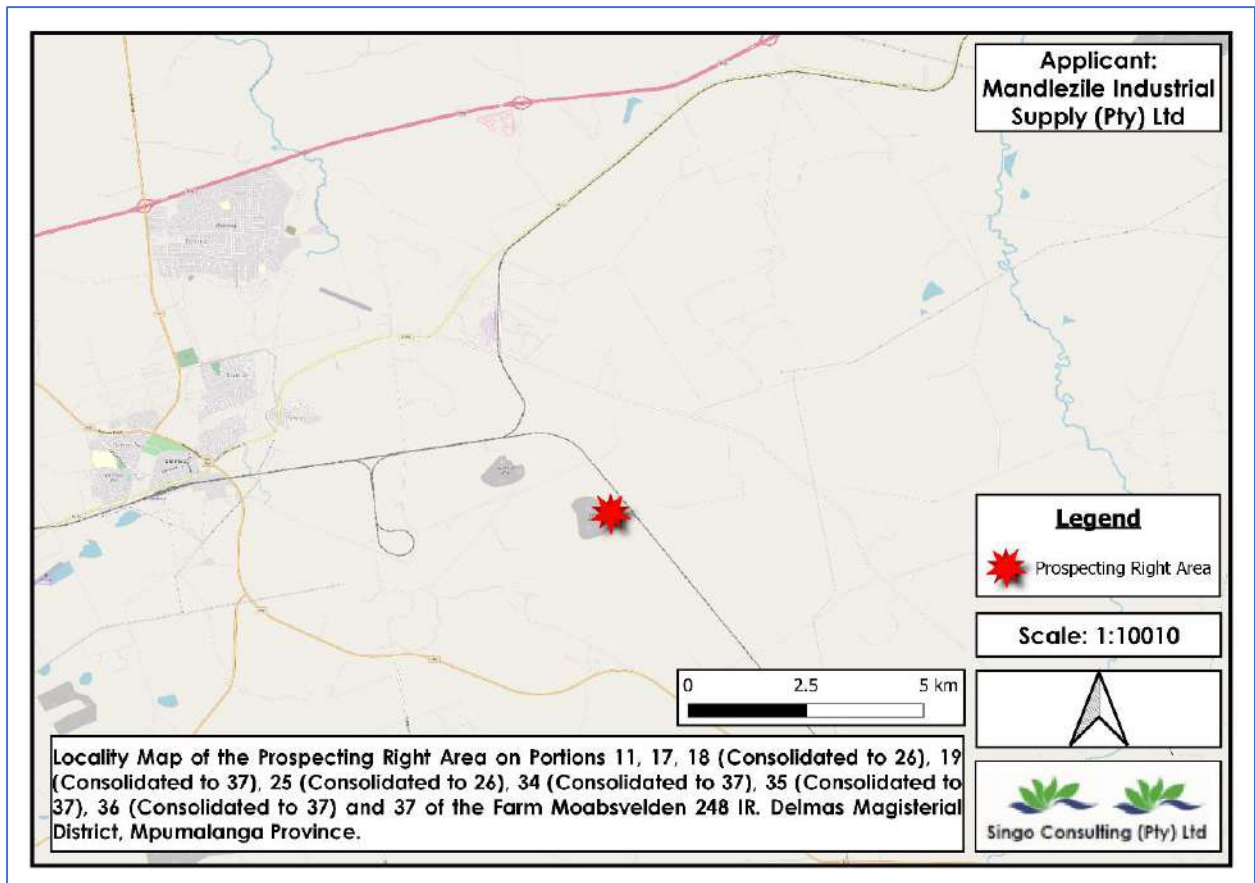


Figure 1: Locality map of the proposed project.

## 2 GEOHYDROLOGICAL SETTING.

### 2.1 Topography and drainage

Topography is the study of the shape and features of land surfaces. The topography of an area could refer to the surface shapes and features themselves, or a description (especially their depiction in maps). Topography is a field of geoscience and planetary science and is concerned with local detail in general, including not only relief but also natural and artificial features, and even local history and culture.



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Application of Coal

The proposed prospecting area is characterized by gentle slopes surfaces and the map shows no signs of mountains or hills near or within the project area. This can be observed on the topography map attached below. The flow of water during rainy seasons flows from the area of high elevation to the area of low elevation as it is indicated by contour lines.

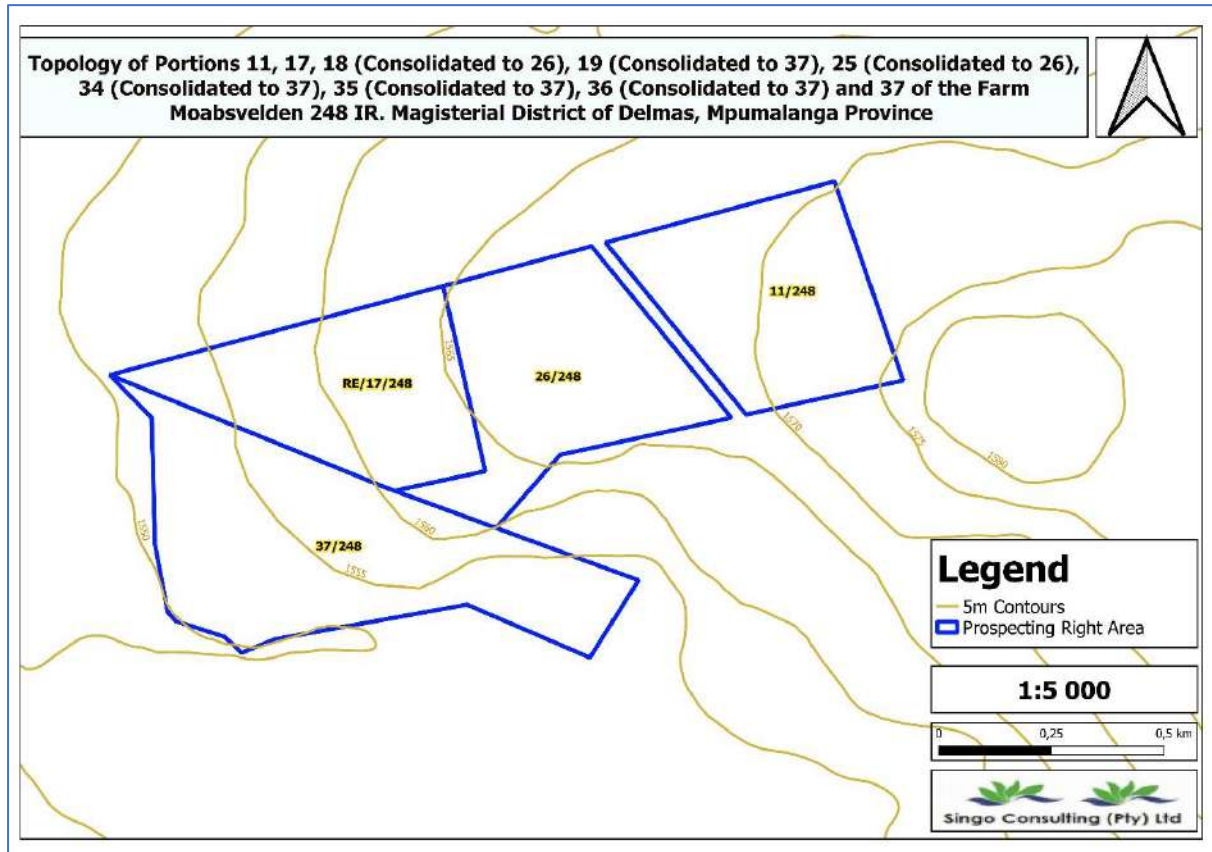





Figure 2: Topology within the project area.

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. The hydrology map, illustrates that the following water bodies exists within and nearby the project area:

-  Perennial river
-  Channelled valley-bottom wetland
-  Depression

These are important natural water resources that should not be disturbed by anthropogenic activities. For this project where prospecting right poses a risk on them, there will be measures and guidelines put in place that will protect the water resources in this area to ensure optimal conservation of water. The prospecting right will take place during dry seasons where the





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Application of Coal

water percentages are exceptionally low in the water bodies. Drilling activity will not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site. A 100m buffer will apply around the water bodies present within the prospecting right area. Figure 4 below illustrates the 100m buffer map.

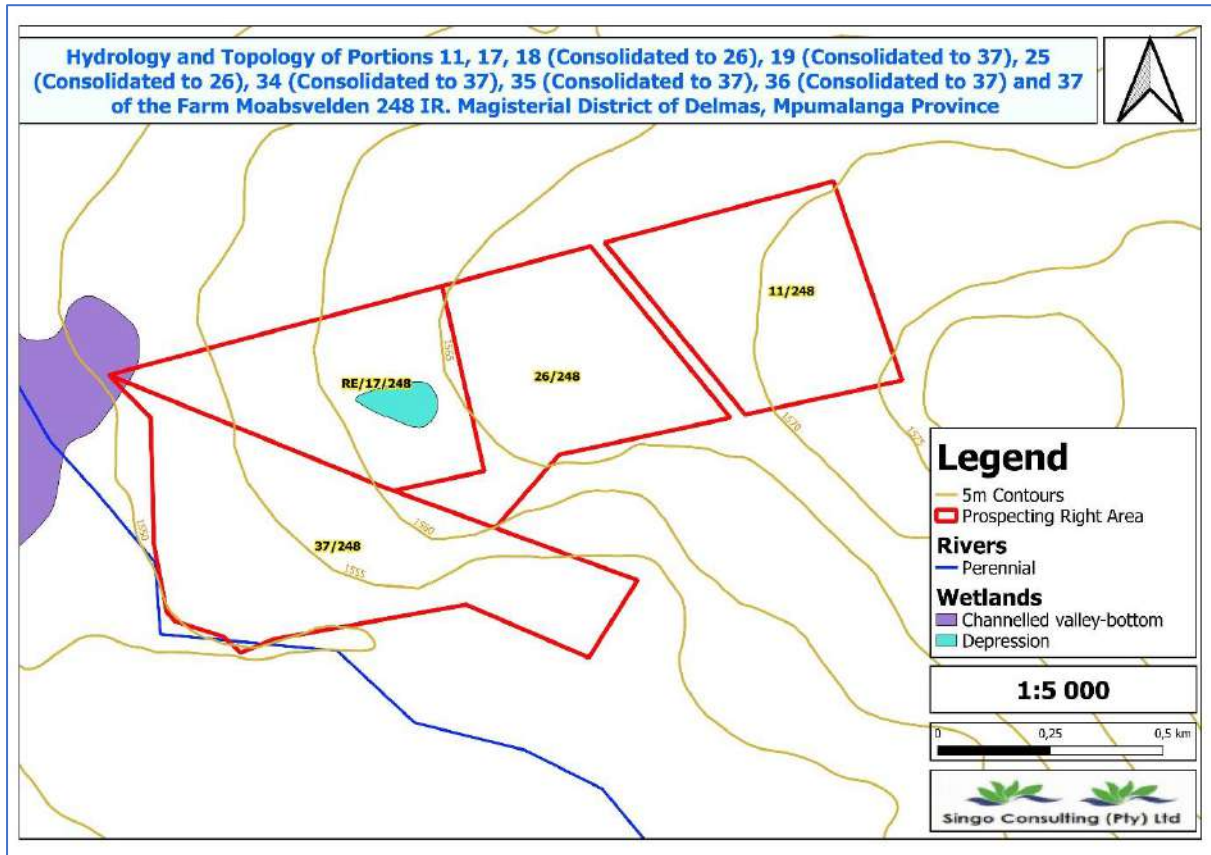


Figure 3: Hydrology and topology of the prospecting right area.



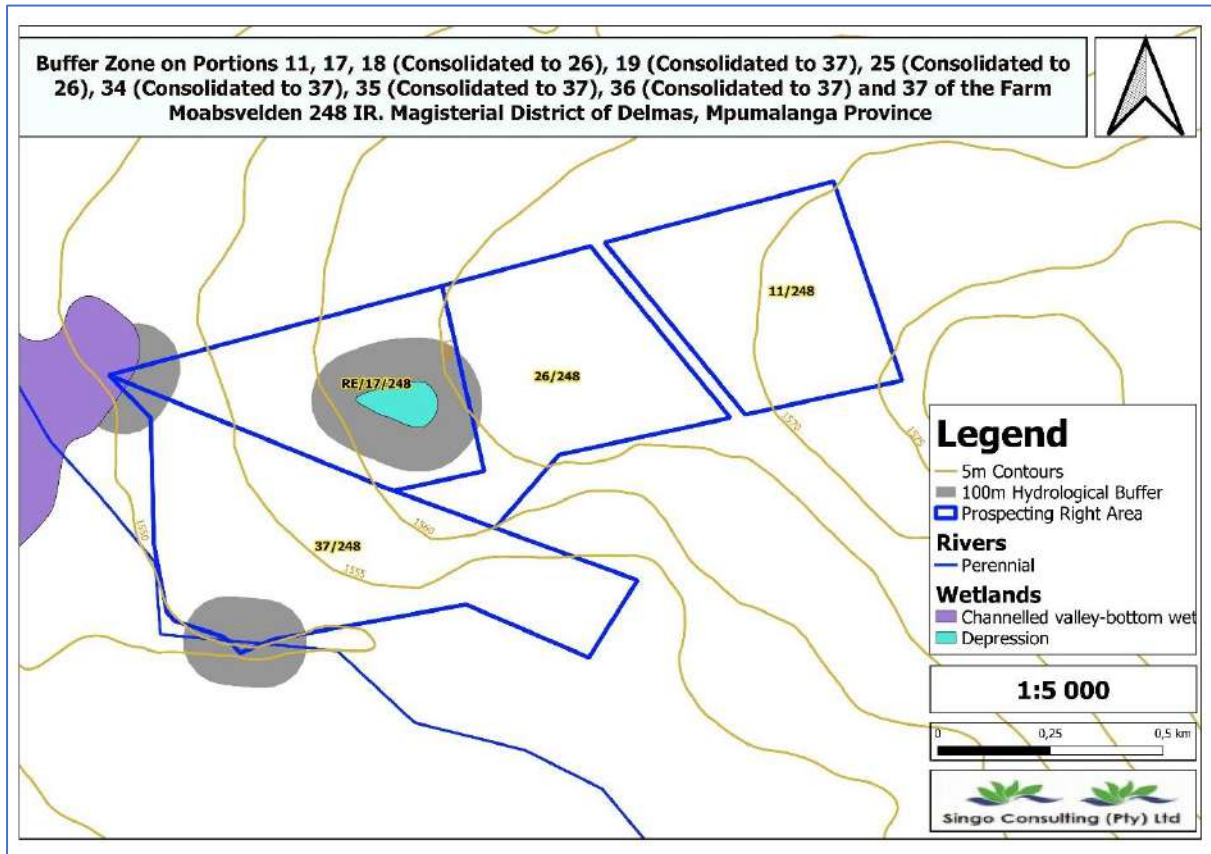


Figure 4: Hydrological buffer of the prospecting right area.

## 2.2 Climate

Delmas is 1527m above sea level. The city has a Subtropical highland climate. According to Köppen and Geiger, this climate is classified as Cwb. In Delmas, the average annual temperature is 25 °C. January is the warmest month recording the most precipitation of about 124.5 mm. The coolest month on average is June recording the least precipitation 3.4 mm on average. The average annual precipitation ranges between 601-800 mm.



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Application of Coal

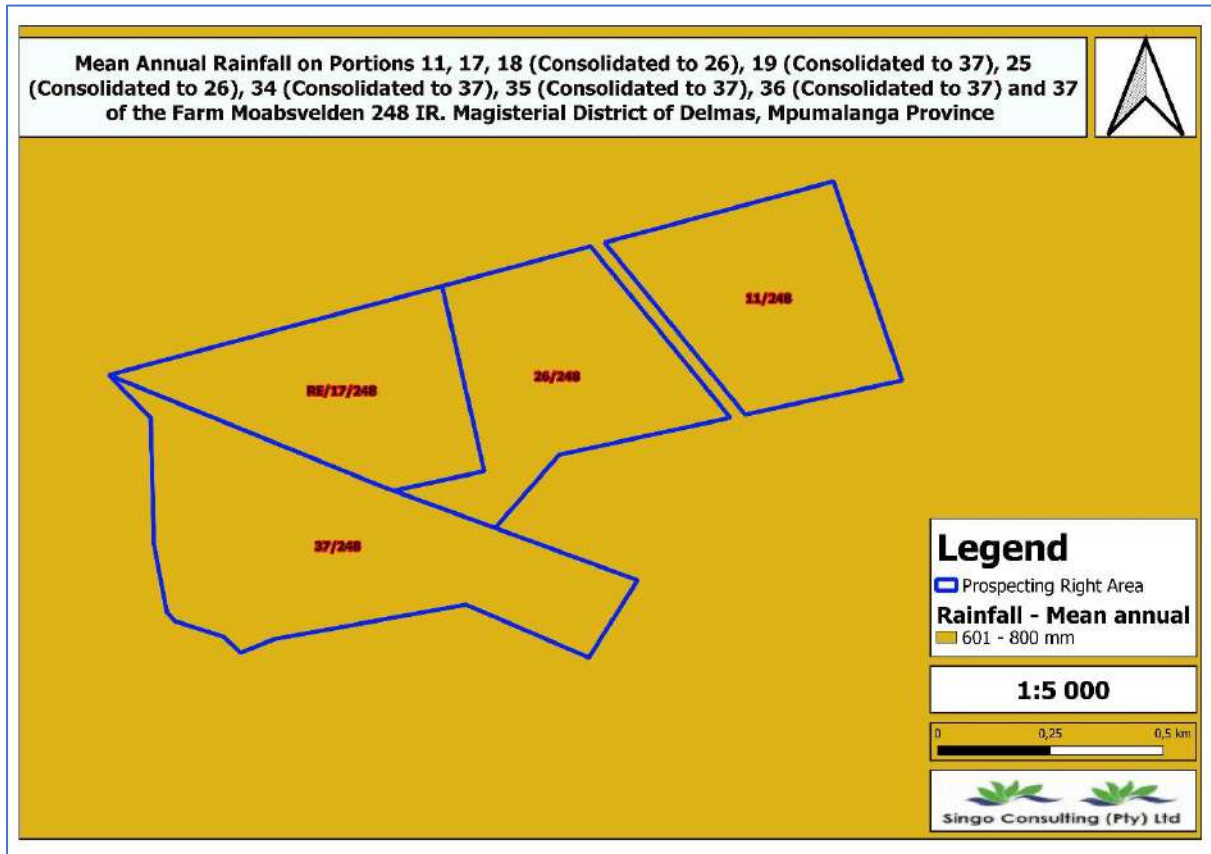


Figure 5: Annual rainfall map.



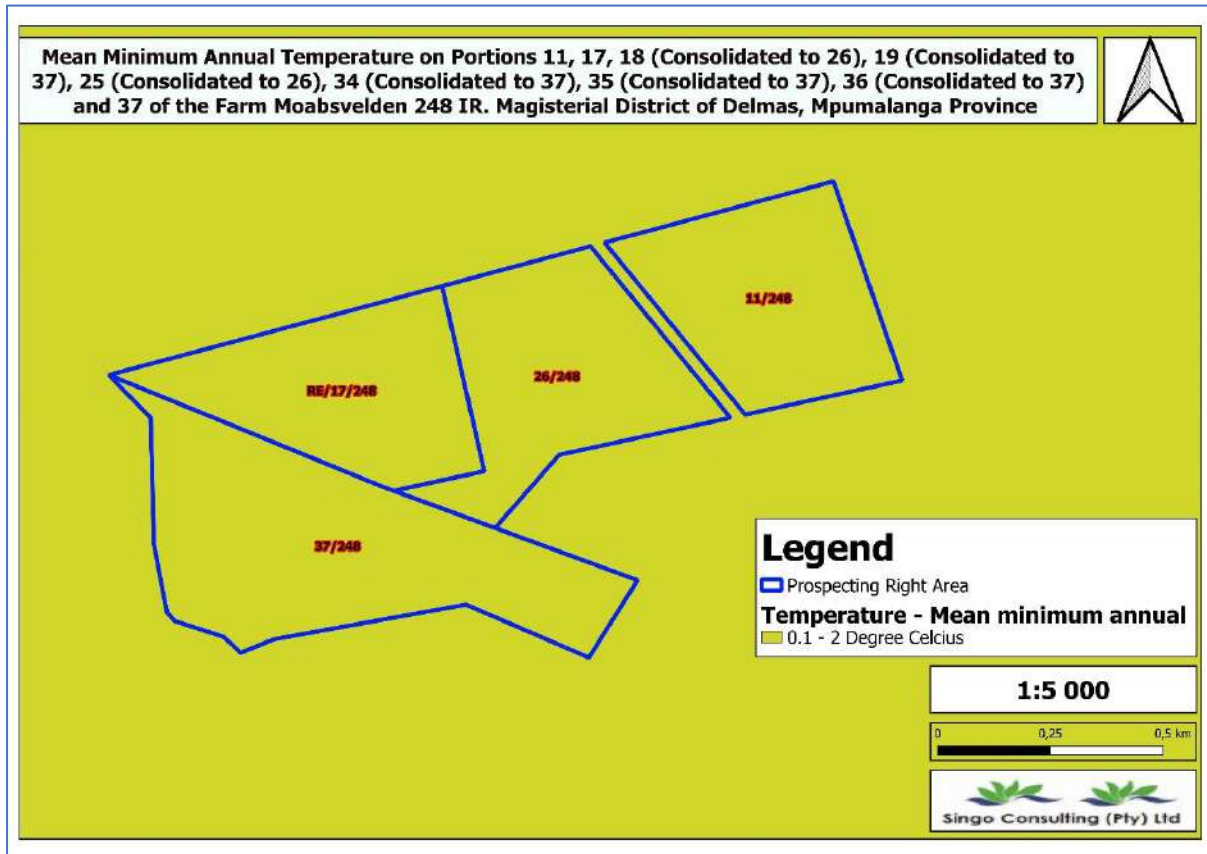


Figure 6: Annual temperature map.

### 3 SCOPE OF WORK

The following assignments were completed for this hydrogeological study:

#### 1. Desktop Study

- Project Initiation and Data Collection
- Review available site specific hydrogeological and hydrological information to conceptualize the different aquifer systems and their interaction with surface water features in the area.

#### 2. Hydrogeological Modelling

- Numerical Groundwater Flow and Transport Model
  - Model inputs
  - Model Calibration
  - Scenario Modelling
  - Hydrogeological Impact Assessment



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Application of Coal

- Use the model to predict potential mining impacts on the shallow and deep groundwater flow systems, groundwater seepages and spring discharges.

### 3. Reporting

Writing a comprehensive geohydrological report outlining all the findings and existing environment of the proposed project area. This groundwater specialist report compiles all methodologies, findings, quantitative analysis (geochemical assessment and modelling outcomes), impact assessments, recommendations (proposed monitoring programme and recommended mitigation measures for predicted impacts) and conclusions. The conceptual and numerical model development, simplifying assumptions and outcomes of predictive simulations is documented in accordance with the Standard Guide for Documenting a Ground-Water Flow Model Application (ASTM, 2006).

### 4. Site visits

Site visit is the most significant part of the investigation, site visits will be conducted as part of environmental assessment, to confirm the water bodies observed on the hydrological map and to take pictures of the current environmental condition before the commencement of prospecting.

## 4 METHODOLOGY

### 4.1 Desktop study

A literature study of all available relevant data was performed to provide additional data where required. Data sourced from the literature study was incorporated into the entire research report and referenced accordingly. Data was sourced from: science literature (journals, textbooks, reports, maps etc.), GIS data available to the author from Singo Consulting (Pty) Ltd, DWS, SAWS weather station records and available relevant scientific work performed on the study area. A detailed list of all the sources of the literature incorporated into the research report is provided in the reference list.

### 4.2 Hydrocensus

The Hydrocensus main objective is to record the groundwater data available i.e. counting the number of boreholes if present, recording their names, conditions, coordinates as well as measuring the water levels. This helps to identify the baseline groundwater use and users within the study area. A detailed Hydrocensus will be conducted on and around the site within the distance 2km radius from the project area to obtain a representative population of the





boreholes in the area. During the Hydrocensus, all available details of boreholes and borehole-owners will be collected and recorded.

### **4.3 Drilling and siting of boreholes.**

The exploration boreholes will be drilled one at a time at various locations within the proposed project area. The depths of the drill holes will average 100 m and will be determined onsite whilst the drilling programme is underway as influenced by the depths and dips measured in other holes. A buffer of 100m will be kept from identified wetlands and rivers. A buffer of 100 meters will be kept from public roads.

The drill site will be fenced off, cleared, and drilled. Rehabilitation will occur immediately after drilling. As a site is drilled, it will be rehabilitated, and the drilling crew will move onto the next planned hole. This procedure will be followed until all the holes are drilled. Drilling will be conducted in consultation with the landowners. No other excavations, bulk sampling or pitting is planned throughout prospecting phase.

### **4.4 Groundwater modelling**

During model setup, the conceptual model is translated into a numerical model. This stage entails selecting the model domain, defining the model boundary conditions, discretizing the data spatially and over time, defining the initial conditions, selecting the aquifer type, and preparing the model input data. The above conditions together with the input data are used to simulate the groundwater flow in the model domain for pre steady state conditions.

#### **Conceptual model**

A conceptual model is a simplification of the complex real system down to familiar aspects that can easily be solved. This conceptual model is just a step prior to a solution model which can either be analytical or numerical.

#### **Numerical model**

Numerical groundwater modelling consists of flow and transport modelling types. Groundwater flow modelling can be represented by finite difference method or finite element. In this project finite difference method is used. The chosen software is MODFLOW.

### **4.5 Groundwater availability assessment**

The fractured aquifer system (~ 15 to 40m) present in the fresh rock below the weathered zone are well cemented, and do not allow significant water flow. All groundwater movement therefore occurs along secondary structures such as fractures, cracks, and joints in the rock.





These structures are best developed in sandstone and quartzite; hence the better water yielding properties of the latter rock type.

Dolerite sills and dikes are generally impermeable to water movement, except in the weathered state. In terms of water quality, the fractured aquifer always contains higher salt loads than the upper weathered aquifer. The higher salt concentrations are attributed to a longer contact time between the water and rock (IGS, 2008).

## 5 BASELINE INFORMATION

### 5.1 Geology

#### 5.1.1 Regional geology

The Transvaal Supergroup is an approximate 15.000 m-thick succession (Button, 1986) of mostly (meta)sedimentary rocks that were deposited on the Kalahari Craton over a period of more than 600 million years, between 2642 Ma (Vryburg Formation: Walraven and Martini, 1995), and 2.055 Ga (Bushveld Complex; Zeh et al., 2015). Its deposition is temporally confined by two large igneous provinces. It is underlain by flood basalts (with some komatiites) of the ca. 2.7 Ga old Ventersdorp Supergroup (Van der Westhuizen et al., 1991; Armstrong et al., 1991; de Kock et al., 2012), and its uppermost formations are intruded and overlain by mafic to felsic volcanic rocks of the Rooiberg Group and Bushveld Complex. The Bushveld Complex is the largest layered intrusion on Earth (>350,000 km<sup>3</sup>; e.g., Cawthorn and Walraven, 1998), and intruded and cooled rapidly between 2055.9 ± 0.3 and 2054.8 ± 0.3 Ma (Zeh et al., 2015), coeval but also prior to deposition of clastic sedimentary rocks of the Waterberg Group (Barker et al.

Rocks of the Transvaal Supergroup are exposed in three basins; the Griqualand West Basin in the southwest, the far-west Kanye Basin (Botswana), and the Transvaal Basin in the north-northwest of the Kaapvaal Craton. These three basins rest on different Archean cratonic blocks (terranes), which are subdivided from each other by prominent crustal-scale suture zones. These are the Murchison–Thabazimbi-Lineament, which resulted from amalgamation of the Witwatersrand Block with the Pietersburg Block at 2.97 Ga (Zeh et al., 2013a), and the Colesburg Lineament, formed during collision of the Witwatersrand and Kimberley Blocks at 2.93–2.88 Ga (Schmitz et al., 2004).

The Transvaal basin rests mainly on the Witwatersrand Block. The granitoid basement of this block formed and stabilized by intrusions between 3.4 and 3.1 Ga (Poujol et al., 2003), and was overlain subsequently by sedimentary rocks of the Witwatersrand Supergroup, Dominion Group and Ventersdorp Supergroup between 2.9 and 2.7 Ga (e.g., Armstrong et al., 1991; de



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Application of Coal

Kock et al., 2012), and eventually by Transvaal sediments of the Chuniespoort and Pretoria Groups of the Transvaal Supergroup. Towards the north, the Transvaal basin continues beyond the Murchison–Thabazimbi-Lineament, where it overlies Archean granitoids and greenstones of the Pietersburg Block. Relics of such sediments occur around the Bushveld Complex, Waterberg Basin, and the Makoppa Dome. The basement of the Pietersburg Block consists of granitoids, which are younger than those of the Witwatersrand Block.

The Griqualand West Basin and wide parts of the Kanye Basin rest on the Kimberley Block which has many similarities with the Pietersburg Block. Granitoids of the Kimberley Block intruded mainly between 3.0 and 2.79 Ga (Poujol et al., 2003), and the granite-greenstone basement is covered directly by sedimentary rocks and lavas of the Ventersdorp Supergroup (in protobasinal basins), and eventually by the Transvaal Supergroup. The Transvaal Supergroup in the Griqualand West Basin is subdivided into the Ghaap and Postmasburg Groups (from bottom to the top), and in the Kanye Basin into the Taupone and Segwagwa Groups, corresponding to the Chuniespoort and Pretoria Groups in the Transvaal Basin.

The Chuniespoort–Ghaap–Taupone Group is predominately made up of chemical sediments, even though the stratigraphic sequence starts with clastic sediments belonging to the Vryburg (Griqualand West) and Black Reef formations (Pretoria-Kanye basins), both of which were deposited in a subsiding intracratonic basin, in alluvial, braid-delta, shallow marine to lacustrine environments (Eriksson and Reczko, 1995; Catuneanu and Eriksson, 1999; Eriksson et al., 2001). The clastic sediments are overlain by platform carbonates (limestones, dolostones), locally intercalated by shales, and overlain by thick, economically important iron-formations (e.g., Altermann and Nelson, 1998).

Deposition of these chemical sediments took place between >2.555 Ga and 2.432 Ga, as is reflected by U–Pb ages of zircons in volcano-sedimentary rocks intercalated with the carbonates and BIFs. After deep erosion (up to 800 m), carbonates and BIFs of the Chuniespoort–Ghaap–Taupone groups were overlain by sediments of the Deutschland formation (cherts, carbonates, mudstones, sandstones and diamictites) and Makganyene formations (mostly diamictites), belonging to the Chuniespoort (Pretoria basin) and Postmasburg Group (Griqualand West basin) respectively (for more details see summary in Melezhik et al., 2013). Subsequently, after regional uplift and erosion deposition of Pretoria Group sediments started with chert breccias of the Rooihoogte formation, which like the chert breccias of the stratigraphically older Deutschland formation were mostly deposited on deeply eroded Chuniespoort chemical sediments (Hälbich et al., 1993; Eriksson et al., 2001).



Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right  
Application of Coal

Transvaal sedimentation began with predominantly clastic sedimentary rocks (Black Reef-Vryburg Formations) followed by carbonate rocks and banded iron formations (Chuniespoort-Ghaap-Taupone Groups). After an erosional hiatus, the clastic sedimentary rocks and volcanics of the Pretoria-Postmasburg-Segwagwa Groups were deposited within the three basins, largely under closed-basin conditions. A final stage of predominantly volcanic succession (Rooiberg Group-Loskop Formation) is limited to the Transvaal Basin.

The supergroup attains its maximum thickness and complexity within the Transvaal preservational basin where four subdivisions are recognized: (1) basal "protobasinal" (a descriptive term) rocks; (2) Black Reef Formation; (3) Chuniespoort Group carbonate-banded iron formation (BIF) platform succession; (4) Pretoria Group clastic sedimentary-subordinate volcanic succession. The protobasinal rocks occur only in the Transvaal basin, with the succeeding Black Reef Formation found in both the Kanye and the Transvaal depositories; the carbonate-BIF platform succession is the most widely developed, occurring in all three basins (Ghaap Group in Griqualand West and Taupone Group in Kanye), as does the Pretoria and equivalents: Segwagwa Group of the Kanye basin and the somewhat truncated Postmasburg Group in Griqualand West (e.g., Eriksson et al., 2006).

The Karoo Supergroup is a thick sequence of sedimentary rocks deposited between 300 and 180 million years ago. The main Karoo Supergroup basin covers over 50% of South Africa's surface and consists of five age-based groups, which show a change of depositional environment in time. These groups are the Dwyka (glacial), Eccca (shallow marine and coastal plain), Beaufort (non-marine fluvial), Stormberg (aeolian) and the volcanic Lebombo or Drakensberg groups (SACS, 1980; Veevers et al., 1994; Johnson et al., 1996; Johnson et al., 2006).

The rocks of the supergroup underlie approximately half of South Africa. The principal outcrops form the Main Karoo Basin. The main Karoo basin forms part of a major series of Gondwanan basins that developed through subduction, compression, collision, and terrane accretion along the southern margin of Gondwana (Cole, 1992; De Wit and Ransome 1992; Veevers et al. 1994; Catuneanu et al. 1998;). These include the Paraná Basin in South America, the Beacon Basin in Antarctica and the Bowen Basin in Australia. These depocentres filled between the Late Carboniferous and Middle Jurassic and their combined stratigraphies represent the best record of non-marine sedimentation of this period anywhere in the world. The general horizontally disposed sediments of the Karoo Supergroup are typically undulating with a gentle regional dip to the south



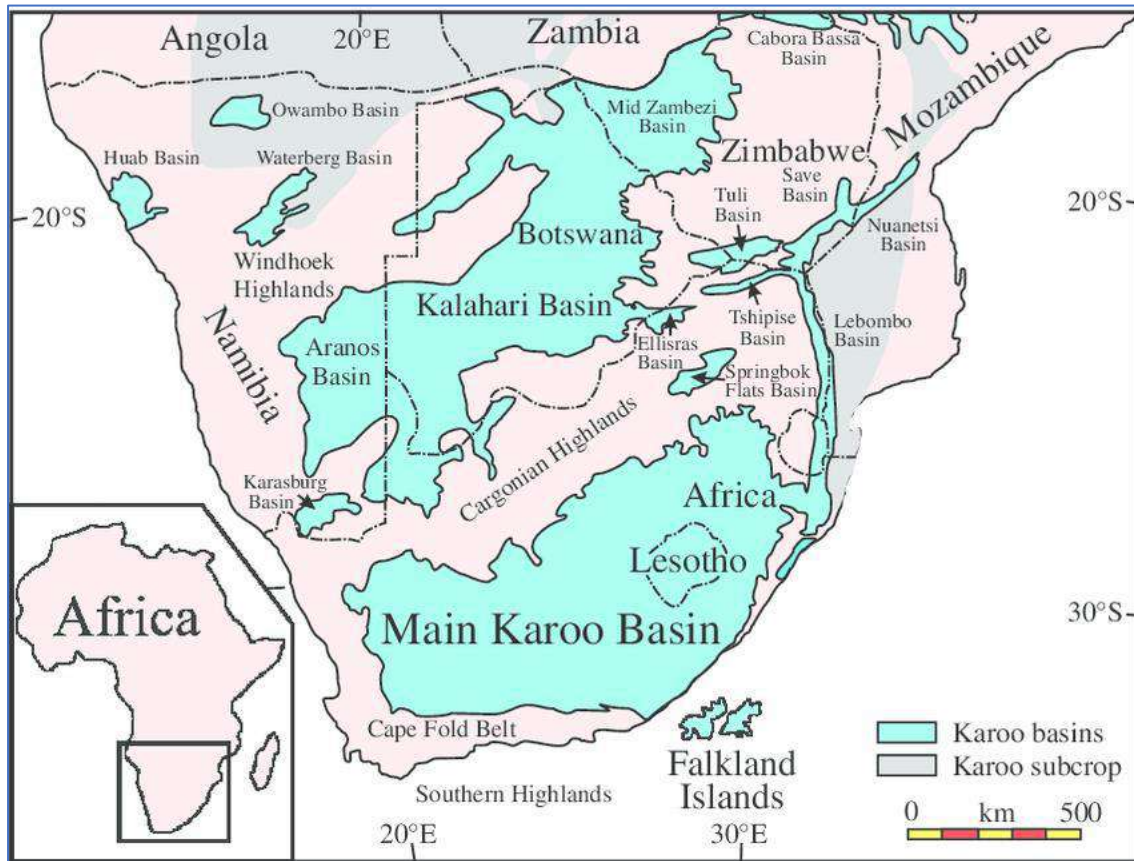


Figure 7: Southern African geological basins

### 5.1.2 Local geology

#### Vryheid Formation

The Vryheid Formation consists mainly of sandstone and shale with some subordinate coal seams associated with it (SACS, 1980). The sediments of the Vryheid Formation probably represent alluvial plain, upper and lower delta plain deposits with associated shallow lagoon and coastal swamps (Jerny and Bell, 1990). The change from stable margin to subsiding foreland basin confined the Vryheid Formation and the shales of the succession to "pinch-out" to the north. This "pinching-out" results in a gradation of a fluvial valley-fill sequence into sediments of deltaic origin (Van Vuuren, 1981). According to Cadle et al. (1990) the sandstones become interfingering with the deeper water shales, a so-called "shale-out", approximately 500 km from the present northern basin margin. They state that this is due to rapid basinward facies migration down the southerly dipping paleoslope.

The Formation attains a maximum thickness of 500 m in the deeper part of the basin (SACS, 1980), but in the area of the Eastern Transvaal Coalfield only attains a maximum thickness of



Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right  
Application of Coal

170 m (Greenshields, 1986) and thins to about 80 m in thickness in the proximal basin settings (Cadle et al., 1990). The Vryheid Formation contains 5 major coal seams, with locally developed partings and splits in the coal seams increasing the number to 8, within an 85 m thick stratigraphic horizon (Greenshields, 1986) although this horizon can attain thicknesses up to 160 m in the deeper parts of the basin (Cadle et al., 1990). According to Cidle et al. (1990) all five major seams are still present in the thinnest and most proximal parts of the formation. Greenshields (1986) states that all four cyclothems exhibit a regressive phase where sedimentation occurred in fluvio-deltaic environments, followed by a transgressive phase where sedimentation was typical of both marine and non-marine transgressive shorelines. A seam is therefore associated with clastic successions comprising carbonaceous shale or siltstone, fine to coarse grained sandstone and minor conglomerate (Cadle et al., 1990).

Although the five major coal seams, and their associated overlying and underlying sedimentary packages, can be correlated between coalfields (Cadle et al., 1990), they have different names in different coalfields (Greenshields, 1986). Greenshields (1986) states that the mining potential of the seams varies throughout the area but that the C seam has the biggest potential, although the B and E, and occasionally the D, seams attain mineable thicknesses over limited areas. The general distribution of the upper seams is often restricted by present-day topography, while the development of the lower seams is controlled by the pre-Karoo topography. Structurally the seams are flat-lying with a gentle south-westerly dip (Greenshields, 1986). The Dundas, Gus and Alfred seams are present in the Majuba Colliery mining area, but only the Gus seam is exploited by the colliery (Lear and Hill, 1989).

### **The Malmani Subgroup**

Some of the rocks in the projects area fall under Malmani Subgroup of the Chuniespoort Group, which instead is part of the Transvaal Supergroup. This was formed around 2.7 billion years ago and over the years it has been deformed tectonically, intruded and faulted by dykes and some other structures (Eriksson et al., 2006).

The Malmani Subgroup is underlain by the Black Reef Formation (Clastic sedimentary series of quartzite, shale and conglomerate). The base of the Transvaal Supergroup is constituted by the quartzite of the Black Reef Formation (Button, 1970). Coetzee (1996) defined the Black Reef Formation as the sedimentary succession between the Archean rocks and the lowermost dolomitic bed.

In this Malmani dolomite sequence, various formations exist with varying composition overlying the Black Reef Formation. As presented in Figure 7, dolomite of the Malmani Subgroup





Application of Coal

comprises five formations, from base to bottom: the Oaktree, Monte Christo, Lyttelton, Eccles and Frisco formations (Eriksson et al., 2006).

System	Sequence	Group	Formation	Lithology and Member	Thick-ness (m)
PERM-CARBONIFEROUS	KAROO	ECCA		Sandstone	
				Mudstone Carbonaceous Shale, coal	
				Sandstone	
				Shale	
				Diamictite	
PROTEROZOIC	TRANSVAAL	PRETORIA	TIMEBALL HILL	Shale	270 - 660
				Diamictite	
			Klapperkop Quartzite Mb wacke and ferruginous quartzite Graphitic and silty shale		
			Quartzite		
			Shale		
		ROOIHOOGTE	Bevets Conglomerate Member Breccia	10 - 150	
		CHUNIESPOORT	ECCLES	Chert-rich Dolomite with Large and Small Stromatolites	380
			LYTTELTON	Dark Chert-free Dolomite with Large Elongated Stromatolite Mounds	150
			MONTE CHRISTO	Light-coloured Recrystallised Dolomite with Abundant Chert; Stromatolitic; Basal Portion is Oolitic	700
			OAKTREE	Dolomite progressively Becoming Darker in Upper Portion; Chocolate-coloured Weathering	200
BLACK REEF QUARTZITE	Shale Quartzite Arkosic Grit		25 - 30		

Figure 8: The stratigraphy of the Transvaal Supergroup and Karoo Supergroup.

The Oaktree Formation (200 m thick) at the base is composed of chert-poor dolomite (dark) with shale (Obbes, 1995). Shale marker beds, large stromalitic domes, tuffe marker and the convulate chert marker are dominant in this Formation. The contact linking the overlying Monte Christo Formation with Oaktree Formation is gradual and dolomite colour change from dark brown to light grey and chert content increases (Obbes, 1995).





Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right  
Application of Coal

The chert-rich Monte Christo Formation (700 m thick) contains oolitic chert. The Formation has a coarse texture, moderate relief, streaky appearance and well characterized bedding traces. Dolerite dykes of Precambrian intruded this Formation striking from east-west and north-south. Erosion and dissolution that occurred along lineaments that are structurally controlled led to a karst topography related to sinkhole formations (SACS, 1980).

The chert-poor Lyttelton Formation (150 m thick) overlies the Monte Christo Formation and is characterized by chocolate brown dolomite. More chert is contained at the lower part of this succession compared to the central part (Clay, 1981). This Formation is also characterized by megadomal stromatolites and cross-bedded dolarenite beds are common. Relatively subdued topography, dark tone and bedding traces that are poorly defined are common. The Eccles Formation overlies this Formation and the contact is gradational and is where the dolomite colour change from dark brown to grey with increasing chert content (Clay, 1981).

Interbedded light grey dolomite and chert bands are common in Eccles Formation (380 m thick) (Obbes, 1995). This Formation is characterized by outstanding bedding traces from aerial photographs. At the top of the Eccles formation, chert breccia occurs. A dark brown color chert-poor dolomite occurs on top of the chert shale breccias. Silicified chert breccia caps the Eccles Formation with a marker unit (Obbes, 1995).

The uppermost section of the Malmani Subgroup is overlain by the Rooihoogte Formation (conglomerate breccias, shale and quartzite) and some sections are overlain by the sequence of sedimentary rocks of the Timeball Hill Formation of the Pretoria Group. The Malmani Subgroup dips to the north and lies underneath the Pretoria Group.

Much younger mudrock and shale of the Vryheid Formation (Karoo Supergroup) covers the eastern side of the Malmani Subgroup. This younger Formation is usually underlain by shale and diamictite of the Dwyka Group. In the north east and west of Lichtenburg a younger unconsolidated alluvial deposits overlie dolomite.



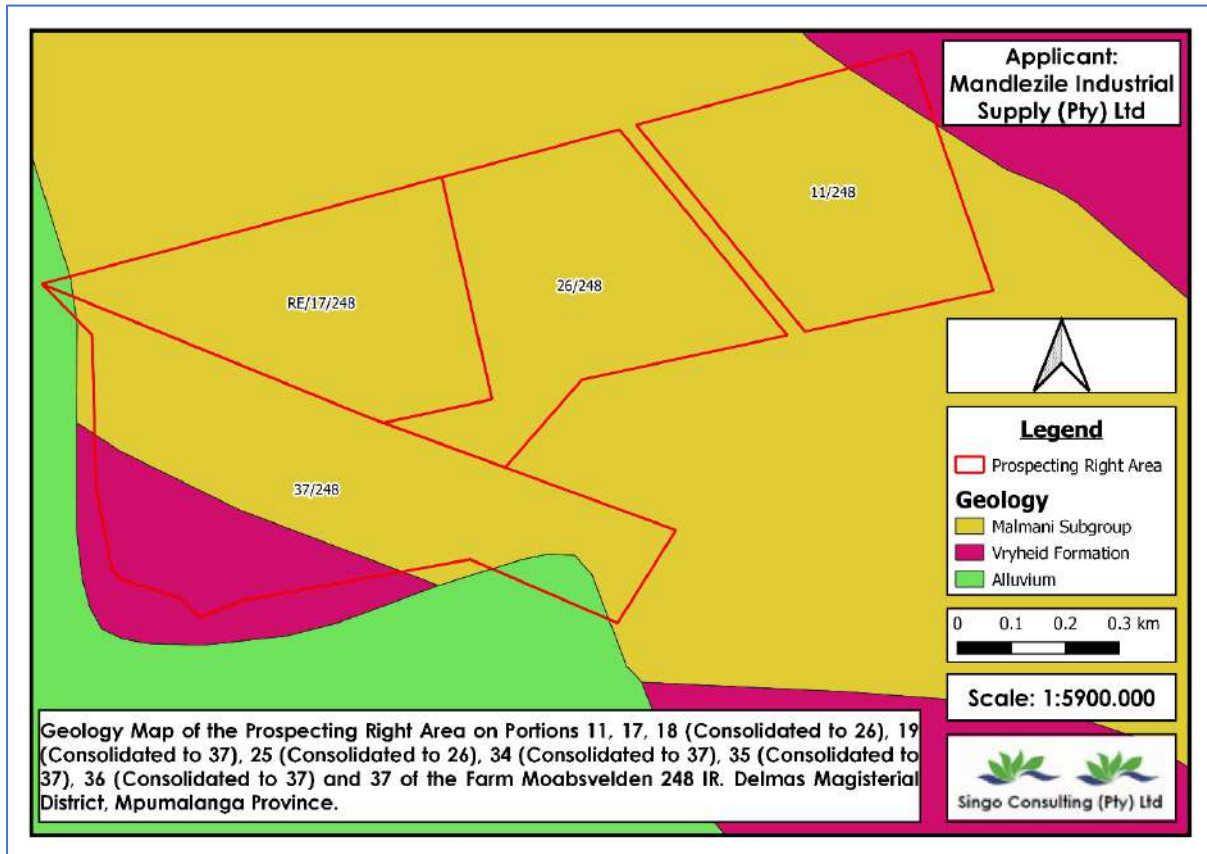


Figure 9: Geology of the prospecting right area

### 5.3 Hydrogeology

The fractured mode of groundwater occurrence describes aquifers associated with fractures, fissures and joints. The rocks of the Wilge River Formation (Waterberg Group) of which they are sandstone and quartzite, display the characteristics of the fractured regime. The dominant yield category for the Wilge River Formation is 0.1 - 0.5 l/s. Groundwater quality for all the aquifers of the fractured regime is good as the EC values of between 26 and 60 mS/m indicate.

The fractured aquifer system (~ 15 to 40m) present in the fresh rock below the weathered zone are well cemented, and do not allow significant water. All groundwater movement therefore occurs along secondary structures such as fracture, crack and joints in the rock. These structures are best developed in sandstones and quartzite; hence the better water-yielding properties of the latter rock type. In terms of water quality, the fractured aquifer always contains higher salt loads, and the higher salt concentrations are attributed to longer contact time between the water and rock (IGS2008).



#### 5.4 Potential contaminants

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

Absorbent Spill kits will be made available near the drill rigs during drilling activities refer to Figure 10. The oil absorbent chemicals will ensure that no oils infiltrate down to the underground to cause any groundwater contamination.



Figure 10: Examples of Absorbent spill kit to be used.



## 6 AQUIFER CLASSIFICATION

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area pointed by the red arrow comprises of major aquifers and the dominant water source is a combination of surface water and groundwater. Table 1 interprets the meaning of the aquifer classification and when an area is said to have a major aquifer it means that the aquifer is High-yielding aquifer of acceptable quality water.

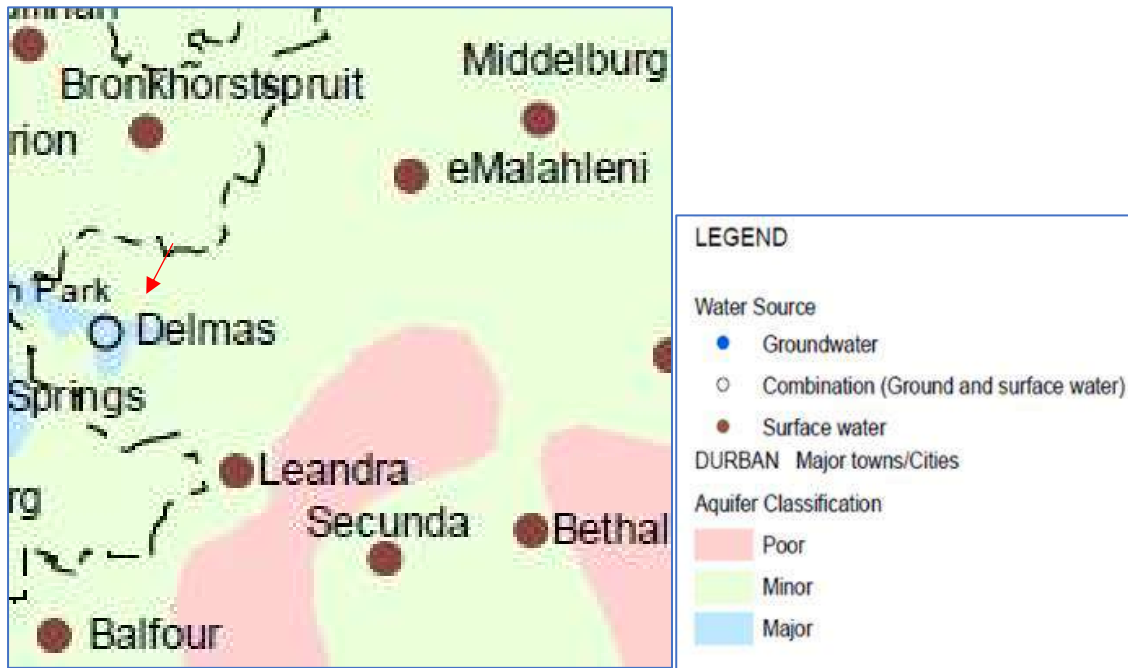


Figure 11: Aquifer classification of South Africa.

Table 1: Aquifer characterisation

Aquifer	Description
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 region	High-yielding aquifer of acceptable quality water.
Minor region	Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.
Poor region	Insignificantly yielding aquifer of good quality or moderately yielding aquifer of poor quality, or aquifer that will never be utilized for water supply and that will not contaminate other aquifers.



Special aquifer region	An aquifer designated as such by the Minister of Water
------------------------	--

## 7 GROUNDWATER MODELLING

### 7.1 Software model choice

MODFLOW software is the chosen software to model groundwater flow and contaminant transport in this situation. The finite difference numerical model was created using the US Department of Defence Groundwater Modelling System (GMS9.2) as Graphical User Interface (GUI) for the well-established MODFLOW and MT3DMS numerical codes.

MODFLOW is a 3D, cell-centred, finite difference, saturated flow model developed by the United States Geological Survey. MODFLOW can perform both steady state and transient analyses and has a wide variety of boundary conditions and input options. It was developed by McDonald and Harbaugh of the US Geological Survey in 1984 and underwent eight overall updates since. The latest update (MODFLOW-NWT) incorporates several improvements extending its capabilities considerably, the most important being the introduction of the Newton formulation of MODFLOW. This dramatically improved the handling of dry cells that has been a problematic issue in MODFLOW in the past.

MT3DMS is a 3-D model for the simulation of advection, dispersion, and chemical reactions of dissolved constituents in groundwater systems. MT3DMS uses a modular structure similar to the structure utilized by MODFLOW and is used in conjunction with MODFLOW in a two-step flow and transport simulation. Heads are computed by MODFLOW during the flow simulation and utilized by MT3DMS as the flow field for the transport portion of the simulation.

Elevation data is crucial for developing a credible numerical model, as the groundwater table in its natural state tends to follow topography. The best currently available elevation data is derived from the SRTM (Shuttle Radar Tomography Mission) DEM (Digital Elevation Model) data. The SRTM consisted of a specially modified radar system that flew on board the Space Shuttle Endeavour during an 11-day mission in February of 2000, during which elevation data was obtained on a near-global scale to generate the most complete high-resolution digital topographic database of Earth. Data is available on a grid of 30 meters in the USA and 90 meters in all other areas.









## 7.2 Model set-up and boundaries

During model setup, the conceptual model is translated into a numerical model. This stage entails selecting the model domain, defining the model boundary conditions, discretizing the data spatially and over time, defining the initial conditions, selecting the aquifer type, and preparing the model input data. The above conditions together with the input data are used to simulate the groundwater flow in the model domain for pre steady state conditions.

## 7.3 Groundwater elevation and gradient

-  Constant head boundary conditions on west and east boundaries
-  Single layer aquifer of 30 m thickness
-  Hydraulic head of 10 m along western boundary and 30 m along the eastern boundary
-  Uniform hydraulic conductivity of 0.001 m/d

## 7.4 Groundwater sources and sinks

Following the characterization of the aquifers, contaminant sources and groundwater receptors, the conceptual model was transformed into a numerical model so that the groundwater flow conditions, and mass transport can be solved numerically. A conceptual model is a simplified, but representative description of the groundwater system that illustrates the interaction of the sources, pathways, and receptors at the site.













-  The **sources** represent any entity that contributes to the groundwater quantity and/or quality
-  The **pathways** are the aquifers through which the groundwater and contaminants migrate and
-  The **receptors** are humans, rivers or natural ecosystems that depend on the groundwater and will be impacted negatively if the water is depleted by dewatering or is contaminated.

Table 2: Possible source, pathways and receptors

Potential Sources	Pathways	Receptors
<ul style="list-style-type: none"> <li> Fuel &amp; hydrocarbon spills</li> <li> Core-Drilling</li> </ul>	<ul style="list-style-type: none"> <li> Vadose zone</li> <li> Groundwater</li> <li> Sediment erosion</li> </ul>	<ul style="list-style-type: none"> <li> Aquatic life</li> <li> Terrestrial Wildlife</li> <li> Vegetation</li> <li> Humans</li> </ul>







## 7.5 Model results

Prior to the drilling of the prospecting boreholes, a baseline steady state groundwater flow model was set-up and calibrated. The objective of the steady state model is to simulate the undisturbed groundwater system in the region prior to commencement of prospecting activities. The impacts of the prospecting activities can then be determined by comparing the transient state results with the steady state results. Groundwater flow model was developed to determine the flow direction as well as flow velocity of water before any disturbances to the natural environment.

### 7.5.1 Groundwater flow model

Before any activity can take place, the surrounding environment and the groundwater will not be affected by solute contamination. The concentration of possible contaminants is assumed to be zero, therefore we will only have a groundwater flow model illustrating how the groundwater is flowing before any activity commence.

Data:

-  Steady state flow simulation
-  Recharge = 0.0017232877m/day

The model below illustrates that the arrow has uneven flow directions towards the lower elevations where the stream and tributaries are located. The general flow direction as per the model below is uneven, with reference from the prospecting farm. The flow velocities are more near the river that is depicted by the light blue solid line.



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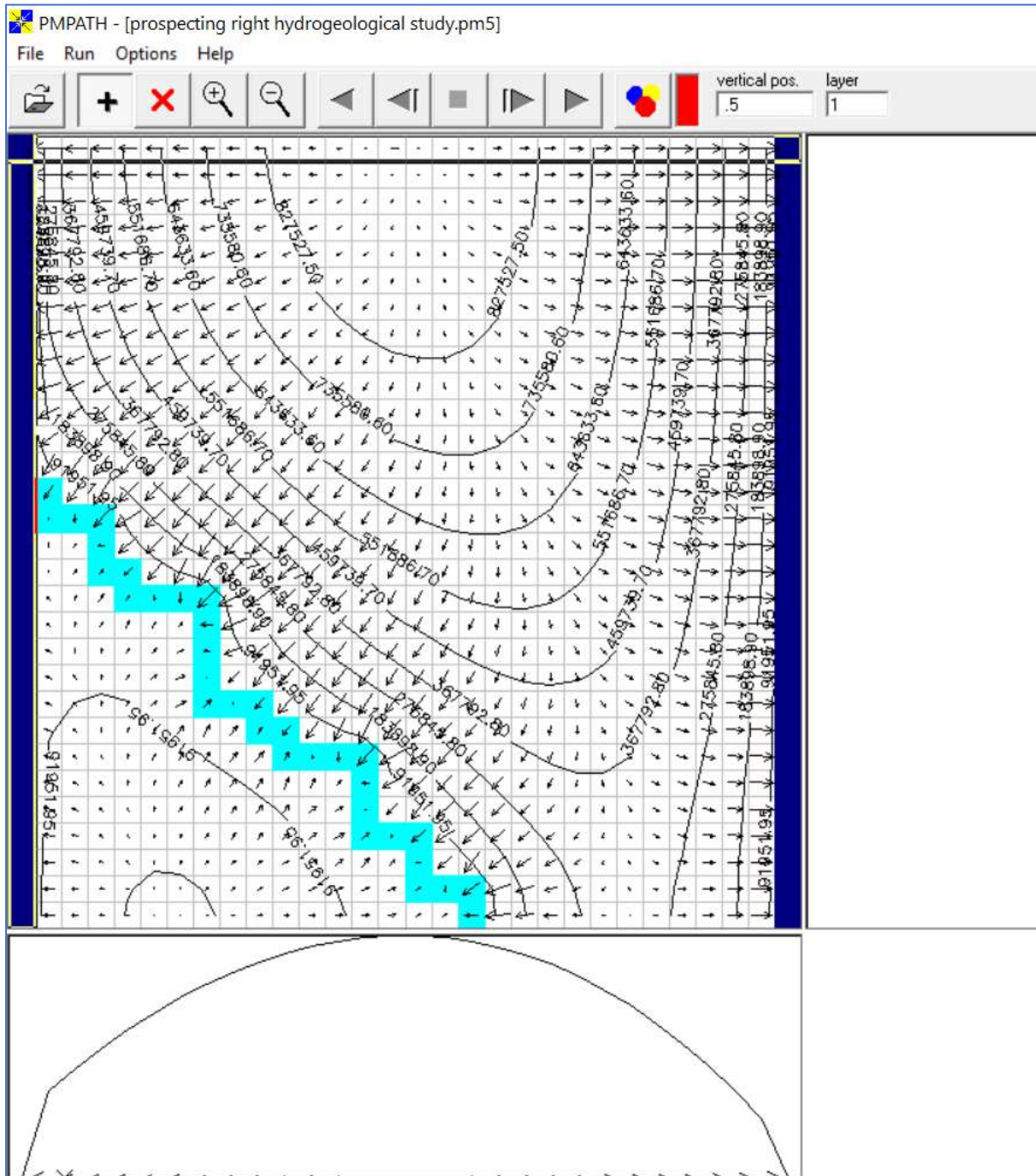


Figure 12: Groundwater flow model

## 8 GEOHYDROLOGICAL IMPACTS

During the prospecting phase of Coal, the following impacts are envisioned:

- Clearing of vegetation leading to increased runoff and less infiltration.
- Diesel and oil spillages from the drill rig



Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right  
Application of Coal

- Increase in volume of contaminated water that needs to be managed within the footprint.
- Erosion of stream banks as a result of crossings and diversions leading to siltation of the stream

During the prospecting period, the following management measures will apply:

- All spillages will need to be cleaned up as soon as practically possible.
- Providing spill absorbing material
- All equipment utilizing hydrocarbons will be stored on a hard-standing surface.
- Vehicles and machinery will be maintained in good order to minimize leakages.



Table 3: Groundwater impact assessment

Prospecting right impact assessment table						
Name of Company: Singo Consulting (Pty) Ltd			Sector: Environmental Consulting firm			
Department: Land and water division						
Risk Assessment						
Potential environmental impact	Cause of the impact	Recommended measures/remarks for mitigation	Impact risk before mitigation	Impact risk after mitigation	Responsible person(s)	When mitigation should be implemented
Fuel & hydrocarbon spills	Drill rig, trucks, and cars	Clean up immediately after accidental spills & Divert run-off from highways that may contain hydrocarbons into pollution control dams to regulate the pollution.  Providing spill absorbing material All equipment utilizing hydrocarbons will be stored on a hard-standing surface.  Vehicles and machinery will need to be maintained in good order to minimize leakages.			The project management team	During the prospecting activities
Aquifer contamination	During drilling exploration boreholes	<ul style="list-style-type: none"> <li>Install casing and rehabilitate the exploration boreholes</li> <li>Take water samples from the drilled boreholes</li> </ul>			The project management team	After drilling
Clearing of vegetation leading to	During pegging, and preparation	<ul style="list-style-type: none"> <li>Rehabilitate the site by using a hoe to dug the compacted soil or a tractor.</li> </ul>			The project management team	After pegging and drilling



Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right Application of Coal

increased runoff and less infiltration	of the drilling yard					
Surface water contamination	<ul style="list-style-type: none"> <li>Washing of working equipment machinery</li> <li>Using water from the river to operate the drill rig</li> </ul>	<ul style="list-style-type: none"> <li>Avoid drilling near surface water</li> <li>Do not wash equipment and vehicles at or near water bodies</li> <li>Conduct prospecting during dry seasons when the water percentages in wetlands and rivers are very low</li> <li>All the wetlands and rivers will need to be buffered as no go area</li> </ul>			The project management team	During prospecting period
Erosion of stream banks as a result of crossings and diversions leading to siltation of the streams	During prospecting activities like logging and sampling	Do desktop study and avoid working near the water bodies			Prospecting team	During the prospecting phase
Soil compaction	During constructing gravel roads to access the site	Rehabilitate these roads by digging with tractors and ploughing vegetation			The project management team	After the prospecting phase
Water and soil contamination	Core logging	The core logs of boreholes with mineral of interest should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall			The project management team	After the prospecting phase
<b>Impact Classification</b>						



Hydrogeological study for Mandlezile Industrial Supply (Pty) Ltd for Prospecting Right Application of Coal

Low environmental Impact.	Medium environmental Impact	High environmental impact	Very High environmental impact
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## 9 CONCLUSIONS AND RECOMMENDATIONS

- It can be concluded that the prospecting activity will cause minimal impact on the water resources as the mitigation measures will strictly be implemented at the commencement of the project. The prospecting right activity will take place during dry seasons where the water percentages in the surrounding streams are exceptionally low.
- Drilling activity will not be conducted within 100m from watercourses, the exploration geologists will be advised to drill and sample more than 100m from rivers and wetlands on site.
- The exploration boreholes must be cased during drilling and properly rehabilitated by cap sealing the borehole after drilling.
- Extreme caution will be taken during prospecting, owing to the river and numerous wetlands existing within and nearby the project area. No washing of any mechanical equipment or vehicles will be allowed near the water resources.
- Rivers and wetlands will be buffered as no go area, a 100m buffer will apply.
- The core logs of boreholes with mineral of interest should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.



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# PROSPECTING RIGHT SOIL STUDY

SOIL STUDY REPORT FOR PROPOSED PROSPECTING RIGHT APPLICATION FOR COAL ON PORTIONS 11, 17-23 AND 25-37 OF THE FARM MOABSVELDEN 248 IR, SITUATED IN THE VICTOR KHANYE LOCAL MUNICIPALITY, UNDER DELMAS MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE, SOUTH AFRICA.

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DMRE REF: MP 30/5/1/1/2/ 15846 PR

2021

## Project Information

Report Type	Prospecting Right Soil Study Report
Project Title:	Soil study report for Prospecting Right Application that has been lodged for Coal on portions 11, 17-23 and 25-37 of the farm Moabsvelden 248 IR, situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province.
Client	Mandlezile Industrial Supply (Pty) Ltd
Site Location	Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province
Version	1
Date	28 May 2021

### Electronic signatures

Compiled by Mutali Guduvheni (Junior Hydrogeologist)  
Singo Consulting (Pty) Ltd



Reviewed by Mutshidzi Munyai (Hydrogeologist) Singo Consulting (Pty) Ltd (Water Resources Science (Candidate Natural Scientist), Environment Science (Candidate Natural Scientist) (SACNASP Registration Number 122464)



Final Review and Approval Dr. Kenneth Singo (Principal Consultant of Singo Consulting (Pty) Ltd) South African Council for Natural Scientific Professions (SACNASP: Earth Science Reg. No: 400069/16),



## Report Credentials

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*The results and conclusions of this report are limited to the Scope of Work agreed between Singo Consulting (Pty) Ltd and Mandlezile Industrial Supply (Pty) Ltd for whom this investigation has been conducted. All notions made and all knowledge contained within this report and its attachments hinge on the convenience to and dependability of relevant information, including maps, previous reports and word-of-mouth, from the Client and affected parties. All work conducted by Singo Consulting (Pty) Ltd is done in accordance with the Singo Consulting (Pty) Ltd Standard Operating Procedures.*

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## Executive Summary

Singo Consulting (Pty) Ltd was appointed by Mandlezile Industrial Supply (Pty) Ltd as an independent consulting company, to conduct a soil study. The soil study is being conducted in support of coal prospecting right application for Mandlezile Industrial Supply (Pty) Ltd, situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province.

### Outcomes of the Investigation.

- Soil pits will be positioned according to change in vegetation, topography and colour.
- Soil Properties (colour, texture, structures, etc.) will be analyzed by soil surveyors.
- Soil samples will be taken from the selected pits by using soil auger.
- Identification of any problematic soils and its impact on the development.
- The core logs of exploration boreholes should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- After prospecting, rehabilitation of the disturbed area should take place.





**Table of Contents**

Project Information ..... 2

Report Credentials..... 3

Executive Summary ..... 4

Table of Contents ..... 5

List of Figures ..... 6

List of Tables ..... 6

1 Introduction ..... 7

    1.1 Background Information ..... 7

    1.2 Project location ..... 7

2 Scope of work ..... 8

3 Terms of Reference ..... 9

    3.1 Soil Study..... 9

4 Soil survey Methodology ..... 9

    4.1 Soil survey procedures ..... 9

    4.2 Soil Classification ..... 10

    4.3 Soil sampling and analyses ..... 10

    4.4 Structure of the SA classification system ..... 10

    4.5 Environmental Impact Assessment ..... 10

5 Description of the Receiving Environment ..... 14

    5.1 Climate ..... 14

    5.2 Soil classes of the project area ..... 16

    5.3 Land Use ..... 18

        5.3.1 Mines ..... 18

        5.3.2 Built- up ..... 18

        5.3.3 Cultivated land ..... 18

        5.3.4 Waterbodies..... 19

        5.3.5 Wetlands..... 19

6 Potential Environmental Impacts ..... 20

7 Impact Assessment ..... 20

8 Soil Management Plan..... 21

    8.1 Background ..... 21

    8.2 Physical mitigation ..... 22

    8.3 Soil quality indicators ..... 22

9 Conclusion and Recommendations ..... 23

10 References..... 24

Appendices ..... 25

    Appendix A: Specialists qualifications ..... 25

5



Appendix B: Site Pictures ..... 25

### List of Figures

Figure 1: Locality of the proposed project ..... 8  
Figure 2: Mean annual rainfall within the prospecting right area. .... 15  
Figure 3: Mean minimum temperature within the prospecting right area ..... 16  
Figure 4: Soil classes map..... 18  
Figure 5: Land use classes ..... 19

### List of Tables

Table 1: Impact assessment parameter ratings ..... 12  
Table 2: Probability Consequence Matrix..... 14  
Table 3: Impact significance threshold limits..... 14  
Table 4: Loss of topsoil as a resource, erosion, and compaction ..... 21



## 1 Introduction

### 1.1 Background Information

Singo Consulting (Pty) Ltd was appointed by Mandlezile Industrial Supply (Pty) Ltd to conduct a soil study for the Prospecting Right Application and Environmental Authorization which has been submitted for the prospecting of Coal located on portions 11, 17-23 and 25-37 of the farm Moabsvelden 248 IR, situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province, South Africa.

The main aim of conducting this study is to find information with regards to the soil potential, current land use as well as land capability.

This report is not planned to be an intensive description of the proposed project; however, it is conducted as a specialist soil study to evaluate the soil potential, current land use as well as land capability information required for the environmental authorizations for the proposed prospecting project.

### 1.2 Project location

A locality map created by QGIS software illustrates detailed and comprehensive information regarding the surrounding settlements and infrastructure of the proposed project area. The proposed project area is on the Farm Moabsvelden 248 IR, located approximately 9.40 km East of Delmas town. The proposed area covers parts of Thaba Chueu Mining (Pty) Ltd and between R555 and R50 national roads.



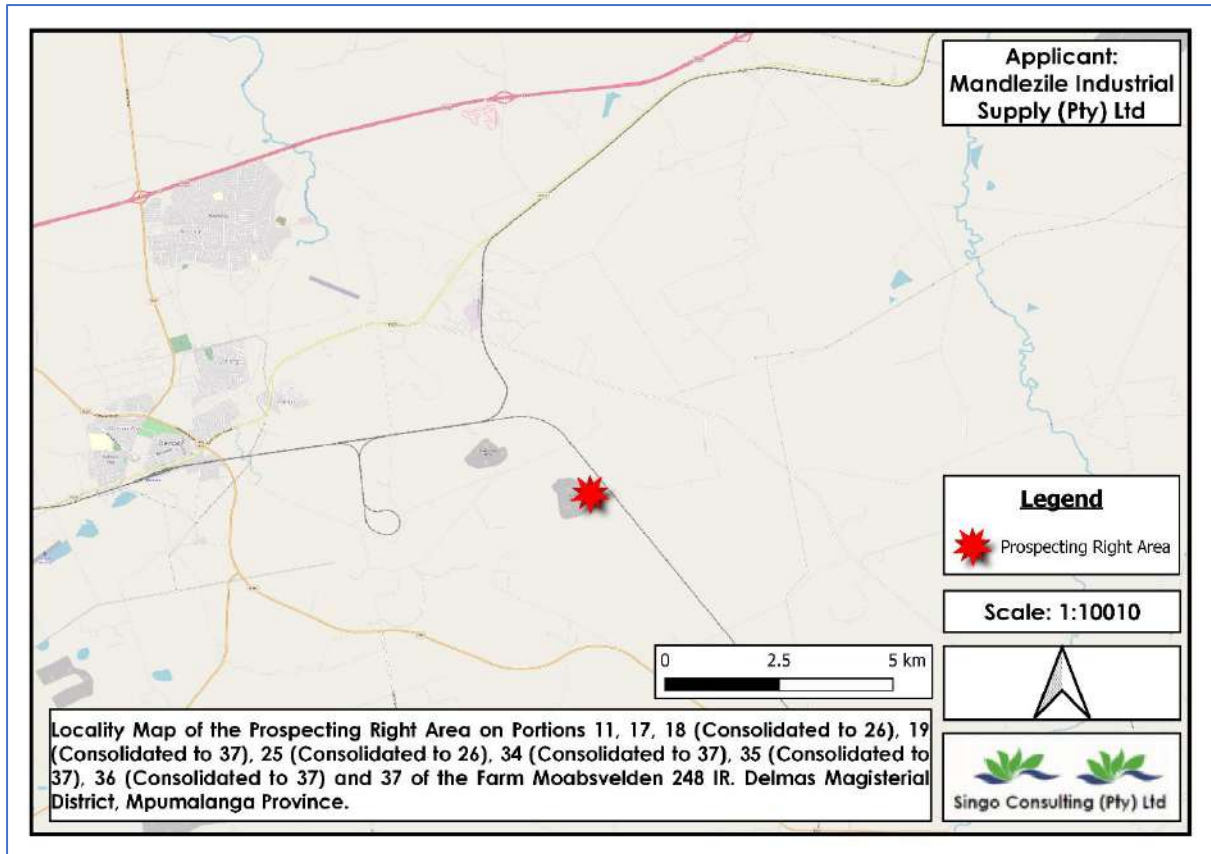


Figure 1: Locality of the proposed project

## 2 Scope of work

The scope of work included the following:

- Conduct a basic soil assessment of the proposed prospecting right project.
- Determine impacts of the proposed prospecting activities of Coal on soil and provide associated mitigation measures.
- Classify and map soil forms according to the South African Taxonomic Soil Classification System, 1991
- Derive and map land capability based on soil properties.
- Map all current land uses.



### 3 Terms of Reference

The following tasks were undertaken in the compilation of the soil assessment, land use and land capability study:

#### 3.1 Soil Study

- A basic soil assessment of the proposed project development footprint areas associated within the proposed Coal prospecting site.
- The soil classification will be done according to the Taxonomic Soil Classification System for South Africa, 1991. The following attributes were included at each observation:
  - Soil form and family
  - Soil depth
  - Estimated soil texture
  - Soil structure
  - Underlying material
  - Current land use
  - Land capability

### 4 Soil survey Methodology

#### 4.1 Soil survey procedures

The soil survey procedures allow soil surveyors to arrive at the project area, analyze and study soil properties such as colour, texture, structure amongst others and differentiate between horizons. Classification will also be enabled for soil surveyors to complete. Chemical tests can be carried out in the field (e.g., pH, test for carbonates and test for Mn oxides). Classification will be done at this stage providing information about the chemical, physical, and mineralogical characterization of the soil. Soil scientists that map the area, familiarize themselves with soils they expect to find and use characteristics to distinguish them from other soils in the area by doing a desktop study.

#### Delineating soil boundaries

To avoid digging random soil pits with an auger, a map of the area will be taken, and a grid will be made on the map to determine where samples will be taken from. An efficient soil



mapper looks at changes in vegetation, topography, and soil colour. A bare soil map can also be looked at to see where changes in colour occur indicating differences in soil. Once the project area is established, an auger will be used to dig holes in order to determine the soil profiles.

## 4.2 Soil Classification

The soil classification will be done according to the Taxonomic Soil Classification System for South Africa, 1991. The following attributes were included at each observation:

- Soil form and family
- Soil depth
- Estimated soil texture.
- Soil structure
- Underlying material
- Current land use and Land capability

## 4.3 Soil sampling and analyses

Pits cannot be dug randomly, therefore a map of the area is used and a grid is created on the map to determine where the samples will be taken from. An efficient soil mapper looks at changes in vegetation, topography, and soil colour. A bare soil map can also be utilized to see where changes in colour occur indicating the differences in soil. Once sites are identified, soil samples will be collected with a soil auger.

## 4.4 Structure of the SA classification system

Procedure to follow when identifying a soil:

- Demarcate master horizons in profile.
- Identify diagnostic horizons/materials.
- Establish soil form.
- Identify family differentiae.
- Establish soil family.
- Determine textural class

## 4.5 Environmental Impact Assessment

The impact rating process is designed to provide a numerical rating of the various environmental impacts identified using the Input-Output model. It must be emphasized that





the purpose of this process is not to provide an incontrovertible rating of the significance of various aspects, but rather to provide a structured, traceable, and defensible methodology of rating the relative significance of impacts in a specific context. This provides the project proponent a greater understanding of the impacts of this project and the issues which need to be addressed by mitigation and give the regulators information on which to base their decisions on.

The significance rating process follows the established impact/risk assessment formula:

$$\text{Significance} = \text{Consequence} \times \text{Probability}$$

*Where*

$$\text{Consequence} = \text{Severity} + \text{Spatial Scale} + \text{Duration}$$
$$\text{Probability} = \text{Likelihood of an impact occurring}$$

The matrix calculates the rating out of 147, whereby Severity, Spatial Scale, Duration and Probability are each rated out of seven as indicated in

Table 1. Weighting can be applied to the various parameters. Impacts are rated prior to mitigation and again after consideration of the mitigation measure proposed in the Environmental Management Plans (EMP). The significance of an impact is then determined and categorized into one of four categories, as indicated in



Table 2, which supports Table 3. Environmental management actions will be assigned for all identified impacts.

A neutral impact implies that it causes the area to return to a pre-project state. This is not regarded as positive, as there would have been no need for this activity if the operation were not carried out.

Table 1: Impact assessment parameter ratings

Rating	Severity				
	Environmental	Social, cultural and heritage	Spatial scale	Duration	Probability
7	Very significant impact on the environment. Irreparable damage to highly valued species, habitat or eco system. Persistent severe damage	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	<u>International</u> The effect will occur across international borders	<u>Permanent: No Mitigation</u> No mitigation measures of natural process will reduce the impact after implementation	<u>Certain/Definite.</u> The impact will occur regardless of the implementation of any preventative or corrective actions.
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 Will affect the entire country	Permanent: Mitigation measures of natural process will reduce the impact	Almost certain/Highly probable It is most likely that the impact will occur
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 Will affect the entire province or region	Project Life The impact will cease after the operational life span of the project	Likely The impact may occur
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 Will affect the whole municipal area	Long term 6-15 years	Probable Has occurred here or elsewhere and could therefore occur
3	Moderate, short-term effects but not affecting ecosystem function.	On-going social issues. Damage to items of cultural significance. Local	Local Local extending only as far as the	Medium term 1-5 years	Unlikely Has not happened yet but could



Soil study for Coal Prospecting Rights of Mandlezile Industrial Supply (Pty) Ltd

	Rehabilitation requires intervention of external specialists and can be done in less than a month		development site area		happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
<b>2</b>	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 Limited to the site and its immediate surroundings	Short term Less than 1 year	Rare/improbable Conceivable, but only in extreme circumstances and/ or has not happened during lifetime of the project but has happened elsewhere. The possibility of the impact materializing is very low as a result of design, historic experience or implementation of adequate mitigation measures
<b>1</b>	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 Limited to specific isolated parts of the site.	Immediate Less than 1 month	Highly unlikely/None Expected never to happen



Table 2: Probability Consequence Matrix.

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

Table 3: Impact significance threshold limits.

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

## 5 Description of the Receiving Environment

The proposed project area is on portions 11, 17-23 and 25-37 of the farm Moabsvelden 248 IR, situated in the Victor Khanye Local Municipality, under Delmas Magisterial District, Mpumalanga Province.

### 5.1 Climate

In Delmas Mpumalanga summers are long, warm, and partly cloudy and the winters are short, cold, dry, and clear. Over the course of the year, the temperature typically varies from 34 °F to 79 °F and is rarely below 28 °F or above 86 °F. Figure 2 below shows the mean annual rainfall In all the portions of the proposed area.



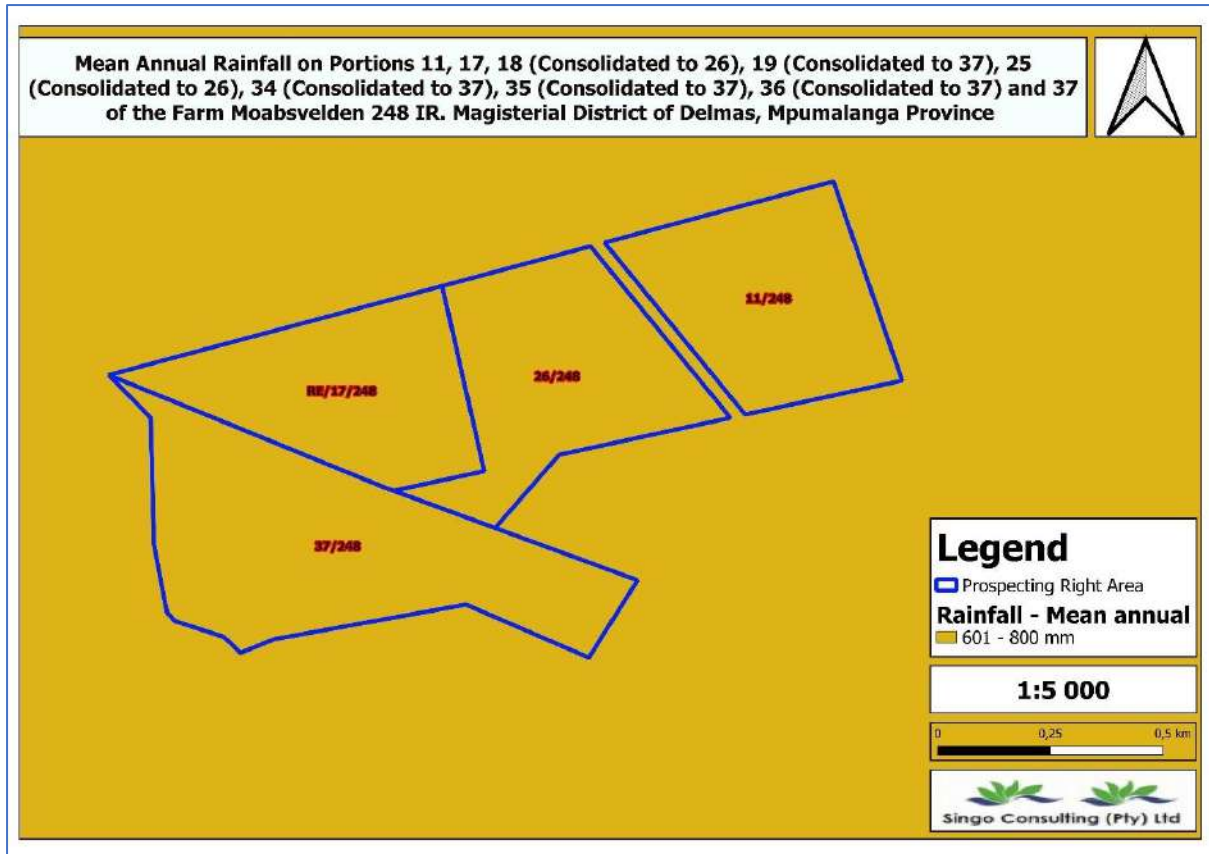


Figure 2: Mean annual rainfall within the prospecting right area.



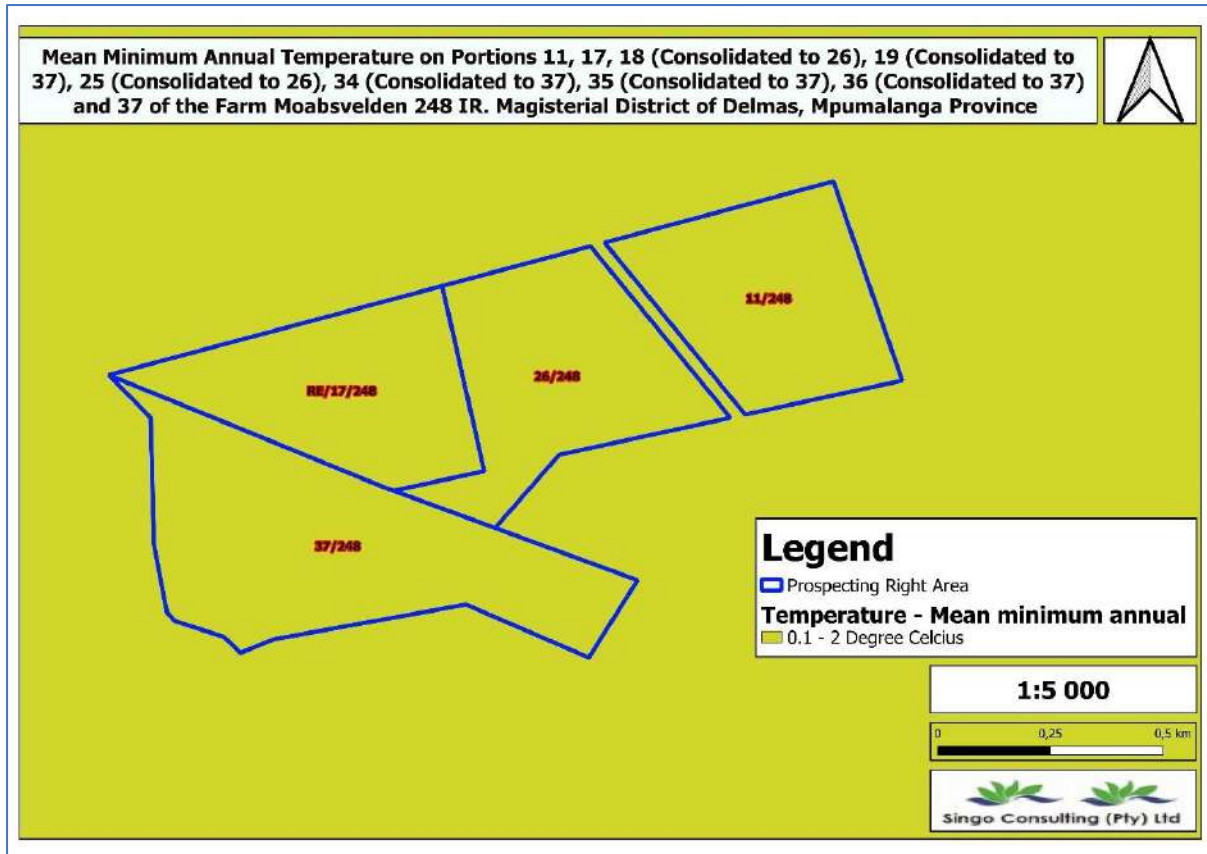


Figure 3: Mean minimum temperature within the prospecting right area

## 5.2 Soil classes of the project area

From a desktop study that was conducted, a map in Figure 4 was produced. This map shows that the prospecting right area is covered with yellow and red structureless soils with Plinthic horizon. This type of soil means that water is removed from the soil very rapidly. Soils commonly are coarse textured and have very high permeability or are very shallow.

Important characteristics of the structureless soils are:

- Free-draining soil.
- Gritty when touching.
- Dries out quickly.
- May lack nutrients Easy to cultivate Warms up quickly in spring.
- Chemically inert.
- Contains Sharp, angular and durable grains.





### **Red apedal soils**

These soils have a structure that is weaker than moderate blocky or prismatic in the moist state, if structure is borderline, CEC (NH<sub>4</sub>OAc, pH7) per kg soil is less than 11 cmol (+)/kg soil. These soils are non-calcareous in any part of the horizon which occurs within 1500mm of the soil surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. It does not have alluvial or aeolian stratifications. The B horizons that have uniform colours, falling within the range defined as red and that in the moist state, lack well-formed peds other than porous micro-aggregates, qualify as red apedal. The concept of these macroscopically weakly structured or structureless materials embraces that kind of weathering that takes place in a well-drained oxidizing environment to produce coatings of iron oxides on individual soil particles (hence the diagnostic red colours) and clay minerals dominated by non-swelling 1:1 type.

### **Yellow apedal soil**

This horizon does not have grey colours in the dry state as defined for the E horizon. Although colour must be substantially uniform, some variability is permitted, for example mottles or concretions which are insufficient to qualify the horizon as a diagnostic plinthic B, faunal reworking may also result in acceptable colour variegations. It is non-calcareous within any part of the horizon which occurs within 1500mm of the surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. Does not have alluvial or aeolian stratifications., directly underlies a diagnostic topsoil horizon or an E horizon. Yellow- brown apedal B horizons occur over approximately the same climatic spread as their red counterparts and so are also very widely distributed throughout the country. They may be found on all types of parent material.



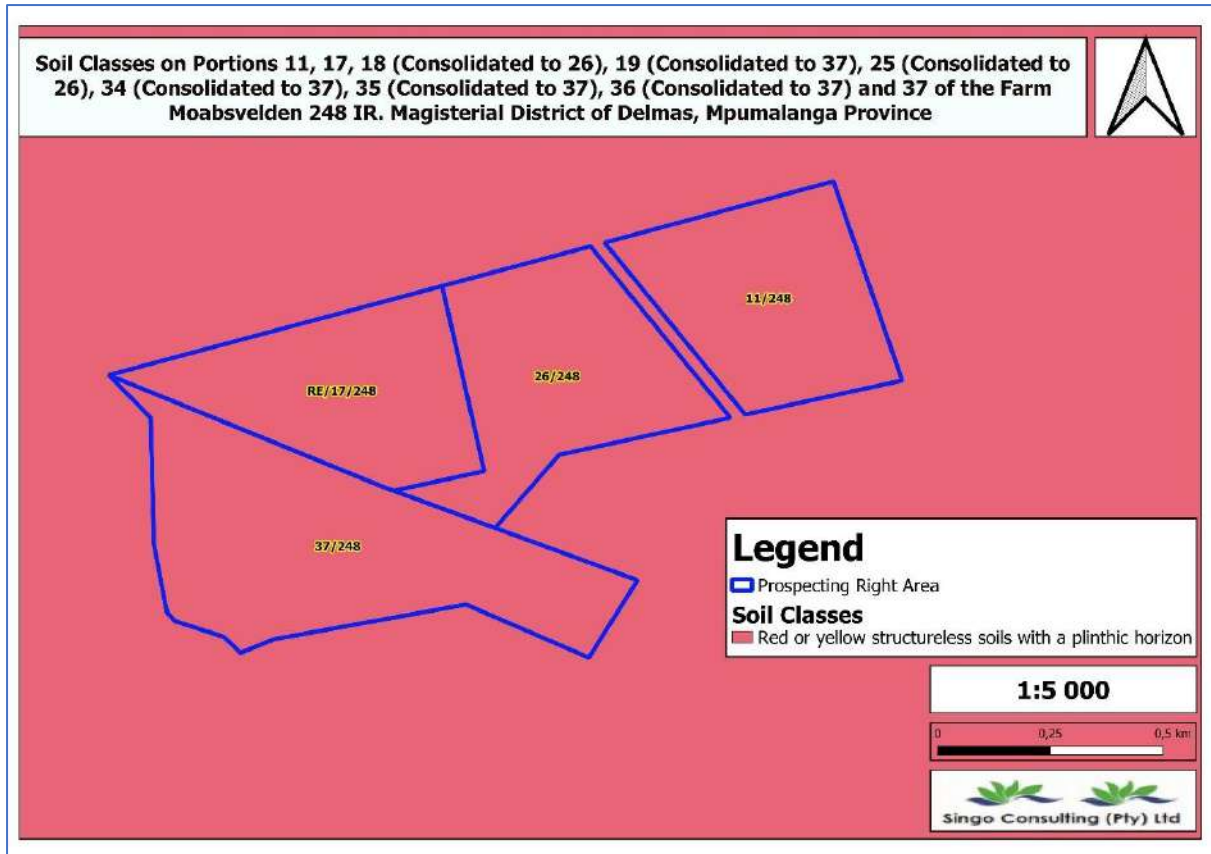


Figure 4: Soil classes map.

### 5.3 Land Use

Figure 5 below is a map of the land uses found in the area. The prospecting right area is covered with Mines, cultivated land, Built- up land, wetlands, and waterbodies. The bigger portion of the prospecting right area is uncategorised.

#### 5.3.1 Mines

The larger portion of the proposed area is covered with mines. A mine is an excavation in the earth for extracting minerals.

#### 5.3.2 Built- up

Land Built up land refers to an area covered with buildings. The land can comprise of residential land, land used for transport and communication or pits and mine.

#### 5.3.3 Cultivated land

Cultivated land is the area of land that are ploughed and/or prepared for raising crops (excluding timber production).



It includes areas currently under crop, fallow land and land being prepared for planting.

### 5.3.4 Waterbodies

Waterbodies is an area of (generally permanent) open water, it includes natural and man-made waterbodies, which is either static or flowing, and fresh, brackish, and salt-water conditions. For this prospecting area Waterbody have been observed on the northern side of the site area and has been classified as unchanneled valley-bottom wetland.

### 5.3.5 Wetlands

A wetland is a distinct ecosystem that is flooded by water, either permanently or seasonally, where oxygen- free processes prevail.

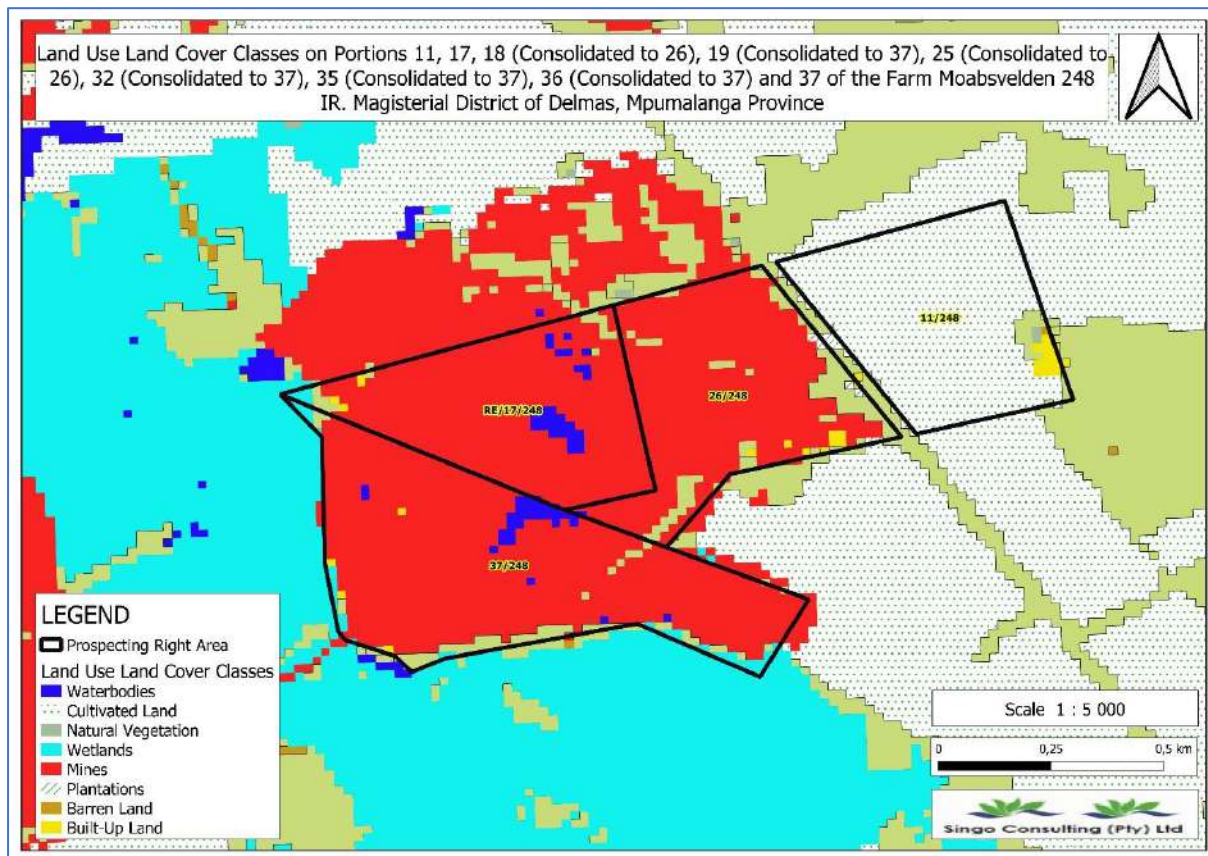


Figure 5: Land use classes



## 6 Potential Environmental Impacts

During the Coal prospecting phase, the work carried out will mainly be mapping, logging, sampling, and diamond core drilling to investigate the existence of the expected mineralization, the thickness of the orebodies and its distribution. Core logs will be taken off-site to be sampled and analysed. The development footprint is expected to be a fraction of the application area size, which is estimated to be 105.569 hectares.

The topography and natural drainage lines may also be disturbed. The overall impact will be loss of topsoil as a result of erosion as well as potential contamination of the soil, fuel, and oils (hydrocarbons) as a result of the drill rigs that will be used during core drilling.

Prospecting activities will however not change or alter the land use. The pathways that will be developed during prospecting will be temporary and not paved, they should be rehabilitated and closed after prospecting. No toxic chemicals are anticipated to flow within the soils as the operation will not involve any mining activity or blasting.

## 7 Impact Assessment

The environmental impact assessment is designed to identify impacts related to prospecting activities and how to mitigate these impacts. It is anticipated that with the correct mitigation measures being put in place these impacts can be reduced. The rating of impacts is based on the type of activity that will be undertaken. Similar activities that will have the same impact to soil, land use and land capability have been grouped together and discussed for particular impacts, such as loss of topsoil as a resource.

When the impact rating is significantly different because of the activity, a separate rating has been given for those particular activities. The activities, such as chrome ore prospecting would potentially have a lower impact on soil, land capability and land use as these areas are less disturbed. For the purpose of this impact assessment activities that are located within relatively undisturbed areas have been rated together and all other activities falling within the prospecting area have been rated together with respect to the level of the impacts.

### 7.1 Prospecting Phase

Topsoil will not be removed as there will not be any mining related activities taking place. No foundation excavations will be needed for fuel storage depot as fuel will be transported to site daily during the drilling phase.



Table 4: Loss of topsoil as a resource, erosion, and compaction

Criteria	Details / Discussion
<b>Description of impact</b>	<p>During diamond core drilling the land clearance and earthworks will have a minor impact. Even though soil will be cleared from most of the areas where infrastructure will be placed, areas that are not disturbed by the drilling will remain in their current land use.</p> <p>The boreholes footprint will be minimal. The pathways to be created to provide access of the drill rig can cause compaction of soil.</p> <p>During clearance of vegetation there is a greater risk, when compared to other areas, that topsoil would be exposed and there are potential risks for increased erosion in these areas during rainfall events, resulting in a potential loss of soil as a resource. In addition, wind erosion would be greater as these areas are exposed as a result of the removal of vegetation.</p>
<b>Mitigation required</b>	<ul style="list-style-type: none"> <li>• Pathways are to be stripped when the soil is dry (as far as practical possible), as to reduce compaction; and</li> <li>• To be stripped according to the stripping guideline and management plan, and further recommendations contained within the rehabilitation plan.</li> <li>• Minimize the period of exposure of soil disturbances through a planning schedule</li> </ul>

## 8 Soil Management Plan

### 8.1 Background

More important than chemical imbalances which can be easily restored at cost, is soil compaction and volumes of replacement during soil reclamation. Heavy drill rigs equipment to be used during prospecting may lead to areas of decreased soil and land capabilities. Such areas have limited land use options and specialized management needs. However, this impact will be minimal.





## 8.2 Physical mitigation

The soil to retain and supply nutrients must be assessed during prospecting operation and during borehole rehabilitation phase. Erosion and storm water runoff management measures as per EMP requirement to prevent or if prevention is impossible, limit any erosion from occurring on the drilling areas and surroundings and any storm water runoff from the activity's areas. Good quantity and quality topsoil are an essential ingredient in the process of soil reclamation.

Factors leading to decay in soil quality are:

- Contamination impacts on soil quality
- Erosion impacts on soil volume
- Undifferentiating storage impacts on soil quality and
- Undifferentiating use impacts on soil volume.

Therefore, care must be taken during the prospecting process to prevent compaction and to replace soil volumes back to a representative pre-process plant soil and land capability while emulating the pre prospecting landscape.

## 8.3 Soil quality indicators

Deciding on and monitoring soil quality indicators during soil impacts and reclamation can significantly improve the chances of reclaiming soil to a sustainable resource. The following actions should form part of monitoring soil quality and rehabilitation sustainability:

- Visual soil assessment by a specialist
- Soil quality monitoring system
- Visual assessment should include specialist scoring of water ponding, plant vigour, yield, tilth, earthworms, runoff, ease of tillage, soil colour, soil aroma, soil structure and cloddiness
- Soil quality monitoring should include bulk density, infiltration rate, water holding capacity, electrical conductivity, pH, soil nitrate and microbial activity.

To ensure sustainability from agricultural soil potential point of view, reclamation should be reclaimed back to cultivation land capacity. Organic matter must be added back into the soil so that soil should be pre-mixed with organic material and placed back last to a depth of at least 300 mm. Continuous visual and soil quality monitoring as mentioned under the soil quality indicators above should ensure that the best possible soil reclamation procedure is





followed. Vehicle movements must be restricted to freshly dumped soil to prevent compaction as much as possible.

## 9 Conclusion and Recommendations

A soil, land use and land capability investigation were conducted for the proposed Coal prospecting project. The topographical, land use and soil type data available for the site were compiled using both desktop and field assessment data to determine the potential impacts of the prospecting activities.

The following conclusions are made in this study:

- The soils within the proposed area are characterized by red, yellow and plinthic, structureless soils.
- The prospecting right area is covered with Mines, cultivated land, Built- up land, wetlands, and waterbodies.
- Coal prospecting infrastructure will have less impact on soils and footprint will be minimal.
- It is anticipated that the Coal prospecting activities will not lead to severe loss of soils and degradation of agricultural potential.
- Rehabilitation will be conducted after the period of Coal prospecting activities cease.
- The core from the boreholes with coal ore material will be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during precipitation events.



## 10 References

Land Type Survey Staff. 1972 – 2006. Land Types of South Africa: Digital map (1:250 000 scale) and soil inventory databases. ARC-Institute for Soil, Climate and Water, Pretoria.

Schoeman, J.L., van der Walt, M., Monnik, K.A., Thackrah, A., Malherbe, J. and le Roux, R.E., 2000. The development and application of a land capability classification system for South Africa. ARC-ISCW Report No GW/A/2000/57, ARC-Institute for Soil, Climate and Water, Pretoria  
Soil Classification Working Group, 1991.

Soil Classification – a taxonomic system for South Africa. ARC-Institute for Soil, Climate and Water, Pretoria.



## Appendices

### Appendix A: Specialists qualifications

Available upon request.

### Appendix B: Site Pictures

