mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT

AND

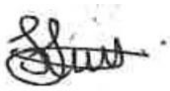
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

NAME OF APPLICANT:	**BONIZENZO HOLDINGS (PTY) LTD**
CELL NO:	**078 173 9680**
Fax No:	**086 247 6794**
PHYSICAL ADDRESS:	**POSTNET Suite MW 539, Private bag X 1838, Middelburg, 1050**
FILE REFERENCE NUMBER SAMRAD:	**NW 30/5/1/1/2/13296 PR**
MINING RIGHT REFERENCE NUMBER:	**NW 30/5/1/1/2/13296 PR**

DOCUMENT REVIEW AND APPROVAL

Client	Bonizenzo Holdings (Pty) Ltd (**'Bonizenzo'**)
Report Type:	Draft Basic Assessment Report and Environmental Management Programme for the proposed Prospecting Right Application with Bulk Sampling in respect of the Remaining Extent of Portion 10, 21 and Portion 24 of the Farm Rooderand 41 JP, Remaining Extent, Portion of Portion 1 and Portion 2 of the Farm Rooderand 902 JP in the Magisterial District of Marico in Ngaka Modiri Molema District Municipality at Ramotshere Moiloa Local Municipality, North West Province.
Project Name:	Rooderand Prospecting Right Application
Project Number:	LEM-A0534-02-2022

Name and Surname	Position and Qualifications	Responsibility	Signature	Date
Mafego Johny	National Diploma (Environmental Sciences)	Report Compiler		07 March 2022
Lindokuhle Nsibande	Environmental Scientist BSc Honours Hydrology SACNASP Registration Number: 121682	Report Reviewer		09 March 2022
Ralph Repinga (Pr Sci.Nat)	Principal Environmental Scientist MSc (Environmental Sciences) SACNASP Registration Number: 400097/02	Report Reviewer		11 March 2022

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Part A: Scope Assessment and Basic Assessment report

1. INTRODUCTION

Bonizenzo Holdings (Pty) Ltd (Hereafter referred as '**Bonizenzo**') (The applicant) as will submit an application for a Prospecting Right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an Application for Environmental Authorization in terms of Chapter 4 of GNR 982, the EIA regulations 2014, as amended by GNR 327 promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA) as amended to prospect for diamond (in kimberlite), dalusite, dimension stone (general), glass sand, heavy minerals (general), lithium ore, mercury, niobium (columbium) ore, pyrite, silicon ore, tantalum / niobium ore, tin ore, tungsten ore, aluminum ore, uranium ore, vermiculite, zinc ore and zirconium ore.

The proposed project that will aim to ascertain if economically viable mineral deposits exist within the application area. In order to undertake prospecting activities, Bonizenzo will require a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002). The Applicant is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report (BAR). Licebo Environmental and Mining (Pty) Ltd (LEM) have been appointed by Bonizenzo to compile the BAR (this report) in support of the Prospecting Right application that will be submitted by LEM on behalf of Bonizenzo, which in turn will be submitted to the DMR for adjudication.

This draft BAR will be designed to meet the requirements for a BAR and Environmental Management Programme (EMPR) as stipulated in the 2014 EIA Regulations promulgated under the NEMA. The adjudicating authority for this Application will be the Department of Mineral Resources and Energy (DMRE), and this report has been compiled in accordance with the applicable DMR guidelines and reporting template.

The environmental authorisation process for prospecting right of various commodities that will be undertaken on Remaining Extent of Portion 10, 21 and Portion 24 of the farm Rooderand 41 JP, Remaining Extent, Portion of Portion 1 and Portion 2 of the farm Rooderand 902 JP. This application process will be undertaken in terms of GN R 982, the EIA Regulations 2014, as amended with specific to GN R 983 Listing Notice 1 as amended by GNR 327 in respect to the following listed activities: 12, 20, 24, 27 and 28 which will involve the compilation of a Basic Assessment (BA) and Environmental Management Programme report (EMPr) and related waste management listed activities in terms of GN R 633 of the National Environmental Management Waste Act, Act 59 of 2008 as amended, listed activity 15. The proposed

prospecting right area covers an area of approximately 3280 hectares. The area is located approximately 45 kilometres from the town of south-west of Groot Marico within the Magisterial District of Marico in Ngaka Modiri Molema District Municipality at Ramotshere Moiloa Local Municipality, North West Province.

The Prospecting Right Application and Application for Environmental Authorisation will be submitted to the DMRE via the South African Mineral Resources Administration (SAMRAD) in March 2022. The DMRE accepted the Application for Environmental Authorisation on the 01st of February 2022. The Draft BAR (this report) will be made available to Interested and Affected Parties (I&AP's) for comment from the 03rd of March 2022 to 04th of April 2022. All comments received during this period will be included in the draft BAR to be submitted to the DMR for adjudication.

1.1. DETAILS OF THE EAP

LEM was appointed by the Applicant as the Environmental Assessment Practitioner (EAP) to compile this report. The contact details of the LEM consultant who compiled the report are as follows:

Practitioner company details	Licebo Environmental and Mining (Pty) Ltd
Name of the Practitioner	Mandla Ralph Repinga
Postal Address	Postal Address: P.O. Box 20519, Del Judor Extension 4, Witbank, 1044
Tel No.:	013 692 0212 or 083 257 8869
Fax No.:	086 667 1169
E-mail address:	**ralph.repinga@licebo.co.za**

1.2. EXPERTISE OF THE EAP

1.2.1. QUALIFICATIONS OF THE EAP

In terms of Regulation 13 of the EIA Regulations, 2014, an independent Environmental Assessment Practitioner (EAP), must be appointed by the applicant to manage the application. LEM has been appointed by the Applicant as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that LEM is:

1. Objective and independent;
2. Has expertise in conducting EIA's;

3. Comply with the NEMA, the Regulations and all other applicable legislation;
4. Taking into account all relevant factors relating to the application; and
5. Provides full disclosure to the applicant and the relevant environmental authority.

The declaration of independence of the EAP and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultants that were involved in the BAR process and the compilation of this report are attached as Appendix 1.

1.2.2. SUMMARY OF THE EAP'S PAST EXPERIENCE

Ralph Repinga has more than 18 years of experience in the field of Environmental Impact Assessment and management, with 12 of those years spent in the coal mining sector. He is a registered professional environmental scientist with a MSc (Environmental Sciences) degree and registered professional natural scientist with the South African Council for Natural Scientific Professions (SACNASP) (Registration number: 400097/02).

He started his career as an Environmental Officer with the Mpumalanga Department of Environmental Affairs and Tourism. He also worked for Transvaal Sugar Ltd as a Safety, Health, Environmental and Quality Training Officer. In March 2001, he was appointed by Ingwe Collieries (now BHP Billiton Energy Coal South Africa (BECSA)) started as an Environmental Officer to Environmental Manager (for 6 years) within its various operations. He is currently working as the Managing Director and environmental consultant for Licebo Environmental and Mining (Pty) Ltd (LEM) since March 2012. He has an extensive environmental management experience especially focusing mostly construction projects, water management and coal mining industry.

As part of LEM, he has been involved in a number of environmental projects which includes environmental auditing (auditing of environmental authorisations and approvals), compilation of EIAs, EMPRs, WULs, Waste Management Licences, undertaking public participation, socio-economic assessments supervision of environmental projects and other environmental related projects.

Table 1: List of projects completed by EAP

Company	Project	Reference Person	Contact
Amatala Mining Services cc	Nooitgedacht prospecting right applications including consultation process and environmental management plans – 2012	Jimmy Mjoli	082 575 3673 jimmy@amatala.co.za

Company	Project	Reference Person	Contact
BHP Billiton Energy Coal SA (Pty) Ltd (BECSA) Khutala Colliery	EIA, EMP and Water Use Licence applications for Khutala Southern Access Extension –2012/2013.	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)	082 417 6901 jaco.kleynhans@telkomsa.net 082 458 7746 clinton.lee@south32.net
Amatala Mining Services cc	Kreiger Holm prospecting right applications including consultation process and environmental management plans – 2013	Jimmy Mjoli	082 575 3673 jimmy@amatala.co.za
BHP Billiton Energy Coal SA (Pty) Ltd (BECSA) Wolvekrans Colliery	Undertaking and compilation of a Basic Assessment Report for Fuel Storage Facilities at Wolvekrans Colliery – 2016	Collen Mabada	Tel: 013 689 4028 Cell: 079 506 7249 E-mail: collen.mabada@south32.net
BHP Billiton Energy Coal SA (Pty) Ltd (BECSA) Wolvekrans Colliery	Undertaking and compilation of a Basic Assessment Report for Relocation and Construction of a 132 kV Powerline at Wolvekrans Colliery – 2016	Collen Mabada	Tel: 013 689 4028 Cell: 079 506 7249 E-mail: collen.mabada@south32.net
Sebenzani Trading 94	Kaallaagte prospecting right applications including consultation process and environmental management plans – 2015	Jacob Mnisi	061 889 3857 sebenzani.trading.94@webmail.co.za
Sebenzani Trading 94	Kafferstad prospecting right applications including consultation process and environmental management plans – 2015	Jacob Mnisi	061 889 3857 sebenzani.trading.94@webmail.co.za

Company	Project	Reference Person	Contact
Groenfontein Collieries (Pty) Ltd	EIA, EMP and Water Use Licence applications for Groenfontein Colliery – 2016 (In Progress).	Malose Ledwaba	Tel: 012 253 1164 Fax: 012 253 1163 Cell: 083 378 0054
BHP Billiton Energy Coal SA (Pty) Ltd (BECSA) Khutala Colliery	EIA, EMP and Water Use Licence applications for Khutala Colliery: Khutala Opencast Mining Project – 2013/2014	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)	082 417 6901 jaco.kleynhans@telkomsa.net 082 458 7746 clinton.lee@south32.net
Amatala Mining Services cc	Makgato prospecting right applications including consultation process and environmental management plans – 2013/2014	Jimmy Mjoli	082 575 3673 jimmy@amatala.co.za
BHP Billiton Energy Coal SA (Pty) Ltd (BECSA) Pegasus Coal Mine	Conducting and compilation of public participation, community-based survey and socio-economic assessment for Pegasus Coal Mine Opencast operation – 2014	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)	082 417 6901 jaco.kleynhans@telkomsa.net 082 458 7746 clinton.lee@south32.net
Amatala Mining Services cc	Schulspruit Prospecting right application including consultation process and environmental plans-2016 (in Progress)	Peter Makgato	Peter@amatala.co.za
Amatala Mining Services cc	Nooyensfontein prospecting right environmental authorisation applications including consultation process, Basic Assessment and environmental management plan – 2016 (Completed)	Jimmy Mjoli	+27 82 575 3673 jimmy@amatala.co.za

Company	Project	Reference Person	Contact
Mahulong Projects cc	Schulspruit and Palmietfontein prospecting right environmental authorisation applications including consultation process, Basic Assessment and environmental management plan – 2016 (Completed)	Peter Makgato	+27 82 575 3673 jimmy@amatala.co.za
Ikoti Coal (Pty) Ltd: KwaZanele Colliery	Conducting and compilation of the Integrated Water Use Licence Application (IWULA) – 2015/2016	Zabilon Inama (Director)	Tel: +27 78 520 8222 E-mail: zabiloninama@yahoo.co.uk
Universal Coal Development I (Pty) Ltd	Undertaking and compilation of Kangala Colliery EMP amendment to include the Middelbult Section – 2016 (In progress)	Minah Moabi (Chief Environmental Manager)	Tel: +27 12 460 0805 Cell: +27 76 431 3968 E-mail: m.moabi@universalcoal.com
Anglo American Inyosi Coal (Pty) Ltd (AAIC) Zibulo Colliery	Compilation of Zibulo Colliery Underground Operations Water Use Licence Application and Integrated Water And Waste Management Plan (IWWMP) for undermining of watercourses and underground water storage facilities – 2017 (In progress)	Melchior Joseph (Environmental Coordinator)	Tel: +27 13 643 4455 Cell: +27 83 292 1984 E-mail: melchior.joseph@angloamerican.com
South32 Coal Holdings SA (Pty) Ltd (BECSA) Wolvekrans Colliery	Undertaking and compilation of a Basic Assessment Report for the Relocation and Construction of Power Line at Wolvekrans Colliery – 2016	Collen Mabada	Tel: 013 689 4028 Cell: +27 79 506 7249 E-mail: collen.mabada@south32.net
Mpisi Coal (Pty) Ltd	Undertaking and compilation of Mpisi Coal EIA, EMPr, WMLA and WULA – 2017 (In progress)	Dr Cedric Xulu (Director)	Cell: +27 82 706 9720 E-mail: Cedric.Xulu@nohaduinvestments.co.za

1.3. LOCATION OF THE OVERALL ACTIVITY

The table below provides details on the properties that fall within the Prospecting Right/ Environmental Authorisation Application Area.

Table 2: Location of activity

Farm Name:	Remaining Extent of Portion 10, 21 and Portion 24 of the farm Rooderand 41 JP, Remaining Extent, Portion of Portion 1 and Portion 2 of the farm Rooderand 902 JP
Application Area (Ha):	3280 ha
Magisterial District:	The proposed development is situated within Magisterial District of Marico in Ramotshere Moiloa Local Municipality.
Distance and direction from nearest town	The proposed development is situated approximately 45 km from town of Groot Marico
21-digit Surveyor General Code for each farm portion	**Remaining Extent of Portion 10 of the farm Rooderand 42 JP** T-0-JP-000-0000-00041-00010 **Remaining Extent of Portion 21 of the farm Rooderand 4 JP** T-0-JP-000-0000-00041-00021 **Potion 24 of the farm Rooderand 41 JP** T-0-JP-000-0000-00041-00024 **Remaining Extent of the farm Rooderand 902 JP** T-0-JP-000-0000-00902-00000 **Portion of Portion 1 of the farm Rooderand 902 JP** T-0-JP-000-0000-00902-00001 **Portion 2 of the farm Rooderand 902 JP** T-0-JP-000-0000-00902-00002

The prospecting right/EA application boundary is described by the following coordinates.

Table 3: Application Area Boundary Coordinates

Point	Longitude	Latitude
A	26.307433	-25.126815
B	26.348540	-25.099693
C	26.388241	-25.099693
D	26.380301	-25.139327
E	26.378545	-25.156580
F	26.358989	-25.154192
G	26.302877	-25.161320
H	26.292536	-25.204367
I	26.287973	-25.203529
J	26.282622	-25.196445
K	26.280119	-25.159213
G	26.302877	-25.161320
A	26.307433	-25.126815

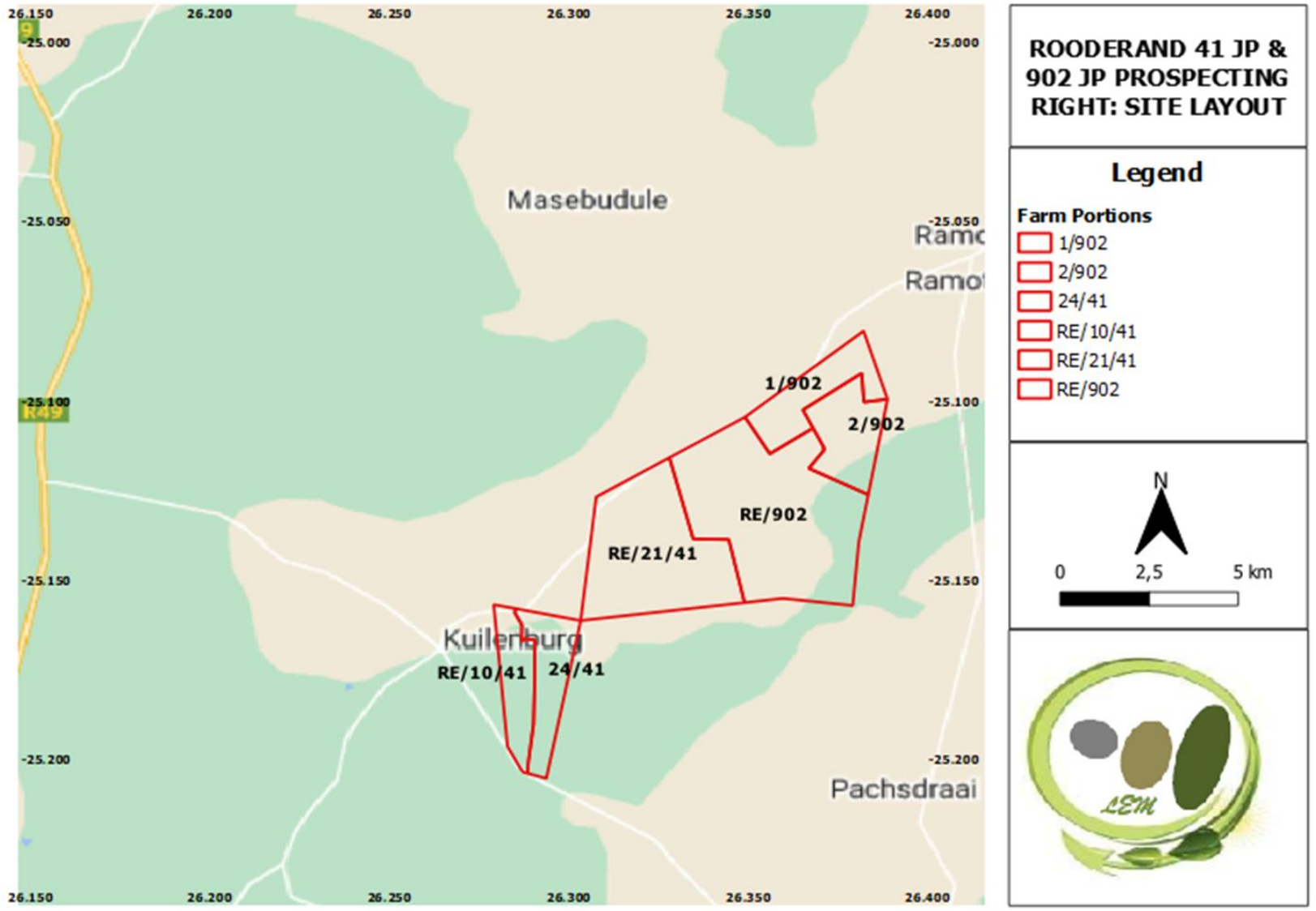


Figure 1: Topographical sheet site layout plan of the proposed application study area with its respective farms.

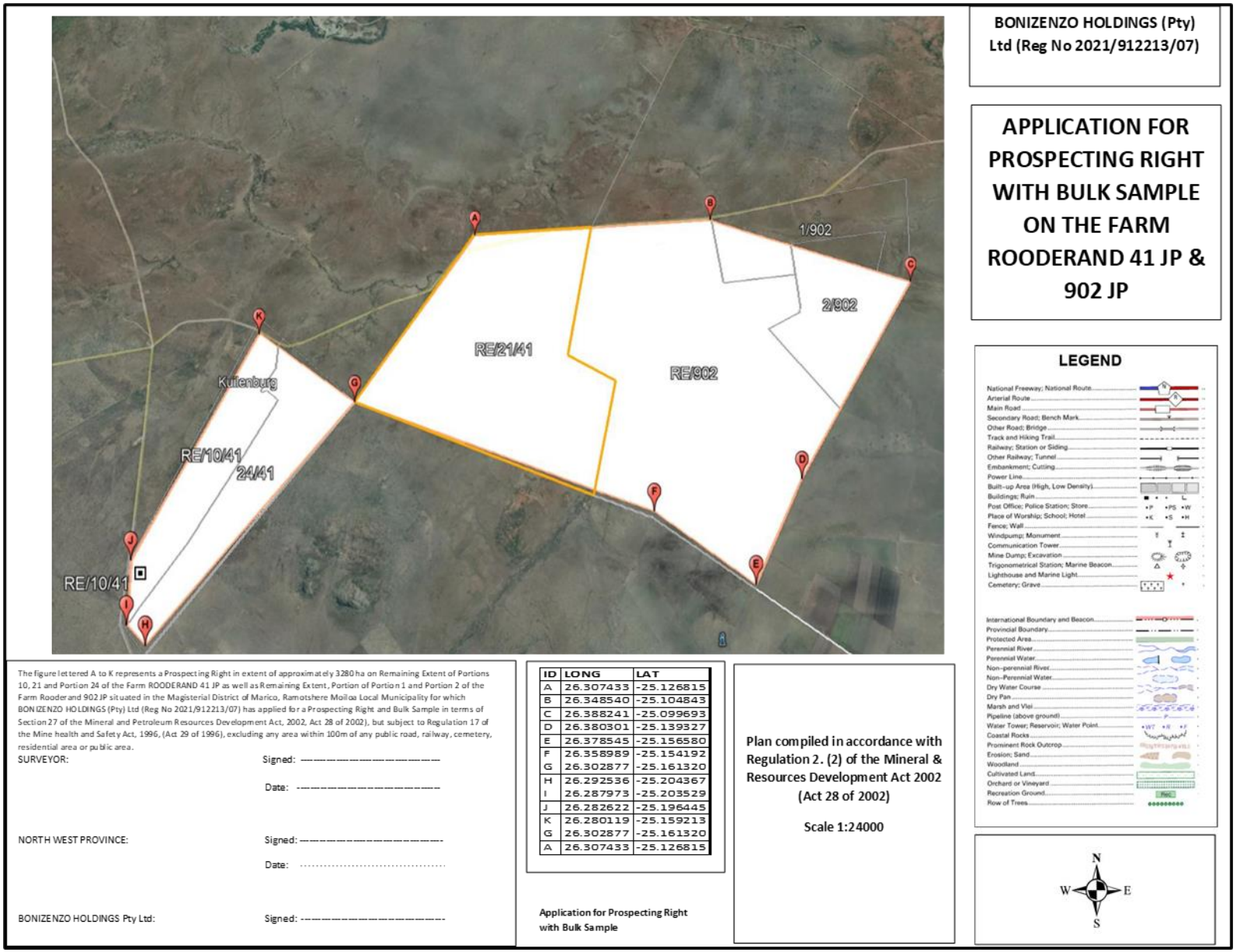


Figure 2: Locality Map

2. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Both non-invasive and invasive prospecting activities will be undertaken as part of the proposed Prospecting Work Programme (PWP). The application will follow a phased approach, where the prospecting work program is divided into several sequential phases.

Figure 2 above depicts the proposed prospecting area, the proposed areas of interest within the application area will be defined within the course of prospecting activities. It is anticipated that the invasive program will consist of 10 core boreholes that will be drilled during Phase 1 with a footprint of approximately 300 m^2 each. Vegetation will be cleared at the borehole locations within the application area. Minor access tracks will be created to access the proposed borehole sites where there are no existing roads. The total length of the access routes is anticipated to be 5 000 m and the approximate width is 3 m.

At the end of each phase there will be a brief period of compiling and evaluating results. The results will not only determine whether prospecting proceeds, but also the manner in which it will go forward. The applicant will only action the next phase of prospecting, once satisfied with the results obtained in the previous phases. In addition, smaller, non-core parts of the prospecting work program will be undertaken, if warranted. A description of the planned invasive and non-invasive activities is detailed below.

2.1. DESCRIPTION OF PLANNED ACTIVITIES

Phase 1: Geological Mapping and Desktop study

- Compilation of historical prospecting data;
- Analysis of existing data and maps to further understand prospecting area structure & geology; and
- Initial targeting and ranking of prospective areas

Phase 2: Geophysics

Trial pits to a depth of approximately 2 meters will be required for each site option being considered. It is assumed that up to 4 sites will be included and that up to 5 trial pits will be required with a total of 20 trial pits. Selected materials will be sampled and sent to the lab for preliminary strength testing.

Borrow material (borrow Sites) will need to be identified and some trial pits to obtain samples will need to be collected. Material characterization will need to be completed. An aerial electromagnetic survey will be conducted.

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

The field mapping will be focused on potentially prospective areas (Bushveld) to improve understanding of the structure & geology in order to define targets for ground-based geophysics as well as to be able to interpret geophysical results. Geological mapping will be on a scale suitable for the observed geological variability and will be conducted by an in-house well-trained and highly experienced geologist. During the geological field mapping activity soil and litho-sampling along with analysis (XRF & or assaying) may be conducted to determine prospective horizons.

The primary ground-based geophysical technique that will be employed will be time-domain electromagnetics (TDEM) utilizing a new state-of-the-art SQUID electromagnetic sensor. Existing airborne EM and aeromagnetic coverage will guide the ground follow-up strategy. Additional techniques, such as controlled source audio magnetotellurics (CSAMT) and direct current resistivity / induced polarization, might be employed over prospective targets. Please refer to Section 6 of the PWP for further details on these methods. No bulk sampling work is to be carried out during this prospecting program.

Initial prospecting will be carried out by the company itself, utilizing its own in-house geologists to conduct and oversee the work. Drilling will be outsourced to a local drilling company.

2.2. DESCRIPTION OF PLANNED INVASIVE ACTIVITIES

These activities result in land disturbances e.g. sampling, drilling, etc.

Drilling

The targeting of all drilling activities will be dependent on the results obtained during the preceding phases of prospecting, namely the geological mapping and geophysical surveying.

Diamond drilling will be of the standard HQ or NQ size. Down hole surveys will be done every 50m in each hole. Core will be marked, logged, photographed and sampled according to the standard of the applicants logging and sampling procedures.

Down the hole geophysical surveying will take place upon completion of the exploratory boreholes along with Ground EM surveys to determine positions of conductors.

Rehabilitation of drill sites will be done according to an approved Environmental Management Programme.

Assaying

Rock chip / soil samples will be sent to a laboratory of the applicant's choice to be crushed, split, pulverized and assayed. Samples from core will be split using a core cutter before being sent to the laboratory for analysis.

Metallurgical Test Work

These tests will be done by and in consultation with a preferred and accredited Laboratory of the applicant's choice.

Bulk sampling

This procedure will involve

Phase 4: Boreholes

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 work will consist of:

Percussion Rotary Air Blast (RAB) drilling may be carried out for pre-collaring of diamond drill boreholes or for obtaining samples if significant depth of cover is encountered over particular targets.

- Access and drill site preparation
- Diamond core drilling
- Sampling and assaying
- Quality assurance and quality control programs
- Down hole geophysics
- Rehabilitation of drill sites
- Recording & Integration of data

Phase 5: Bulk sampling

A maximum of 3 pits will be excavated through truck and shovel extraction methods to prepare samples to generate market evaluation samples, the pits will be excavated in a potential mining site by removing less than 500,000 tons of minerals for the purposes of obtaining site−specific data to assess the quality and quantity of the ferrous mineral deposits and of collecting data from and analysing the excavated materials in order to prepare the application for a mining permit or right or for any other approval.

2.3. Listed and specific activities

With reference to the proposed prospecting the following listed activities in terms of NEMA EIA Regulation 2014 Government Notice (GN R) 982 will be triggered. The listed activities triggered are mainly associated with the area that will be cleared for the development of the project related infrastructure

Table 4: Listed and specific activities applied as part of this project

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, **etc** **E.g. for mining**, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, stormwater control, berms, roads, pipelines, power lines, conveyors, etc.)	**The aerial extent of the Activity** **Ha or m²**	**LISTED ACTIVITY** (**Mark with an X where applicable or affected).**	**APPLICABLE LISTING NOTICE** ***(GNR 983, GNR 984 or GNR 985)***	**WASTE MANAGEMENT AUTHORISATION** (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
The development of— (ii) infrastructure or structures with a physical footprint of 100 square metres or more;	Approximately 7 ha	Activity Number 12	GNR 983 - Listing Notice 1	N/A
Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to the prospecting of a mineral resource[,]; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)]	Approximately 7 ha	Activity Number 20	GNR 983 - Listing Notice 1	N/A
The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of linear activity; or	Approximately 7 ha	Activity Number 27	GNR 983 - Listing Notice 1	N/A
Residential, mixed, retail, commercial, industrial or institutional developments where	Approximately 7 ha	Activity Number 28	GNR 983 - Listing Notice 1	N/A

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, **etc** **E.g. for mining**, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, stormwater control, berms, roads, pipelines, power lines, conveyors, etc.)	**The aerial extent of the Activity** **Ha or m²**	**LISTED ACTIVITY** (**Mark with an X where applicable or affected).**	**APPLICABLE LISTING NOTICE** ***(GNR 983, GNR 984 or GNR 985)***	**WASTE MANAGEMENT AUTHORISATION** (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;				
The establishment or reclamation of a residual stockpile or residue deposit resulting from activities which require a prospecting right or mining permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002).	Approximately 7 ha	Activity Number 15	GNR 633	X

Environmental authorisation for the above-mentioned listed activities will be applied for through the undertaking of a Basic Assessment (BA) Process as stipulated in Chapter 4, Regulation 19 of NEMA EIA Regulation 2017 amendments.

3. POLICY AND LEGISLATIVE CONTEXT

Table 5: Applicable policies, guidelines and legal requirements for this project

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
EIA Process and Listed Activities	**Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MRPDA)**	Section 2 of NEMA	Sets out the principles of environmental management	Section 2 principles are to be considered during the environmental impact assessment process	Whole document
		Chapter 5 of NEMA	Integrated environmental management, provides information on environmental management tools that promote the implementation of principles set out in Section 2 of NEMA	Environmental management tools are to be considered during the EIA process for the project.	Whole document
		Regulation 982	Chapter 2: Timeframes Chapter 3: General requirements for applications Chapter 4: Application for environmental authorisation Part 1 and 2) Chapter 6: Public participation process Chapter 7: General matters	Basic Assessment must be undertaken in accordance to Regulation 983.	Whole document

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
		Regulation 327 (Listing Notice 1)	Lists activities requiring a basic environmental assessment	Environmental authorisation must be obtained prior to commencement with listed activities	Whole document
		Guideline 4 and Guideline Series 7	Public Participation in support of the EIA regulations Public Participation Guideline	The public participation process to be followed.	Part A 3 (h) (ii) and Appendix 4 Public Participation Report
		Guideline 5	Assessment of Alternatives and Impacts	The EIA process to be followed	Part A 3 (g)

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
Mining	**Minerals and Petroleum Resources Development Act, Act 28 of 2002 as amended**	Regulation 527	Pollution Control and Waste Management Regulation	The following impacts are included in the draft BAR: Air quality impacts; Noise impacts; Shaft drilling associated impacts; Surface and groundwater impacts; Socio-economic impacts; Waste management; and Soil i	Part A 3 (h) and the EMPr
Biodiversity	**National Environmental Management: Biodiversity Act, Act 10 of 2004**	Regulation 151 Publication of critically endangered, vulnerable and protected species	No person may carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit.	A permit might be required prior to removal of endangered, vulnerable and protected species that might be identified and impacted within the study area.	No endangered, vulnerable and protected species have benn identified within the study area.

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
	National Forests Act, Act 84 of 1998	Notice 835 List of Protected tree species under the Act	No person may carry out a restricted activity on any protected tree except if there is a licence granted by the minister.	A licence might be obtained prior to removing any protected trees on site.	No protected trees have been identified within the study area.
	Mpumalanga Nature Conservation Act, Act 10 of 1998	Section 2 Protected Plants	No person shall remove protected plants without a permit.	A permit will be required for the removal of protected plants that may be cleared as a result of the extension project.	Part A 3 (h) (iv) (1) (b) Fauna and Flora and the EMPr
Waste Management	**National Environmental Management: Waste Act, Act 59 of 2008**	NEMWA variuos applicable sections	Waste management as part part of the project's construction and operation.	Management of waste that will be generated as part of this project to prevent environmental pollution and littering.	Part A 3 (h) (v) and the EMPr
Water Use	**National Water Act, 36 of 1998**	NWA variuos applicable sections	Water management as part part of the project's construction and operation.	Water management as part of this project to prevent the contamination and pollution of water resources.	Part A 3 (h) (iv) (1) (b) Surface Water and the EMPr

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
Protection of water resources	**National Water Act, 36 of 1998** **GN 704**	All applicable regulation forming part of GN 704	Regulations on use of water for mining and related activities aimed at the protection of water resources	Application for the exemption from the requirements of the identified activities.	Not applicable
Heritage Resources	**National Heritage Resources Act , Act 11 of 1999**	Section 38	Any person who intends to undertake a linear development exceeding 300m and undertaking a development exceeding 5 000m² must inform the responsible heritage resources authority.	South African Heritage Resources Agency (SAHRA) has to be notified of the proposed development.	Not applicable since there are no cultural and heritage sites that were identiifed within the study area.
Noise	**National Environmental Management: Air Quality Act, Act 39 of 2004**	Section 34	Control noise in general, by specific machinery, activities or in specified places or areas; Also with respect of determining definition for noise and maximum levels of noise.	Applicant is to adhere to the national standards for noise.	Part A 3 (h) (iv) (1) (b) Noise and the EMPr
Veld Fires	**National Veld and Forest Act 101 of 1998**	Chapter 4 Section 12	Places a duty on owners to prepare and maintain firebreaks. The procedure in this regard and the role of adjoining owners and the fire protection association are dealt with.	A firebreak must be maintained around the mine perimeter fence.	Part A 3 (h) (v) (1) and the EMPr

Applicable legislation and guidelines used to compile the report *(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 appliable to this activity and are to be considered in the assessment process)*				**How does this development comply with and respond to the legislation and policy context** *(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)*	**Reference where applied**
	Legislation	**Regulations / Guidelines**	**Description / Requirement**	**Project Implication**	
Land Use Management	**Conservation of Agricultural Resources Act 1983 (Act No 43 of 1983)**	Regulation 280 of 2001	Requires the landowner to manage agricultural resources i.e. the removal of invasive species, protection of soils against water and wind erosion and the management of water resources.	An alien invasive species plan must be developed for the mine and a land use and soil management plan must be developed.	Part A 3 (h) (iv) (1) (b) Fauna and Flora and the EMPr
	Ramotshere Moiloa Local Municipality Municipal By-Law on Spatial Planning and Land Use Management, 2016 Published under PN 4 in North West Provincial Gazette 7745 of 21 March 2017	Chapter 5: Development Management Part D: Dealing with the rezoning of land	Section 56. Application for amendment of a land use scheme by rezoning of land	Requires that an applicant, who wishes to rezone land, must apply to the Municipality for the rezoning of the land in the manner provided for in Chapter 6.	A separate application need to be done by the municipalty. Refer to the EMPr

4. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITY

Project need and desirability

The Broad-Based Socio-Economic Empowerment Charter for the South African Mining industry, hereafter referred to as “the Mining charter”, is a government instrument designed to effect sustainable growth and meaningful transformation of the mining industry. The Mining Charter seeks to achieve the following objectives:

- To promote equitable access to the nation’s mineral resources to all the people of South Africa;
- To substantially and meaningfully expand opportunities for Historically Disadvantaged South Africans (HDSA) to enter the mining and metals industry and to benefit from the exploitation of the nation’s mineral resources;
- To utilise and expand the existing skills base for the empowerment of HDSA and to serve the community;
- To promote beneficiation of South Africa’s mineral commodities; and
- Promote sustainable development and growth of the mining industry.

The proposed development will not only meet the Mining charter objectives it will also result in sale of Minerals to both domestic and international markets, and thus contribute to the reliable provision of electricity which is critical to energy security, industrial development and poverty alleviation initiatives in the country.

Project benefits

Bonizenzo Holdings (Pty) Ltd will conduct prospecting to find various reserves on the prospecting right application area. Once the prospecting activities have been completed and showed to be feasible that the granted minerals are mineable, Bonizenzo will take the process forward in terms of applying for a mining right. Jobs and business opportunities will then be created as part of the development, construction and operation of the mine.

5. MOTIVATION OF THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGICAL ALTERNATIVES

The application area has been selected as the preferred site based on the bushveld geological formation in the area. The currently available historical geological information allows for the potential identification of economically viable resources.

Some of the techniques employed in the non-invasive prospecting activities will include a literature survey, field reconnaissance/mapping, and geophysical survey of the geology, outcrops. Some of the invasive prospective activities include prospecting boreholes, boreholes to confirm continuity of mineralization & potential deposit size and resource definition drilling.

Consultation with affected landowners and adjacent landowners will be conducted in order to keep them informed about the proposed prospecting activities as well as to capture any comments and concerns they may have regarding the prospecting activity.

It should be noted that the exact locations of the boreholes have not been identified at this stage. The location of these boreholes will be dependent on the findings of the non-invasive prospecting activities. Once the proposed target areas for the boreholes have been identified, these areas will be investigated and will be subject to the conditions of this document.

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

6.1. Details of development footprint alternative considered

6.1.1. Location of the Activity

The development footprint is expected to be a fraction of the application area size, which is estimated to be 3280 hectares. The geology is the primary driver in determining the location of prospecting. The area is located approximately .45 km from the town of Groot Marico in the Ramotshere Moiloa Local Municipality, North West Province.

6.1.2. Type of activity to be undertaken

Bonizenzo Holdings (Pty) Ltd is intending undertake prospecting activities on the Remaining Extent of Portion 10, 21 and Portion 24 of the farm Rooderand 41 JP, Remaining Extent, Portion of Portion 1 and Portion 2 of the farm Rooderand 902 JP. The proposed activity will include the drilling of prospecting exploration boreholes, construction of water collection sumps, accessing the portions of the farm via existing roads, rehabilitation of drilling activities, mining strip pit as part of the bulk sampling activities, blasting, temporary storage facilities and rehabilitation of the pit.

6.1.3. The design or layout of the activity

Prospecting activity

The prospecting work will consist of an initial phase of conventional diamond drilling in order to assess the possible viability of the reserve.

It is envisaged that a total of 10 cored boreholes will be drilled during Phase 1, applying a grid spacing approximately 300 meters in order to quantify the mineral reserve in terms of the economic feasibility thereof. As such a total of approximately 375 meters of core drilling is envisaged. Borehole depth is expected to range from approximately 20 meters to 100 meters in order to intersect all the seams if present.

Casing will be removed from the borehole on completion thereof and the borehole sealed in accordance with “Standard Borehole Sealing Procedure” i.e.: each borehole certificated in terms of this procedure. Borehole sumps will be rehabilitated in accordance with existing legislation and any extraneous material removed from site. Where water is to be used for drilling purposes this will be managed in accordance with the surface owners’ permission to draw from existing water points, e.g.: nearby dams, rivers etc.

Drilling personnel (4 or 5) will be housed in caravans on site during the prospecting phase and will make use of sanitary chemical toilets and all such waste disposed of via the approved manner. Potable / drinking water will be provided to the drill crew by the Contractor.

Bulk sampling

The mining strip width of 35 m is considered to be ideal for this type of operation. For this reason, the size of the block model will be designed in 50 m x 35 m blocks.

Contractors in the vicinity apply these widths as a standard and find it eminently suitable for their equipment size. Access into the pit will be on the low-wall with temporary ramps. In this type of operation, the ramps are temporary and constructed out of the blasted material. 0766411829

All seams will be mined separately. Mineral exposure will be limited by the strip length and the consecutive mining operations taking place.

No blending constraints were considered, as batch washing ensures optimal seam yields with minimum pit room. Switching between mining different seams will require a minimal amount of time and is not seen as a practical problem. This practice is well entrenched in the mines in the vicinity and is aided by the size of machines (i.e., small machines with a high degree of mobility) typically used by contractors in this area.

Strip mining is in essence a moving void that progresses through the ore body in a well-ordered manner. As each new bench is formed, the material is placed into the “old” part of the void, thus causing the void to “move”.

The size of the void is dependent on the number and width of the benches needed for safe, practical mining. The main constraints are width and height. Width, as already discussed, is mostly determined by the machine size. Bench height is relegated by the seam configuration and the maximum safe mining height, either a function of the equipment or determined by the Geo technical properties.

In any open pit mine substantial volumes of material must be shifted. The resultant topography is important from an environmental impact. To revert to the original shape could be very costly, sometimes totally uneconomic and mostly impossible as large quantities of material has been removed, processed and marketed, which is after all the aim of a bulk mining project.

Voids left create environmental problems and are therefore undesirable. To avoid leaving voids, material is moved when the initial operation starts, and stockpiled close to where the final void will be formed. This will then be used to backfill the final void at the end of the mine's life. This is a separate process for each individual pit.

6.1.4. The technology to be used in the activity.

Drilling will be conducted on an adequate grid survey basis sufficient to aid in the compilation of a comprehensive Geological Report in accordance with the SAMREC Code.

6.1.5. The operational aspects of the activity

Once Exploration phase 1 has been completed mineral samples will be sent to Laboratory for verification. Verification process will be followed by application of mining right if Bonizenzo want to develop the area into a mine.

6.1.6. The option of not implementing the activity

If this project is not implemented as planned, it should be noted that the Mineral reserve that is located within the current route will be sterilised resulting in no mining activity within in this area.

7. DETAILS OF THE PUBLIC PARTICIPATION PROCESS TO BE FOLLOWED

7.1. PUBLIC PARTICIPATION METHODOLOGY

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

7.2. IDENTIFICATION OF I&AP'S

An initial I&AP list was compiled using Windeed searches to determine the contact details of the registered landowners of the project affected land parcels, and by consultations with the local farmers

union and the local municipalities, as well as the distribution of notification documentation in person on site. The I&AP database was compiled containing the following categories of stakeholders:

- Host Communities;
- Landowners;
- Traditional Authority;
- Land Claimants;
- Lawful Land Occupier;
- Department of Land Affairs;
- any other person (including adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the proposed prospecting operation;
- Local Municipality
- The relevant Government Departments, agencies and institutions responsible for various aspects of the environment and for infrastructure which may be affected by the proposed project.
- Agricultural Sector;
- Organised Business;
- Other organisations, clubs, communities, and unions; and
- Various NGO's.

7.3. LIST OF AUTHORITIES IDENTIFIED AND NOTIFIED

- Department of Agriculture, Land Reform and Rural Development (DRARRD)
- Department of Agriculture and Rural Development. (DARD);
- Department of Economic, Development, Environmental Conservation and Tourism (DEDECT);
- North West Commission on Restitution of Land Rights (CRLR);
- Department of Mineral Resources and Energy (DMRE);
- Department of Water and Sanitation (DWS);
- South African Heritage Resources Authority (SAHRA)
- North West Provincial Heritage Resources Authority (NWPHRA)
- South African National Biodiversity Institute (SANBI);
- Department of Environment, Fishery and Forestry (DEFF);
- Ramotshere Moiloa Local Municipality;
- Ngaka Modiri Molema District Municipality;

- Land owners and occupiers;
- Adjacent land owners and occupiers;
- Other identified surrounding community members;
- Non-Governmental Organisations and et.

7.3.1. Details of Public Participation Process Followed

The public participation process for the proposed project was initiated in January 2022. Notification Letters, BID and all relevant information were sent to identified I&APs, the minutes and the attendance registers are attached in **Appendix 4**.

Newspaper advert was put up on the on the Zeerust News on the 28th of February 2022. Several site notices were also posted at different locations as indicated below. Distribution by email of Background Information documents in English to the relevant government departments, local municipalities' non-governmental organisations and other identified Interested and Affected Parties was conducted. The public participation activities that were undertaken by LEM for the proposed development are outlined in **Table 6** below.

Table 6: Public Participation and Consultation Information

Activity	**Date**
Consultation with government departments (Department of Mineral Resources, DARDLEA, DWS)	From 24th of February 2022
Placement of project's site newspaper adverts	24th of February 2022
Placement of project's site notices	24th of February 2022
BID distributed to landowners, adjacent landowners, non-governmental organisations and other Interested and Affected Parties.	24th of February 2022

The Draft Basic Assessment report will be distributed to all registered stakeholders via email and LEM website. The draft BAR can be requested by contacting LEM via email or call. Registered Interested

and Affected Parties will be notified via e-mails, SMS and meetings about the availability of the draft Basic Assessment report.

The reviewed draft BAR and the EMP reports will be submitted to the DMRE in March 2022 for review and final decision making.

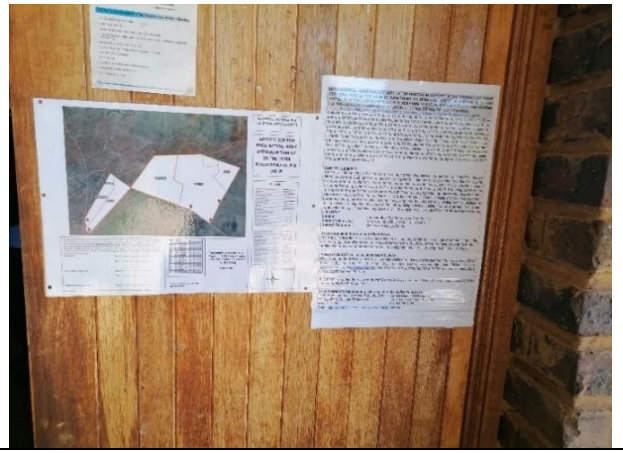
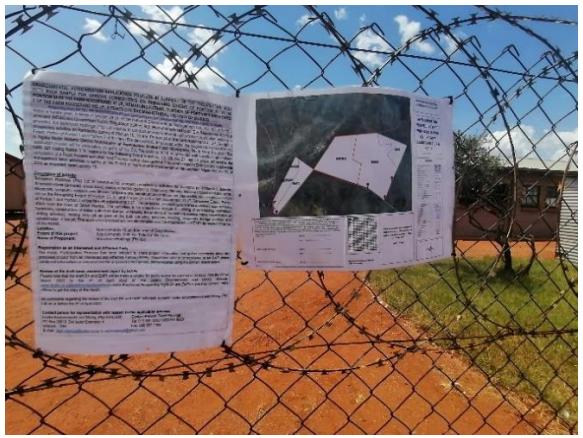
7.3.2. Content of Advertisements and Notices

Please refer to **Appendix 4** for Site notices that were placed at various locations, and published Newspaper Advert as part of this application.

7.3.3. Placement of Notices

Site notices were placed on various locations around the study area, refer to Table **7** overleaf for exact location of site notice.

Table 7: Location of Site Notices

Site Notice Location	Co-ordinates	Photography
Site Notice 1 placed on the municipal office and library	-25,602649 26,430270	
Site notice 2 at Doornlaagte Primary School fence next to the main gate.	-25,235132 26,328448	

Site Notice Location	Co-ordinates	Photography
Site notice 3 placed on the left side of the Rooderand farm gate.	-25,109578 26,8339216	 

Site Notice Location	Co-ordinates	Photography
Site Notice 4 placed on the Mmsebudule Clinic fence	25º2'30.24" S 26º18'16.63" E	

Figure 3 : Newspaper Advert

Also refer to **Appendix 4** for Site notices and Newspaper Adverts for this project.

7.4. Summary of Issues Raised by Interested and Affected Parties

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

Table 8: Comments and Response from I&Aps

Interested and Affected Parties **List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.**	**Representing**	**Date Comments Received**	**Comment**	**Issues Raised**	**EAPs response to issues as mandated by the applicant**
Landowners					
Mr Johannes Mosiane – Land occupier who is leasing on Portion 10 of the Farm Rooderand 41 JP.	Rooderand Farm	24 February 2022	The details of the project were communicated with him telephonically. A further engagement and consultation meeting will be arranged within the environmental authorisation commenting period. He indicated that he wants to understand the project and proposed that a meeting must be arranged since he is leasing the affected farm portion from the state.	Request for a meeting in respect of this proposed project.	LEM indicated that a consultation meeting will be arranged and held to discuss this project with him as the land occupier.
Adjacent community					
Khutswane Family	Doornlaagte Community	24 February 2022	The Khutswane family was consulted on the 24th of February 2022.		The family will be engaged and consulted as part of the prospecting right environmental authorisation process.

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
Land Claims					
Chief Director of Land Restitution Support– Mr L Bogatsu	Department of Agriculture, Land Reform and Rural Development (DALRRD)	04 April 2022	Consultation documents including the BID and the request to confirm any land claims within the affected farm portions were sent to Mr Bogatsu, Chief Director of Land Restitution Support North West Province. No feedback has been received so far.	None.	No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation process consulting process
Municipality					
Planning and Development – Mr R Mojapelo	Ramotshere Moiloa Local Municipality	04 April 2022	E-mail with the BID and notification letter was sent to Mr Mojapelo no comments received yet.		No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
					consulting process.
Community Services – Mr T Seleka	Ramotshere Moiloa Local Municipality	04 April 2022	E-mail notification with the BID and notification letter was sent to Mr Seleka no comments received yet.		No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process consulting process.
Municipal Manager – Mr. D Makhate	Ramotshere Moiloa Local Municipality	04 April 2022	E-mail notification with the BID and notification letter was sent to Mr Makhate and no comments have been raised and/or received so far.		No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
					consulting process.
Executive Mayor – Dr. Percylia Kereng Mothoagae	Ramotshere Moiloa Local Municipality	04 April 2022	E-mail notification with the BID and notification letter was sent to Dr Mothoagae and no comments have been raised and/or received so far.		No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process consulting process.
Traditional leaders					
The right-hand man of the headman – Mr V.S Tiro	Mmasebudule Traditional Authority	03 March 2022	BID was shared with Mmasebudule Traditional Authority Representative Mr V. S Tiro, the right-hand man of the headsman. Mr Tiro, he will convey the message to the tribal council and will decide if they want to see us No Comments have been raised by the Mmasebudule Traditional Authority yet.		No response. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
					consulting process.
Local Community					
Valentia Didimalang Tembo	Reboile Community	24 February 2022	Interested in project progress.		Noted, your details will be included in the stakeholder register.
Bosisiwe Eunice Motlhabane	Reboile Community	04 April 2022	She wants to know whether this project will affect air quality at large and what benefits will the project bring.		Your comment has been noted, the prospecting right with bulk sample is a small-scale project and will have low impact significance on air quality. Your details will be included in the stakeholder register.
Lucky Mosimanegape Kotsedi	Reboile Community	24 February 2022	He is asking if this project will create job opportunities for the community.		Your comment has been noted, however

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
					at this stage no employment will be generated. Your details will be included in the stakeholder register and you will be notified of the project progress.
Selepe Mantsho Elizabeth		24 February 2022	Interested in project progress.		Noted, your details will be included in the stakeholder register.
Shime Class Segwabe	Reboile Community	24 February 2022	Interested in project progress.		Noted, your details will be included in the stakeholder register.
Jack Malome	Mmasebudule Community	24 February 2022	Interested in project progress.		Noted, your details will be included in the stakeholder register

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
Mrs P. Tsatsi	Mmasebudule Community	04 March 2022	Interested in project progress		Noted, your details will be included in the stakeholder register.
Mr Dingaan Abislon Seakentoa	Ward 17 Councillor for Mmasebudule and Doornlaagte Community	04 March 2022	Interest in project progress		Noted, your details will be included in the stakeholder register.
Organs of State (Responsible for Infrastructure that may be affected Roads Department, Eskom, Telkom, DWS, etc)					
Directorate: Mineral Regulation – Linah Tshisevhe	Department of Mineral Resources and Energy (DMRE)	04 April 2022	A Public Participation Plan in line with the Disaster Management Regulations GN R 650 published on 05 June 2020 was submitted to the Department as requested in terms of the Results of consultation to be included on Basic Assessment report consultation section.	A request was made to submit the PP Plan as a hard copy to the Department.	The PP Plan was printed and submitted to the Department.
			An application acknowledgement letter was received from the DMRE Mineral Regulation Directorate on the 21st of January 2022 which requested the following:		
			a) Your application form has failed to include signature of the EAP together with an undertaking under oath or affirmation that all the information submitted or to be submitted for the purpose of this application is true and		A revised application form was signed by the EAP with the

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
			correct prescribed in terms of regulation 16 (b) (iv) of the NEMA: EIA Regulations, 2014 as amended.		affirmation that the all the information submitted or to be submitted for the purpose of this application is true and correct prescribed in terms of regulation 16 (b) (iv) of the NEMA: EIA Regulations, 2014 as amended. This application was resubmitted to the Department as requested.
			b) Your application was also not signed by the applicant or a representative of the applicant.		The completed application form was signed by the applicant and resubmitted to

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
					the Department.
			c) Your application form has also failed to include the Curriculum Vitae (CV) indicating the experience with Environmental Impact Assessment and relevant application processes as indicated in the application form.		The completed application form including the EAP's CV and resubmitted to the Department.
Head of Department – Mr Lufuno Tshikovhi	Department Economic Development, Environment, Conservation and Tourism (DEDECT)	04 April 2022	E-mail notification with the BID was sent to the DEDECT and no comments have been raised and/or received so far.		No response required. Follow up will be made in March 2022 as part of the environmental authorisation Public Participation Process consulting process.
Chief Directorate: Integrated Environmental Authorisations – Mr Sabelo Malaza	Department of Forestry, Fisheries and	04 April 2022	E-mail notification with the BID and notification letter was sent to the DFFE and no comments have been raised and/or received so far.		No response required. Follow up will be made in

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment	Issues Raised	EAPs response to issues as mandated by the applicant
	Environment (DEFF)				March 2022 as part of the environmental authorisation Public Participation Process consulting process.

Please refer to **Appendix 4** for email engagement with I&APs

8. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

8.1. Baseline Environment

This section presents an overview of the desktop study of the Groot Marico study area. This information was obtained by use of google map, published studies of Groot Marico and its surroundings.

8.2. Type of environmental affected by the proposed development

8.2.1. Land Use

The land cover and uses associated with the proposed prospecting application right area is dominated by livestock farming including some cultivated land owing to the increased availability of groundwater from the underlying aquifers. The most part of the area is covered by woodland/open bush land, grassland, low shrubland, thicket/dense bush and some small patches of low lying cultivated filed, erosional dongas, plantations/woodlots mature and wetlands.

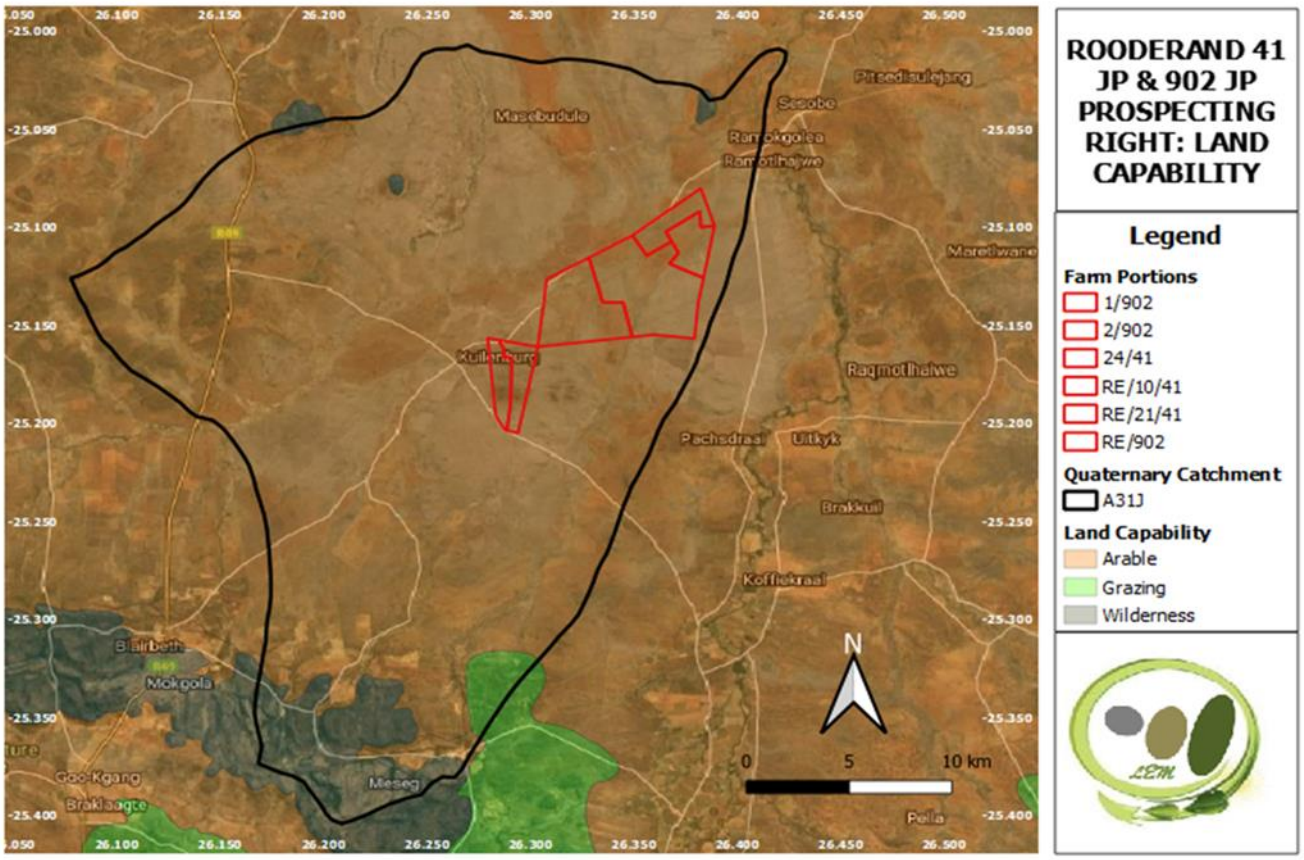


Figure 4: The land cover and land use identified within the Rooderand prospecting right application area.

8.2.2. Geology & Soils

Geology

Geographically, the farm Rooderand 41 JP and" Marico Mine are located on the Western Lobe of the Bushveld Igneous Complex (**Figure 5 and Figure 6**). The Bushveld complex is, by far, the largest layered mafic intrusion in the world. From bottom to top, the Complex features rocks evolving from peridotites and pyroxenites, to gabbros and finally to diorites and rare granites." (Eugene Pretorius and Associates Pty Ltd, 2013)

"The farm Rooderand 41 JP is located on the lower sequences of the Upper Zone of the Southern part of the Eastern Bushveld complex. The Upper Zone in this area is approximately 2,000m thick and essentially comprised of olivine diorite and gabbro, which hosts up to 22 inter-layered magnetite layers

of variable thickness, extent, and economic viability. Marico Mine division is currently exploiting the Main Magnetite Seam, which is the thickest of these layers within the vicinity."

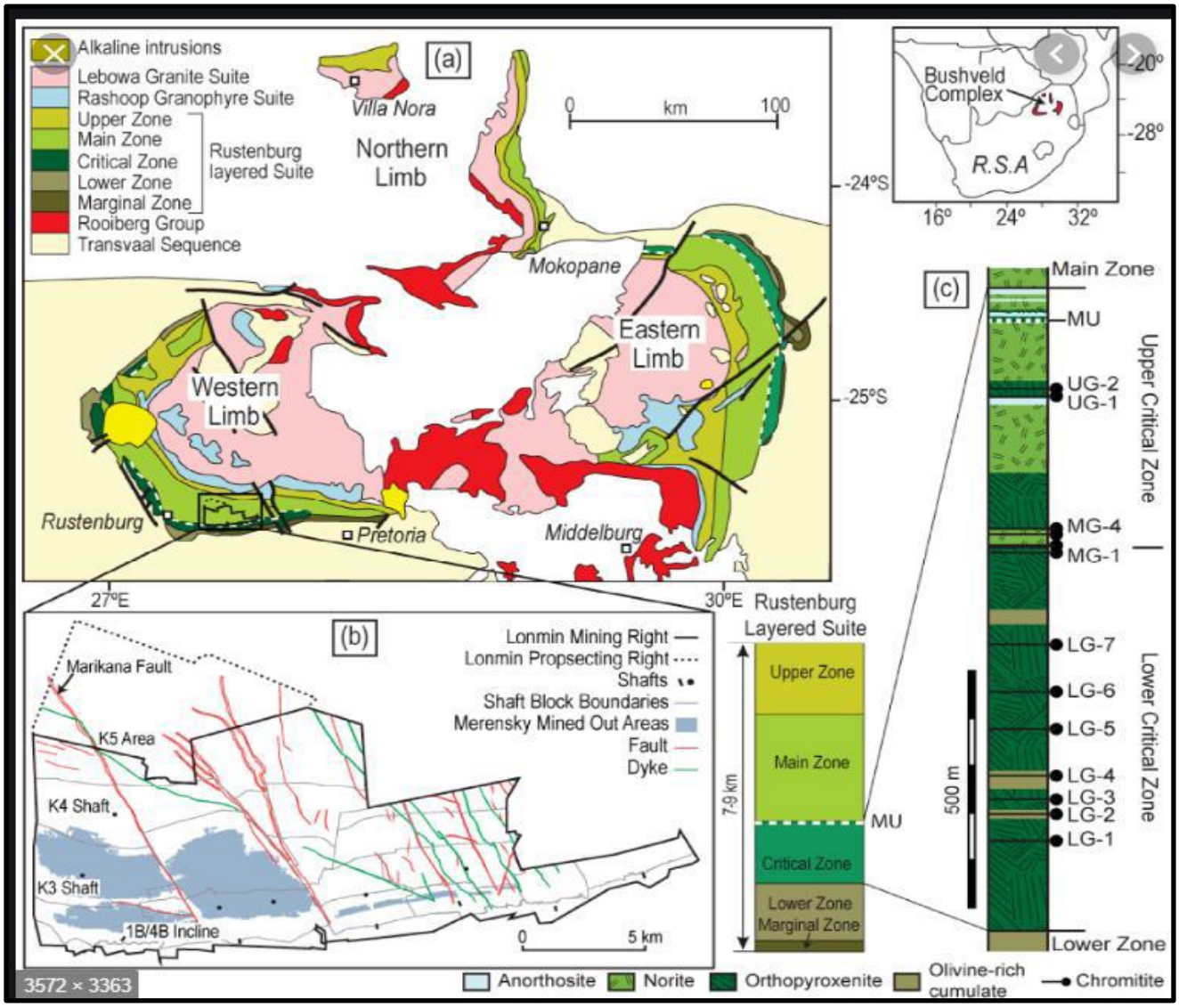


Figure 5: Busveld Complex Chromitite Zones (Wikipedia, (2019), The Merensky Cyclic Unit, Bushveld Complex, South Africa. Available at http://www.goggle .com search, Geological Maps.

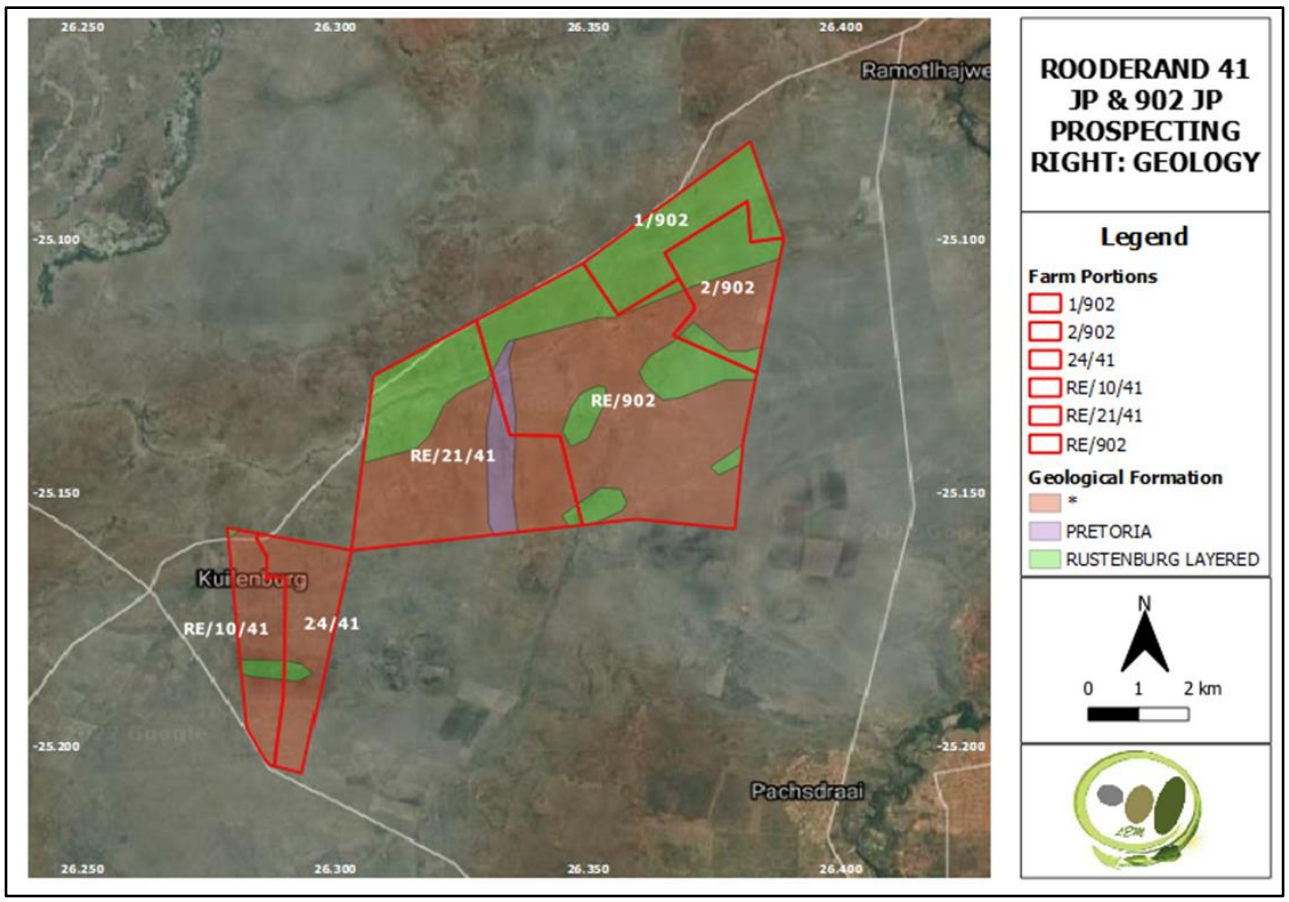


Figure 6: Geology of the study area.

Soils

The geology of the area consists of Pretoria shale, slate, hornfels and quartzite with diabase sills in certain areas. The sediments are of the Pretoria Group which also may consist of carbonates, volcanic rocks, breccias and diamictites (Mucina and Rutherford, 2006). Nutrient-poor soils are derived from sedimentary lithologies, especially on the southern part of the study site where the proposed corridors are underlain by quartzite (of the Daspoort Formation). It is evident that most part of the study area is underlain by Quaternary sand and calcrete, and of shale of the Silverton Formation. Weathering of the shale latter is responsible for red to yellow apedal soils with a high base status, while vertic or melanic clays are prominent on low-lying areas where drainage systems occur. The second largest part of the land is characterised by wilderness or woodlands which composing of soils and miscellaneous areas

with limitations that preclude their use for commercial plant production and limit their use mainly to recreation, wildlife habitat, water supply, or esthetic purposes. (Refer to **Figure 7**Figure 4)

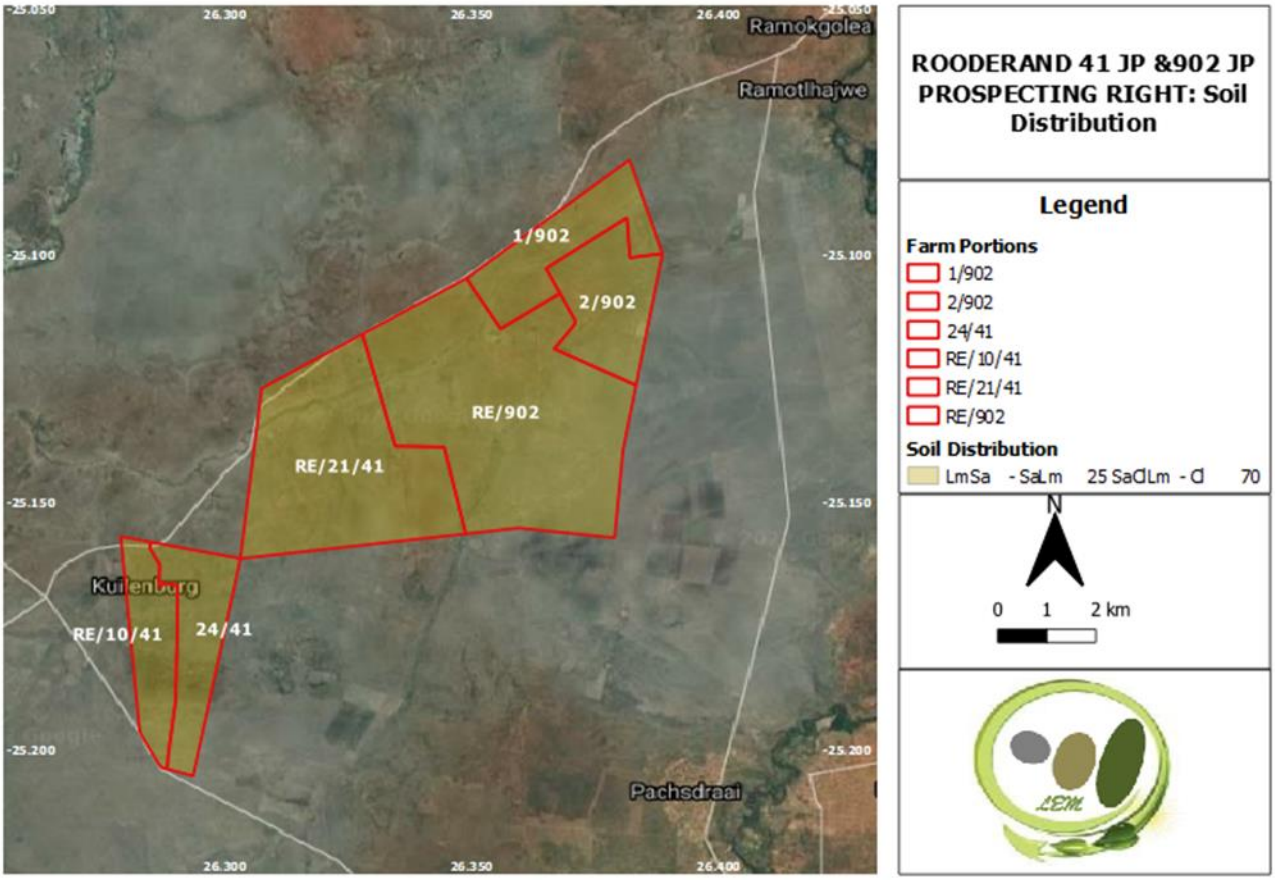


Figure 7: Soil types and distribution within the Rooderand prospecting right application study area

8.2.3. Climate and rainfall

The proposed Bonizenzo Holding Prospecting Application study area is characterized with average rainfall, the western part of the Northwest Province receives less than 300mm per annum, the central part around 550mm, while the eastern and south-eastern parts receive over 600mm.Rainfall is highly variable both in time and regionally. Droughts and floods occur regularly at both provincial and local scales. They play a significant role in almost every aspect of the social, economic, and ecological environment within the province (DWAF, 2005). Evaporation exceeds rainfall in most parts of the province. There are wide seasonal and daily variations in temperature, being very hot in summer (daily average high temperatures of 32°C in January) and mild too cold in winter (average daily minimum in July is 0, 9°C). The far western part is arid, encompassing the eastern portion of the Kalahari Desert. This area is regarded as one of the hottest provinces in South Africa.

8.2.4. Topography

The proposed Rooderand Prospecting Application study area is located approximately 45 km from town of Groot Marico within Ramotshere Moila local Municipality. Groot Marico falls within Savanna Biome, with the area categorized in the Thornveld vegetation. Topography of the region has uniform terrain than all provinces with an altitude of 920 – 1782. On the north-west of Groot Marico, there are more variable landscape that gives rise to the Magalisesburg Mountain range (de Villiers and Mangold, 2022). The town also comprises of dry bushveld with a climate that is ideal for grazing, and farming.

8.2.5. Terrestrial Ecology

Flora

The proposed prospecting application study area falls within Grassland and Savanna Biome and some patches of Azonal Vegetation. Grassland biomes consist mainly consist of Carletonville Dolomite Grassland Thornveld (Gh15); this vegetation is vulnerable and poorly protected. The Savanna biome consist of Moot Plains Bushveld (SVcb8), Dwarsberg-Swartruggens Mountain Bushveld (SVcb4) and Zeerust Thornveld (SVcb3), and these ecosystems are least threatened and poorly protected with a conservation target of 19%. The Azonal Vegetation is manly Highveld Salt Pans (AZi10) which is least

threatened and hardly protected vegetation and is mainly found in wetlands. (Mucina & Rutherford's, 2006).

Although portions of each of the Bonizenzo Holding prospecting study areas are transformed by Farming (cattle farming) large areas remain untransformed and relatively undisturbed, comprising natural habitat that is important to maintaining local flora and fauna communities and ecosystem processes. The area under application falls within Grassland, Savannah and Azonal Vegetation Biomes and it is rated as least threatened ecosystem. There is no threatened ecosystem within the proposed study area (Refer to **Figure 8**).

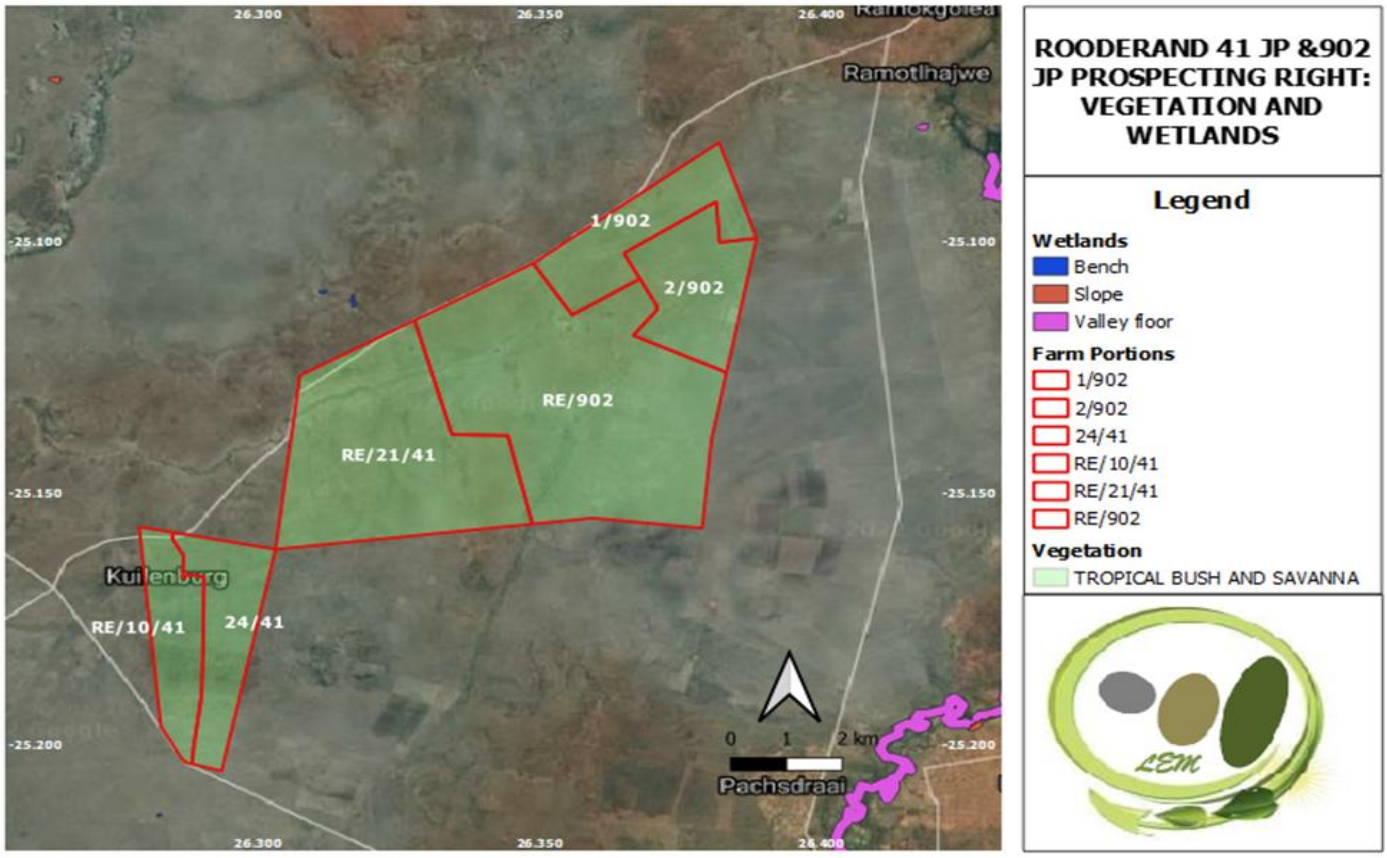


Figure 8: Grassland, Savannah and Azonal vegetational biomes associated with the study area

Fauna

Faunal activity within the proposed application right area is deemed to be very low which could be due to the small size of the site and the constant human presence. However, one species of conservation concern, Coracias garrulus (European roller) might have a high probability of occurrence within the vicinity of the proposed

prospecting area and although the presence of many of these species is not confirmed, there is a possibility that they may still occur on site

Table 9 outlines the Birds species that are known to naturally occur in the North West region as a whole. However, does not imply that all of these species will occur at any given place in the region as a whole

Table 9: Birds species that are naturally occur in the North West region.

Species category	English Name	Scientific name	Reporting rate
Endangered	Saddlebilled Stork	Ephippiorhynchus senegalensis	2-8.2
Vulnerable	Pinkbacked Pelican	Pelecanus rufescens	< 2
	Whitebacked Night Heron	Gorsachius ieuconotus	< 2
	Cape Vulture	Gyps coprotheres	8-20
	African Whitebacked Vulture	Gyps africanus	2-33
	Lappetfaced Vulture	Torgos tracheliotos	2-28
	Tawny Eagle	Aquila rapax	2-13
	Martial Eagle	Polemaetus bellicosus	7-17
	Bateleur	Terathopius ecaudatus	2-40
	African Marsh Harrier	Circus ranivorus	2-5
	Lesser Kestrel	Falco naumanni	> 17
	Blue Crane	Anthropoides paradiseus	7-22
	Grey Crowned Crane	Balearica regulorum	2
	African Finfoot	Podica senegalensis	2-4
	Kori Bustard	Ardeotis kori	14-28
	Whitebellied Korhaan	Eupodotis cafra	5-11
	Grass Owl	Tyto capensis	> 6

8.2.6. Surface water

Associated Watercourses

Department of Water and Sanitation have established the National Water Resources Strategy (NWRS) in 2004 to ensure that national water resources are protected, used, developed, conserved, managed and controlled in an efficient sustainable manner towards achieving South Africa's development priorities in an equitable manner over the next five to 10 years which is in line with Section 21 of National Water Act, Act 36 of 1998. The departments have implemented version 1 and 2 of the National Water Resources Strategy namely, NWRS1 and NWRS2 respectively. According to NWRS2, there are 19 Water Management Areas within South Africa. the management model, and based on viability assessments with respect to water resources management, available funding, capacity, skills and expertise in regulation and oversight, as well as to improve integrated water systems management, the original 19 designated WMAs have been consolidated into 9 WMAs.

As such, the Rooderand prospecting application study area is now located within the newly revised the Crocodile West and Marico WMA, falls within the A31J quaternary catchment of the Crocodile West and Marico Water Management Area. The Crocodile (West) and Marico Water Management Area (WMA) is defined by the following Catchments: Crocodile River, Marico River, South African portion of Ngotwane River and the Upper Molopo River. The area forms part of the Limpopo River basin, which spans the four countries of Botswana, Zimbabwe, South Africa and Mozambique. The area covers approximately 48 000 km^2 with the largest being the Crocodile River catchment (29 349 km^2) followed by the Marico River catchment (12 049 km^2). The remainder is covered by the Ngotwane River and Upper Molopo River catchments at approximately 5 000 km^2 and 1 800 km^2 respectively. The WMA includes the tertiary drainage regions: The prospecting application study area falls within the A31J quaternary catchment of the Crocodile West and Marico Water Management Area.**)**

The main river that runs through this catchment is the Marico River that runs from the North West province before joining into the Crocodile River in the Limpopo province resulting in the formation of the Limpopo River. The Groot Marico River basin is comprised of two main dams (Marico Bosveld and Molatedi dams). The Sandsloot flows on the western and to Springboklaagte on the eastern areas of the proposed prospecting application right area. These tributaries join each other and flow as Sandsloot downstream of the proposed prospecting right area. The Sandsloot drains into Sehubyane and connects to Molatedi Dam. The area comprises of perennial rivers and non-perennial rivers and surface water runoff as a percentage of precipitation accounts for only 1% of water in the west of the province and about 7% in the eastern regions of the province (Refer to **Figure 9, Figure 10** and **Figure 11**).

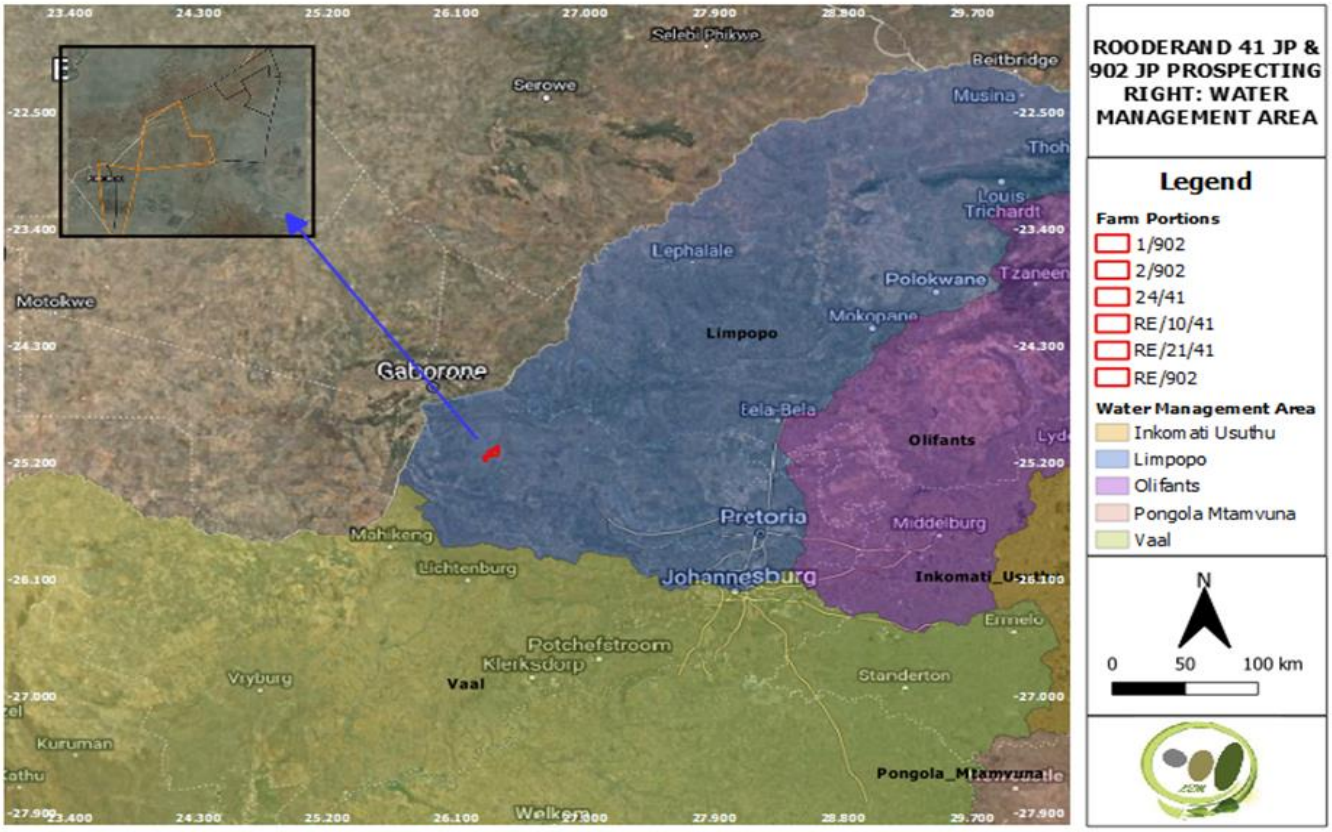


Figure 9: National Water Management Areas associated with the study area

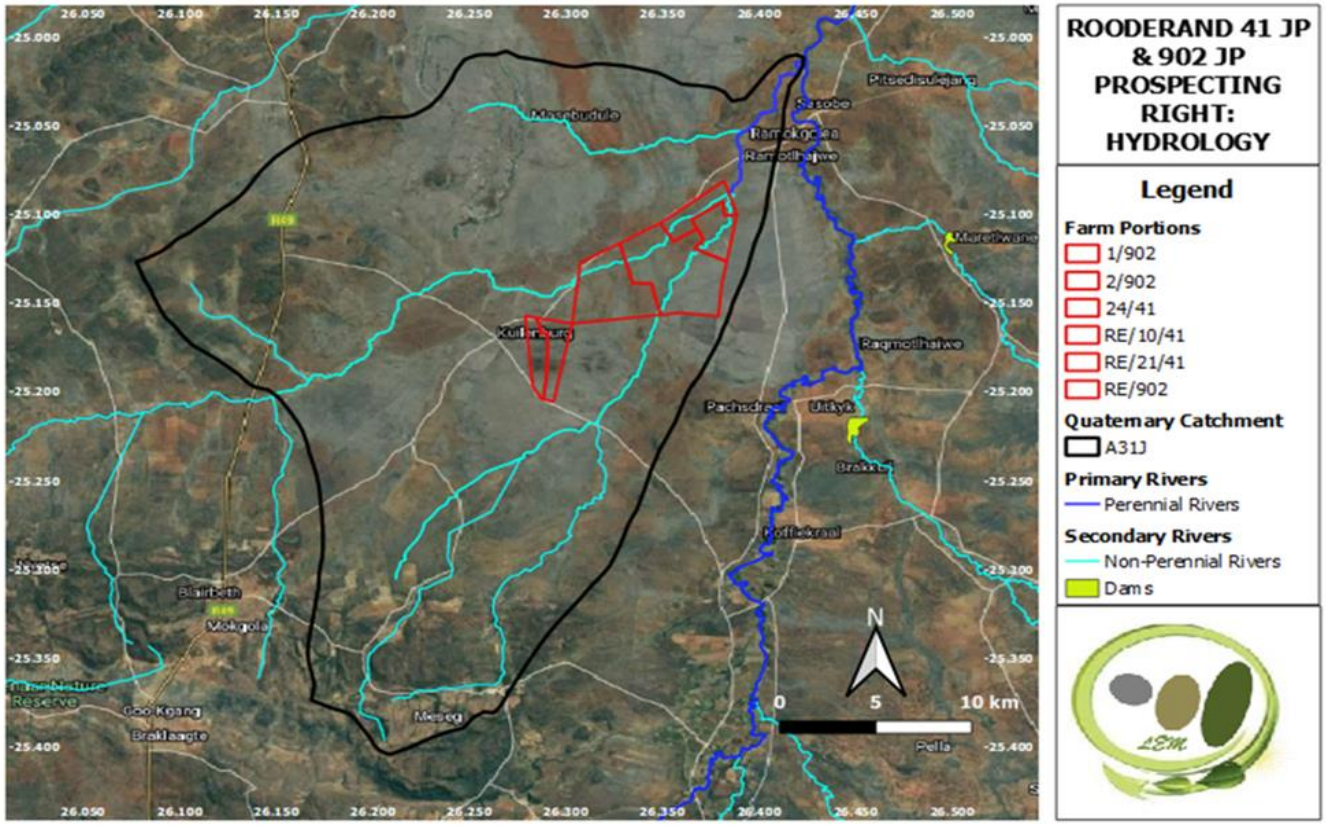


Figure 10: A map that shows the surface water resources within the Crocodile West and Marico Management Areas (WMA) at the proposed prospecting application area

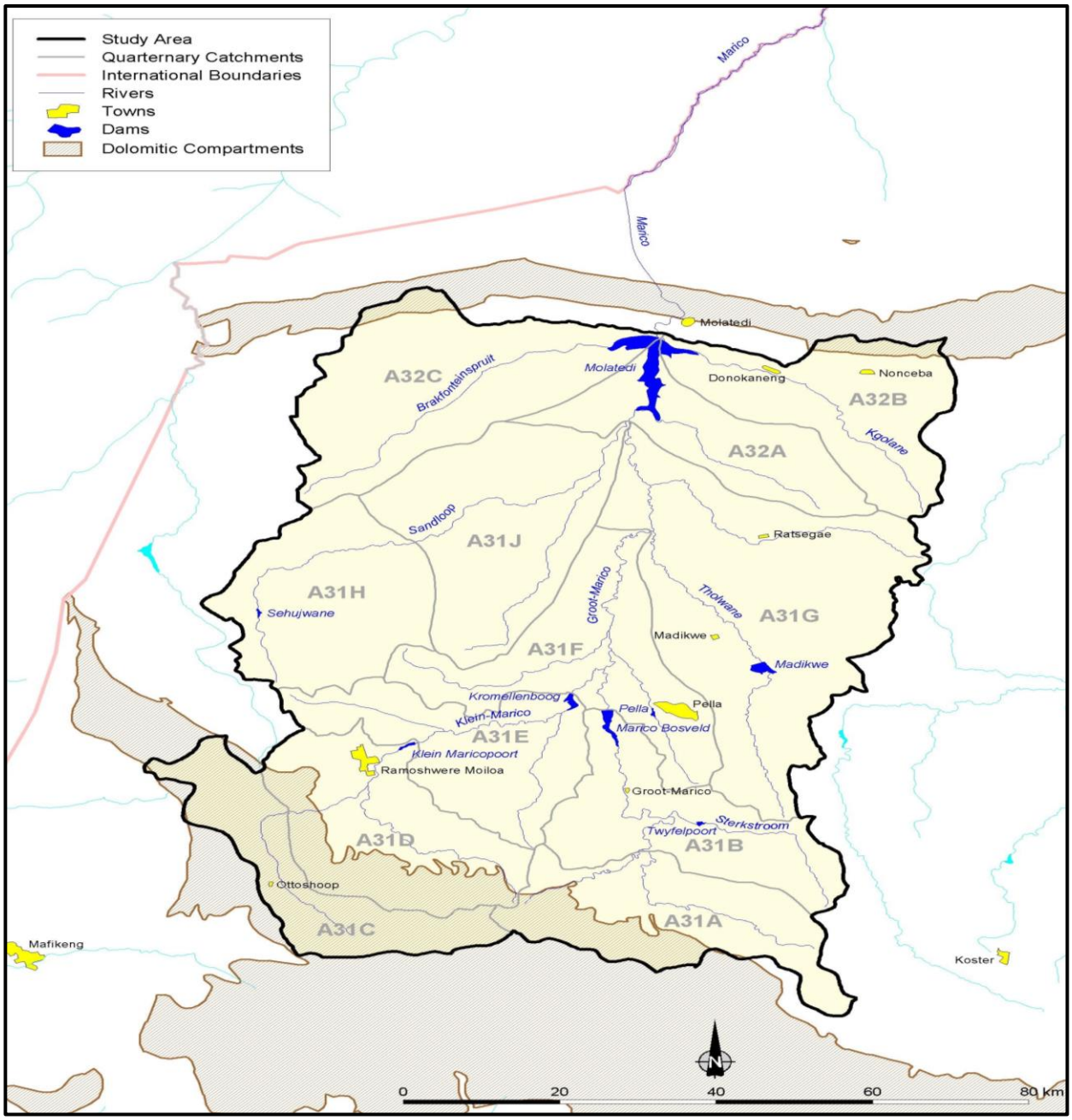


Figure 11: A map shows the Molatedi Dam quaternary catchment and its related streams

National Freshwater Ecosystem Priority Areas

The National Freshwater Ecosystem Priority Areas (NFEPA) project represents a multi-partner project between the Council for Scientific and Industrial Research (CSIR), South African National Biodiversity

Institute (SANBI), Water Research Commission (WRC), Department of Water Affairs (DWA; now Department of Water and Sanitation, or DWS), Department of Environmental Affairs (DEA), WWF, South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks). More specifically, the NFEPA project aims to:

- Identify Freshwater Ecosystem Priority Areas (hereafter referred to as 'FEPAs') to meet national biodiversity goals for freshwater ecosystems; and
- Develop a basis for enabling effective implementation of measures to protect FEPAs, including free-flowing rivers.

The first aim uses systematic biodiversity planning to identify priorities for conserving South Africa's freshwater biodiversity, within the context of equitable social and economic development. The second aim comprises a national and sub-national component. The national component aims to align DWS and DEA policy mechanisms and tools for managing and conserving freshwater ecosystems. The subnational component aims to use three case study areas to demonstrate how NFEPA products should be implemented to influence land and water resource decision-making processes at a sub-national level. The project further aims to maximize synergies and alignment with other national level initiatives such as the National Biodiversity Assessment (NBA) and the Cross-Sector Policy Objectives for Inland Water Conservation.

No FEPA wetlands or wetland clusters are associated with the proposed Rooderand Prospecting Application study area.

8.2.7. Groundwater

The Rooderand farm is bordered and surrounded by the water divide between quaternary catchment areas A32C and A32D with the portion across the latter comprising of two Resource Units (RU) of which one (Northern Dolomite Outcrop) can possible be further divided due to compartmentalization:

- The 105km^2 identified groundwater reserve / flow regime pertaining to the Pretoria Group RU (A32D) to the west of the Marico River, south of the Malmani dolomite contact (Northern Dolomite Outcrop), is drained to the east by a non-perennial tributary of the Marico River

- The 224km^2 identified Malmani dolomite RU is drained to the north by the Marico River

- South of the watershed, the 36.5km^2 identified groundwater reserve / flow regime pertaining to the Pretoria Group RU (A32C) is bounded by the Molatedi Dam, the intermittent Brakfontein Spruit and one of its tributaries.

8.2.8. Air Quality

South Africa have established the legislation that governs and monitor the level of ambient air quality as per province. In terms of Section 24 of the Constitution of Republic of South Africa, as well as the National Environmental Air Quality Act (AQA, 2004), government is enjoined to ensure that South Africans are breathing air that is not harmful to their health and wellbeing. Section 8 of the AQA provides for national monitoring and information management standards and stipulates that the Minister must, in the National Framework, establish national standards for municipalities and provinces to monitor ambient air quality, among other requirements, in order to report compliance with ambient air quality standards. In order to meet this requirement, ambient air quality needs to be monitored, and this is done through deploying ambient monitoring stations in order to measure the quality of the air.

The monitoring ambient air quality stations has been established as per province to ensure that air quality is controlled, managed and monitored. Data from these stations has been used to develop the National Air Quality Indicator (NAQI) for South Africa. The NAQI is based on an annual measure of particulates (PM10) and Sulphur dioxide (SO_2), two of the most prevalent pollutants in the country. The NAQI has been developed to weigh, balance and present data in such a way as to provide a verifiable and reportable measure of air quality at the national scale that is broadly accepted as being an adequate indicator, much like the National Ambient Air Quality Standards (NAAQS) are broadly accepted as a proxy for air that this not harmful to health and well-being.

Forty-three (43) stations have been selected for the NAQI reporting. These NAQI stations represent the spectrum of the NAAQMN stations characterised by industrial, urban, residential, traffic and background ambient conditions across the country. **Figure 12** below indicates the locations of the new NAQI stations located in the North West Province:

- Marikana - maintained by the NAQI service provider;
- Mafikeng - maintained by the NAQI service provider;
- Xanadu - maintained by SAWS;
- Welgegund - maintained by the North West University.

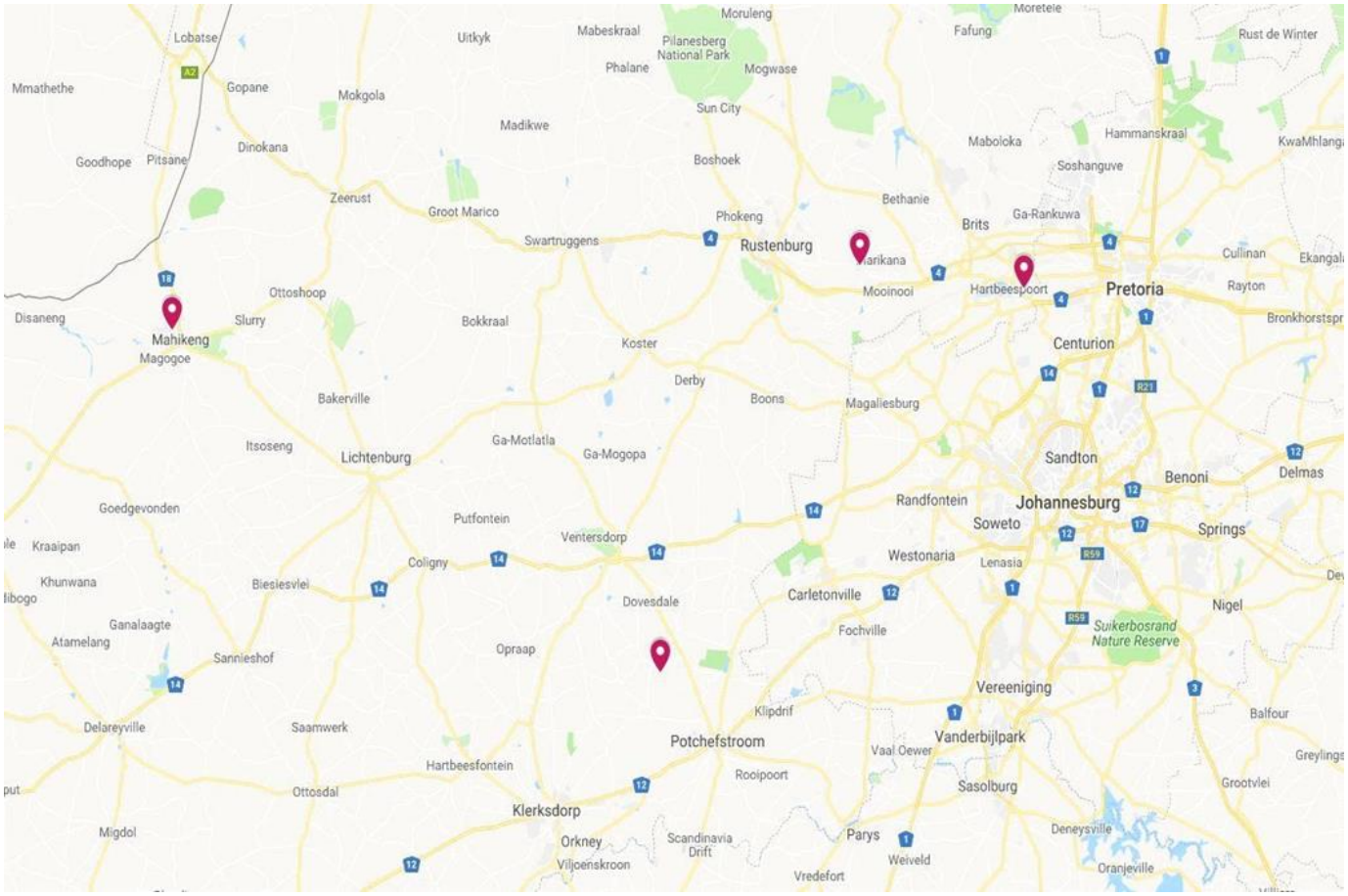


Figure 12: Map of the North West Province NAQI monitoring stations

Source Identification and Quantification

The air quality of the proposed development site is predominately governed by the various activities in the Ngaka Modiri Molema District.

The various processes and activities that contribute the air quality are as follows.

- Industrial processes e.g. mining and boilers,
- Household emissions e.g. fuel burning,
- Agriculture,
- Transportation,
- Fires (veld and planned) and,
- Waste disposal and Wastewater treatment.

Emission Sources

The Ramotshere Moiloa Local Municipality is falls within Ngaka Modiri Molema District Municipality. The main towns in the municipality are Groot Marico and Zeerust. The main activity in this area is the mining of chrome and platinum. This then means that the area is likely to have primary air pollutants like Sulphur dioxide, nitrous oxides, chromium (VI) and particulate matter which forms the secondary air pollutants in the atmosphere. There is also a lot of traffic in the area due to the transportation of minerals which introduces a lot of pollution from the vehicles. Other pollutants like pesticides can also emanate from the farms around Groot Marico and Zeerust, the extent of which has not yet been determined.

8.2.9. Noise

The proposed development is situated in agricultural zone which is predominantly quiet, and noise usually generated during planting and harvest season. The study area is situated in close proximity to a few mines and during blasting noise is generated to increase the noise levels. The proposed prospecting will generate noise, however, the level of noise to be generated is anticipated to be low due to the nature, size and the technology to be used during the prospecting activities.

8.2.10. Visual Aspects

In general, the proposed prospecting site is visible from the Magopa, Mmasebudule and Mosela Petlwa local communities, the adjacent agricultural holdings and the various gravel roads that extend through the area.

The visibility of the various properties depends on the location thereof in relation to these above-mentioned features and would have to be determined on a more site-specific basis.

The study area is predominantly agricultural area and no developments are situated with in the study area besides farmhouses. The prospecting activities will not impact on the visual aspects based on the size of activities, the drilling equipment will be in the property for approximately 100 days and will not have any significant impacts on the visual aspect of the study area

8.2.11. Socio-Economic profile of the Study Area

Economic Conditions in the Ngaka Modiri Molema District

The number of formally employed people in Ngaka Modiri Molema District Municipality counted 187 000 in 2018, which is about 82.93% of total employment, while the number of people employed in the informal sector counted 38 400 or 17.07% of the total employment. Informal employment in Ngaka Modiri Molema increased from 30 200 in 2008 to an estimated 38 400 in 2018. While in Ramotshere Moiloa Local Municipality, the total employment in both informal and formal sector is counted 66,70%.

Major economic activities and sources of employment

The amount of percentage of economically active persons residing at Ramotshere Local Municipality (RLM) is 59.7%, 64.2% for Mafikeng Local Municipality (MLM) and 62.6% for Ditsobotla Local Municipality (DLM), having being viewed from 20 to 64 years old. The unemployment rate is ranges between 28% to 36.2%, while youth unemployment ranges from 37% to 58%.

The municipalities' economic activities are dominated by tertiary activities despite the fact that it is rural in nature. In the region, the dominated economic sector is retail followed by Government, finance, community and transport, while construction, utilities, manufacturing, agriculture and mining are limited.

In terms of income:

- For the municipality's household without income ranges from 13% to 16%, while majority of the household earn between R19 601 to R153 800 with percentage of households ranging from 27% to 44%, followed by R9601 to R19600 with percentage of household ranging from 19% to 24%. A very low households ranging from 4% to 12% earning above R153 801 per annum

Unemployment

Ramotshere Moiloa Local Municipality is predominantly rural with vast majority of the population living in a rural or peri-urban environment. The rural part of the municipality is estimated at 70% of its total area. While the unemployment rate has decreased since 2001, it still remains high at 33,30 % as per the 2011 Census. It is not clear is the considerable decline is due to the narrower official definition of unemployment which only refers to people actively looking for work (Refer to Table **10** below)

Table 10: Economically actively and unemployment

Labour force/Economically active (Number)		Employed - Formal and informal	Unemployed (Number)
2010	Number of people	18753	10119
	% of people	64,95%	35,05%
2011	Number of people	17809	8892
	% of people	66,70%	33,30%
2012	Number of people	18017	8443
	% of people	68,09%	31,91%
2013	Number of people	18961	8272
	% of people	69,63%	30,37%

9. DESCRIPTION OF CURRENT LAND USE

The land cover and uses associated with the proposed prospecting application right area is dominated by livestock farming including some cultivated land owing to the increased availability of groundwater

from the underlying aquifers. The most part of the area is covered by woodland/open bush land, grassland, low shrubland, thicket/dense bush and some small patches of low lying cultivated filed, erosional dongas, plantations/woodlots mature and wetlands.

10. IMPACTS AND RISK IDENTIFIED INCLUDING NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACTS INCLUDING THE DEGREE TO WHICH THESE IMPACTS WOULD OCCUR

***Intensity: I; Frequency: F; Duration: D; Extent: E; Probability: P, Severity: S; Consequence: C and Impact Significance: IS**

Table 11: Impacts and risk identified including nature, significance, consequence, extend duration and probability of impact

Impacted Aspect	Risk description	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequences
Fauna and Flora	**Construction phase**										
	Accidental veld fires leading to habitat destruction.	3	3	2	3	0.6	2.7	2.3	1.4	Low	Loss to biodiversity due to veld fires.
	Potential risks of weeds and alien vegetation growing on cleared or disturbed areas including topsoil stockpiling area.	3	3	2	3	0.6	2.7	2.3	1.4	Low	Excessive growth of alien or weeds competing with natural vegetation.
	Operational phase										
	Migration of fauna species due to, vibrations from drill rig.	3	3	2	3	0,6	2,7	2,3	1,4	Low	Loss of fauna species due to vibrations and noise.
	Decommissioning and closure										
	Accidental veld fires leading to habitat destruction.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Loss to biodiversity due to veld fires.
	Migration of fauna species due to movement of drill team	3	3	2	3	0,6	2,7	2,3	1,4	Low	Temporally Migration of indigenous fauna species.-

POTENTIAL DIRECT IMPACTS ON GEOLOGY

Impacted Aspect	Risk description	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequences
Geology	**Construction phase**										
	No Impacts anticipated										
	Operational phase										

Impacted Aspect	Risk description	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequences
	Destruction of geological formation	2	2	2	2	0,6	2	2	1,2	Low	
	Rehabilitation phase										
	No Impacts anticipated										

POTENTIAL DIRECT IMPACTS ON GROUNDWATER/ GEOHYDROLOGY

Impacted Aspect	Risk description	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequences
Geohydrology	**Construction phase**										
	Decrease of soil buffering capacity and increasing of infiltration rate	2	2	2	2	0,6	2	2	1,2	Low	
	Altered flow systems due to probable dewatering (if required)	2	1	1	2	0,2	1,3	1,7	0,3	Very Low	
	Deterioration of water quality due to construction waste (chemical in construction material)	2	2	2	2	0,6	2	2	1,2	Low	Deterioration of water quality
	Deterioration of water quality due to hydrocarbon spills from storage (organic Contaminants)	2	2	2	2	0,6	2	2	1,2	Low	Deterioration of water quality
	Operational phase										
	Deterioration of groundwater due to leak's/spillages from mechanical fault	3	3	3	2	0,6	3	2,5	1,5	Low	Contamination of underground water
	Deterioration of groundwater due to handling and transport of waste materials	2	2	2	2	0,6	3	2,5	1,5	Low	Contamination of underground water
	Decommissioning and closure										

Impacted Aspect	Risk description	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequences
	Deterioration of water quality due to hydrocarbon spills from storage (organic Contaminants)	2	2	2	2	0,6	3	2,5	1,5	Low	Contamination of underground water
	Deterioration of groundwater due to leak's/spillages from mechanical fault	2	2	2	2	0,6	3	2,5	1,5	Low	Contamination of underground water

POTENTIAL DIRECT IMPACTS ON SURFACE WATER

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequence
Surface Water	**Construction phase**										
	Potential of service roads with carbonaceous material may result in water quality reduction.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Contamination of surface water resources.
	Risk associated with the illegal disposal of sewer waste from chemical and/or mobile toilets.	3	2	2	2	0,4	2,3	2,2	0,87	Very Low	Pollution of surface watercourses.
	Risk of illegal disposal of both general and hazardous waste into watercourses.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Pollution of surface watercourses.
	Potential spillage of hydrocarbons of construction activities including machineries and vehicles.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Contamination of surface water resources.
	Operational phase										
	Potential spillage of hydrocarbons of construction activities including machineries and vehicles.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Contamination of surface water resources.
	Risk of illegal disposal of both general and hazardous waste into watercourses.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Pollution of surface watercourses.
	Decommissioning and closure										

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Impact consequence
	Rehabilitation activities could result in additional erosion by runoff, thereby increasing the suspended solids content of the downstream watercourse.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Erosion and increase sediment load into the river.
	Potential of service roads with carbonaceous material may result in water quality reduction.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Contamination of surface water resources.
	Risk associated with the illegal disposal of sewer waste from chemical and/or mobile toilets.	3	2	2	2	0,4	2,3	2,2	0,87	Very Low	Pollution of surface watercourses.
	Risk of illegal disposal of both general and hazardous waste into watercourses.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Pollution of surface watercourses.
	Potential spillage of hydrocarbons of construction activities including machineries and vehicles.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Contamination of surface water resources.

POTENTIAL DIRECT IMPACTS SOIL STRUCTURE AND COVER MATERIAL

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
Soil structure and cover material	**Construction Phase**										
	Soil stockpiled during the preparation of the distribution drilling may be exposed to wind and rain, resulting in the erosion and loss of a proportion of the stockpiled topsoil.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Loss of soil including impact to its nutrients due to erosion
	Several activities can cause the spillage of hazardous substances, causing contamination of receiving environment. These include spillages from unmanaged ablution facilities, spillages of fuels and oils, and runoff of contaminated wastewater. All these different types of hazardous spillages are considered under this impact.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Pollution of topsoil material.
	Risk associated with the illegal disposal of sewer waste from chemical and/or mobile toilets.	3	2	2	2	0,4	2,3	2,2	0,9	Low	Pollution of topsoil material.
	Risk of illegal disposal of both general and hazardous waste into soil.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Pollution of soil structure.
	Potential spillage of hydrocarbons of construction activities including machineries and vehicles.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Pollution of soil structure.
	Operational phase										
	Potential spillage of hydrocarbons of construction activities including machineries and vehicles.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Contamination of surface water resources.
	Risk of illegal disposal of both general and hazardous waste into soil and watercourses.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Pollution of soil and surface watercourses.
	Decommissioning and closure										

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
	Rehabilitation activities could result in additional erosion by runoff, thereby increasing the suspended solids content of the downstream watercourse.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Erosion and increase sediment load into the river.
	Potential on service roads with carbonaceous material may result in soil contamination.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Contamination of topsoil layer and possible surface watercourses.
	Risk associated with the illegal disposal of sewer waste from chemical and/or mobile toilets.	3	2	2	2	0,4	2,3	2,2	0,9	Low	Contamination of topsoil layer and possible surface watercourses.
	Risk of illegal disposal of both general and hazardous waste into soil.	3	2	2	2	0,6	2,3	2,2	1,3	Low	Contamination of topsoil layer and possible surface watercourses.
	Potential spillage of hydrocarbons from construction activities including machineries and vehicles into the soil during maintenance and breakdowns.	3	3	2	2	0,8	2,7	2,3	1,9	Low	Contamination of topsoil layer and possible surface watercourses.

POTENTIAL DAMAGE TO CULTURAL, HERITAGE AND ARCHAEOLOGICAL

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
Cultural, heritage and archaeological aspects	**Construction Phase**										
	Potential damage to cultural, heritage and archaeological artefacts including graves and old building.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Damage of cultural, heritage and archaeological resources
	Operational phase										
	Potential damage to cultural, heritage and archaeological artefacts including graves and old building.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Damage of cultural, heritage and archaeological resources
	Decommissioning and closure										

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
	No impacts										

POTENTIAL OF NOISE GENERATION

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
Noise											
	Operational phase										
	Movement of Drilling team will increase noise levels.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Temporary migration of small mammals
	Drilling activities will increase noise levels.	3	3	2	2	0,6	2,7	2,3	1,4	Low	Temporary migration of small mammals
	Rehabilitation										
	Minor noise pollution is likely to occur during decommission	3	3	2	2	0,6	2,7	2,3	1,4	Low	Temporary migration of small mammals

POTENTIAL DIRECT IMPACTS ON SOCIO-ECONOMIC ASPECTS

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
Socio-economic aspects	**Construction Phase**										
	No impacts										
	Operational phase										
	Potential damage to unidentified graves	3	3	2	2	0,6	2,7	2,3	1,4	Low	Loss of Heritage

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
	Decommissioning										
	No Impacts										
	Rehabilitation										
	No impacts expected										

POTENTIAL DIRECT IMPACTS ON VISUAL AESTHETICS

Impacted Aspect	Impact summary	I*	F*	D*	E*	P*	*S	*C	IS*	Risk Rating	Consequence
Visual Aesthetics	**Construction Phase**										
	Indirect visual impact due to camp site establishment.	3	3	2	2	0,6	2,7	2,3	1,4	Low	
	Operational Phase										
	Direct visual impacts due to movement of drill team.	3	3	2	2	0,6	2,7	2,3	1,4	Low	
	Decommissioning										
	No impacts										

11. METHODOLOGY USED IN DETERMINING THE RANKING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF POTENTIAL ENVIRONMENTAL IMPACT AND RISKS

11.1. Environmental Impact Assessment Methodology/ Assessment and evaluation of potential impacts.

Impact Ranking Criteria

The criteria used for assessing the assessing the significance of the impacts are given in **Table 12**. The impact assessment method takes into account the current environment, the details of the proposed project and the findings of the specialist studies. Cognisance has been given to both positive and negative impacts that may result from the development. The significance of the impact is dependent on the consequence and the probability that the impact will occur.

Impact significance = (consequence x probability)

Where:

Consequence = (severity + extent)/2

and

Severity = [intensity + frequency + duration]/3

Each criterion is given a score from 1 to 5 based on the definitions given in **Table 12.** Although the criteria used for the assessment of impacts attempts to quantify the significance, it is important to note that the assessment is generally a qualitative process and therefore the application of this criteria is open to interpretation. The process adopted will therefore include the application of scientific measurements and professional judgement to determine the significance of environmental impacts associated with the project. The assessment thus largely relies on experience of the environmental assessment practitioner (EAP) and the information from the specialist's studies for the draft BAR.

Where the consequence of an event is not known or cannot be determined, the "precautionary principle" will be adhered to and the worst-case scenario assumed. Where possible, mitigation measures to reduce the significance of negative impacts and enhance positive impacts will be recommended. The detailed actions, which are required to ensure that mitigation is successful, will be provided in the EMPr, which will form part of the BA report.

Consideration will be given to the phase of the project during which the impact occurs. The phase of the development during which the impact will occur, will be noted to assist with the scheduling and implementation of management measures.

Table 12: Criteria for assessing the impact significance

SEVERITY CRITERIA

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

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

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

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

PROBABILITY

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

IMPACT SIGNIFICANCE

NEGATIVE IMPACTS

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

POSITIVE IMPACTS

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

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

The proposed development will result in low to moderated impacts. No Impacts of high significant will be experienced throughout the prospecting work.

11.3. The possible mitigation measures that could be applied and the level of risk

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

All possible mitigation measures that are recommended to be implemented to reduce the negative impacts or enhance positive impacts associated with this project is detailed in Part B (Environmental Management Plan EMPr).

The tables below provide a summary of the potential mitigation measures recommended by the EAP based on the understanding of the project, project activities and experiences in terms of similar projects.

11.4. The possible mitigation measures that could be applied and the level of risk

Aspect	Impacts	Mitigation	Impact (post-mitigation)			
			Extent	Duration	Probability	Level of Significance
Soils	Minor Soil disturbance of the soil at the proposed drill sites	Rehabilitate each site as soon as the drilling is completed.	Low	Short Term	Definite	Low
Vegetation	Minor Vegetation loss at the proposed drill site	Avoid vegetation clearance at all cost. Drilling to be undertaken on transformed areas.	Low	Short Term	Definite	Low
Animal Life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity	Environmental awareness training for workers. If any animals are encountered (e.g. snakes) they must not be killed or injured but should rather be removed or chased away from the site.	Low	Short Term	Definite	Low
Ground water	Contamination of Ground water dur to hydrocarbon spillages.	Establish EMP procedures to minimise hydrocarbon spills.	Low	Short Term	Possible	Low
Air quality	Dust may be created during by vehicles on dirt roads and during drilling operations.	Establish EMP procedures to minimise the generation of dust. Ensure vehicles drive slowly.	Low	Short Term	probable	Low

Aspect	Impacts	Mitigation	Impact (post-mitigation)			
			Extent	Duration	Probability	Level of Significance
Noise	Noise will be created by the drilling rig and vehicles. However, this is a rural area, and the drilling sites are not located close to a residential area	Ensure vehicles and equipment are maintained. Silencers should be fitted on all engines.	Low	Short Term	Definite	Low
Cultural Heritage	There are no known important heritage resources on the site.	If any heritage resources, including graves or human remains, are encountered these must be reported to South African Heritage Resources Agency immediately.	Low	Short Term	Possible	Low
Visual	The prospecting activity will not change the visual character of the area.	Rehabilitate drill sites and access tracks.	Low	Short Term	Definite	Low
Socio-Economic	If an economically viable coal resource is delineated this could have a significant positive socio-economic impact, however a mining right application would be subject to a separate EIA process. Some boreholes may be drilling in fields used for growing maize.	Environmental awareness training will be provided to all workers. Maximise procurement of goods and services from local providers. If drilling results in the loss of production of vegetables or any other crop, then compensation will be paid to the landowner.	Low	Short Term	Definite	Low (Positive)

Aspect	Impacts	Mitigation	Impact (post-mitigation)			
			Extent	Duration	Probability	Level of Significance
Traffic and access	Prospecting activities will generate very limited additional traffic. Prospecting vehicles are to access the property via existing roads and tracks only	Comply with traffic regulations. Keep to speed limits Ensure compliance with the EMP.	Low	Short Term	Definite	Low
Cumulative Impacts	There are no significant cumulative impacts associated with this prospecting programme.	No mitigation required for prospecting.	N/A	N/A	N/A	N/A

12. MOTIVATE WHERE ALTERNATIVE SITES WERE CONSIDERED

The proposed site was selected based on the geological formation of the area and the likelihood of minerals; the alternatives considered where based on the technological method instead of the proposed site. The borehole location will be placed 100m from any wetland areas to avoid contamination of any wetland areas.

a) Preferred site alternative

No alternative sites where considered; the site was selected based on mineral reserves that are believed to exist in the study area.

b) Preferred activity alternative

No additional alternative activities have been investigated.

c) Preferred technology alternative

No additional technological alternatives were investigated

d) No-go alternative

13. FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSES AND RANK THE IMPACTS AND RISK THE ACTIVITY WILL IMPOSE ON THE SITE (IN RESPECT TO FINAL SITE LAYOUT) THROUGH THE LIFE SPAN OF THE ACTIVITY.

The site selection process was determined using suitability of the overall site looking at factors such as proximity to existing mining, proximity to mine infrastructure and environmental impacts that the site might experience.

13.1. Assessment of each identified potential significant impact and risk

Additional information with respect to the mitigation measures are addressed as part of the EMPr.

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
Delivery of equipment on site.	Increase levels of noise	Noise	Planning phase	Low	Control through noise reduction measures	Very Low
	Increased levels of fugitive dust as a result of increased vehicle movement and transportation of material	Air Quality	Planning Phase	Low	Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme	Very Low
	Accidental hydrocarbon spillages	Soil Quality	Planning Phase	Low	Prevent accidental spills from vehicles and equipment used through regular maintenance and	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan.	
Drilling of Exploration Boreholes	Increased levels of fugitive dust as a result of increased vehicle movement, site clearing and transportation of material. Potentially affecting the communities along the access route to the proposed mining development. Increased levels of ambient air pollutants; i.e. carbon monoxide (CO), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulate matter (PM_{10}).	Air Quality	Construction	Low	Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme	Very Low
	Soil contamination from hydrocarbon spills Increased erosion	Soils	Construction	Low	Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible. Reduce erosion and compaction though:	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					• Stockpiling soils. • Vegetate and/or cover soil stockpiles. • Install erosion berms, if required. • Restrict vehicle movement to project related areas. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan.	
	Vibrations from drill rig	Impact to small fauna occurring at the site.	Construction	Low	Drilling must be positioned outside of the 500 m from wetland areas and on an area disturbed by agricultural activities.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
	Increased in silt load in runoff and erosion	Surface Water	Construction	Low	Prevent through the implementation of proper erosion protection and storm water management measures. Minimise stormwater runoff through conducting site clearing and construction during dry season. Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible.	Very Low
	Surface water contamination	Surface Water	Construction	Low	Monitor and control surface water quality. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					and equipment used through regular maintenance and services of such machinery.	
	Loss of Mean Annual Runoff	Surface Water	Construction	Low	Prevent through the implementation of proper erosion protection and storm water management measures. Control flow regime through conducting site clearing and construction during dry season.	Very Low
	Groundwater contamination	Groundwater	Construction	Low	Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Sealing of impacted aquifers that will be intercepted when developing box cut	
	Increased ambient noise levels	Noise	Construction	Low	Control through noise control measures and limiting pre-construction activities to day time periods.	Very Low
	Increased dust level	Visual	Construction	Low	Control level of nuisance dust through implementing dust suppression measures. Control through limiting pre-construction activities to day time periods.	Very Low
	Job creation	Socio-Economic	Construction	Very Low	No Mitigation	Very Low
	Dust, noise, loss of soil and vegetation	Cumulative	Construction	Low	Control level of nuisance dust through implementing dust suppression measures. Control through limiting pre-construction activities to day time periods.	Very Low
Operation of the drill rig	Increased levels of nuisance dust	Air Quality	Operations	Low	Control through implementing restricted speed limits when using access road.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Control through regular maintenance and service of vehicles used for maintenance. Control level of fugitive dust through implementing dust suppression techniques, if required.	
	Soil contamination from accidental hydrocarbon spills	Soils and land use	Operations	Low	Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan. Limit through restricting vehicle movement to areas of need.	Very Low
	Loss of habitat/fauna species	Flora and Fauna	Operations	Low	Prevent through waste management measures.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Control through implementing the Spill Management Plan. Control through implementing Alien Plant Eradication Plan. Control level of fugitive dust through implementing dust suppression techniques, if required. Limit through restricting vehicle movement to areas of need. Prevent trapping or hunting of fauna through environmental awareness plan.	
	Increased erosion potential	Surface water	Operations	Low	Prevent through the implementation of proper erosion protection and storm water management measures. Minimise area of disturbance to as small as practically possible.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
	Surface water contamination	Surface water	Operations	Low	Monitor and control surface water quality through updating and implementing the mine's water monitoring programme. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery.	Very Low
	Increased ambient noise level	Noise	Operations	Low	Control through noise control measures and limiting maintenance activities to day time periods.	Very Low
	Alteration of natural landscape	Visual	Operations	Low	Control level of fugitive dust during maintenance activities through implementing dust suppression techniques, if required. Control through revegetation	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					measurements and rehabilitation. Prevent littering through waste management control measures. Limit through landscaping and use of appropriate non-reflective infrastructure.	
	Positive impact on livelihoods	Socio-Economic	Operations	Very Low	Enhance through: Retaining employees. Implementing skills development policy in line with Social and Labour Plan.; Adhering to the mine's local labour recruitment and procurement policies.	Very Low
	Noise, alteration of landscape	Cumulative	Operations	Low	Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Monitor and control through updating and implementing dust monitoring programme as per the mine's requirements.	
Rehabilitation of boreholes	Increased levels of fugitive dust as a result of increased vehicle movement, due to shaft demolishing and rehabilitation activities associated with transportation of material. Increased levels of ambient air pollutants; i.e. carbon monoxide (CO), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulate matter (PM_{10}).	Air Quality	Decommissioning and closure	Low	Control level of fugitive dust through implementing dust suppression techniques. • Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. • Monitor and control through updating and implementing dust monitoring programme	Very Low
	Waste generated as part of the demolishing activities: Littering or improper disposal of waste	Waste management impacting on soil and water	Decommissioning and closure	Low	Any waste contaminated with hazardous material including hydrocarbon must be disposed of as hazardous waste in a licensed hazardous waste landfill site.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
	Replacement of topsoil and reinstating of the land capability Increased erosion	Soils, land use and land capability	Decommissioning and closure	Low	Rehabilitate the disturbed areas that were impacted by the drilling	Very Low
	Soil contamination from hydrocarbon spills	Soil	Decommissioning and closure	Low	Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the mine's Spill Management Plan. Ensure the availability of drip trays and oil spill kits on site.	Very Low
	Reinstating of vegetation and possible returning of fauna and habitats	Fauna and flora	Decommissioning and closure	Low	Prepare the seedbed with application of fertilisers or kraal manure and lime; Vegetate the prepared area with government approved indigenous seed mix; Ensure that annual rehabilitation vegetation audits are	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					undertaken on the rehabilitated areas.	
	Increased in silt load in runoff and possible of erosion	Surface Water	Decommissioning and closure	Low	Construct erosion control measures as part of the rehabilitation activities (berms and contour drains where possible) Prevent stormwater runoff by conducting site rehabilitation work during dry season. Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible.	Very Low
	Surface water contamination	Surface Water	Decommissioning and closure	Low	Continue to monitor and control surface water quality as per the mine's water monitoring programme until closure. Control spills through effectively cleaning spills according to the Spill Management Plan.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery.	
	Groundwater contamination	Groundwater	Decommissioning and closure	Low	Continue to monitor groundwater quantities and qualities as part of the groundwater monitoring programme for the mine until closure. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Sealing of the shaft as detailed above.	
	Increased ambient noise levels	Noise	Decommissioning and closure	Low	Control through noise control measures and limiting activities to day time periods.	Very Low
	Increased dust level	Visual	Decommissioning and closure	Low	Control level of nuisance dust through implementing dust suppression measures during rehabilitation activities. Control through limiting activities to day time periods.	Very Low
	Job creation and business opportunities	Socio-Economic	Decommissioning and closure	Very Low	Enhance through adhering to the mine's recruitment of local labour and sourcing of local businesses as part of the recruitment and procurement policies.	Very Low
	Dust, noise, loss of soil and vegetation	Cumulative	Decommissioning and closure	Low	Control level of nuisance dust through implementing dust suppression measures.	Very Low

Name of Activity	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE If not mitigated	MITIGATION TYPE	SIGNIFICANCE If mitigated
					Control through limiting activities to daytime periods.	

14. SUMMARY OF SPECIALIST STUDIES

LIST OF SPECIALIST STUDY UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THIS REPORT	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
A DESKTOP BIODIVERSITY ASSESSMENT was undertaken by Ecology International No other new specialist's studies were undertaken, but the applicable existing studies which were undertaken as part of the current approved environmental management programme were used which included: • Land use and land capability; • Soils; • Surface water; • Wetlands and sensitive areas, etc. • Heritage Impact Assessment; • Blasting; • Surface water assessment; etc			

15. ENVIRONMENTAL IMPACT STATEMENT

15.1. Summary of the key findings of the Environmental Impact Assessment

To date, there are no serious flaws that have been identified for the project. An EMPr has been developed as part of Basic Assessment Process to enhance the mitigation of these impacts as far as practicable. It is anticipated that it will be possible to successfully mitigate the majority of the environmental impacts to acceptable levels and the implementation will be monitored and audited to determine the effectiveness of the measures implemented.

However, certain of the identified, potential impacts require careful mitigation and monitoring, these include:

- The stripping and stockpiling of the topsoil; and
- The management of noise and dust associated with the mining activities.

It is recommended that the proposed project is allowed to proceed, given the relatively insignificant potential impacts of the project to cumulative impacts (given appropriate environmental management) and also considering the positive social impacts associated with the project**.**

15.2. Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as Appendix**.**

Please refer to **Appendix 2** for the final site layout map including sensitive areas in relation to the project infrastructure.

16. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUT COMES FOR INCLUSION IN THE EMPR

This EMPr will be compiled to meet the following objectives

- Monitor the activities that may have a detrimental impact on the environment.
- Recommend mitigation measures that will need to be taken to mitigate or minimise impacts.
- Moreover, ensuring that the appointed onsite contractor maintains adequate control over the project environmental issues in order to: -
    - Minimize the extent of the impact during construction and operation of the mine and associated infrastructure;
    - Ensure appropriate restoration of areas affected by construction activities after construction has been completed, and
    - Prevent long-term environmental degradation.
- Ensure that the mitigation/rehabilitation measures and recommendation referred to in this report are implemented and to ensure the compliance with the provisions of the EMPr.

The closure objectives which will drive the closure criteria are:

- Adhere to all statutory and other legal requirements;
- Ensure safety & health of all stakeholders during closure and post closure and that communities using the site after closure are not exposed to unacceptable risks;
- Ensure that closure supports productive uses considering pre-mining conditions and are in agreement with commitments to stakeholders;
- Physically and chemically stabilise remaining structures to minimise residual risks;
- Promote bio-diversity and biological sustainability to the maximum extent practicable;
- Utilize closure strategies that promote self-sustaining conditions with little or no need for on-going care and maintenance.

17. ASPECTS OF INCLUSION AS CONDITION OF AUTHORISATION

No Conditions have been identified for inclusion.

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

The EAP is knowledgeable and experienced on the compilation of environmental impact assessment process, including mining activities and related infrastructural developmental projects. In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client, Project Managers and previous undertaken specialists' studies are assumed to be correct, accurate and unbiased.
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the proposed development.

In addition, the following recommendations can also be included as conditions of authorisation:

- Terrestrial ecological assessment (flora & fauna)
    - **Development footprint**
        - It is recommended that the drilling activity and associated infrastructure be situated outside of any drainage features.
        - The footprint of the drilling area must be minimised, and all disturbed areas must be rehabilitated after construction.
        - The boundaries of the development footprint areas are to be clearly defined and it should be ensured that all activities remain within defined footprint areas.
    - **Drainage Lines**
        - The project footprint must fall outside of the 1:100-year floodline of the riparian features or 100m from the edge of the feature.
        - Access into adjacent drainage lines, particularly by vehicles, is to be strictly controlled.
        - All vehicles should remain on designated roads with no indiscriminate driving through adjacent drainage features.
        - Run-off from dirty water areas entering drainage lines must be prevented and clear separation of clean and dirty water in the vicinity of the proposed mining area must take place. Oil must be prevented from entering the clean water system.
        - Ensure that seepage from dirty water systems is prevented as far as possible.
        - It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. All vehicles must be regularly inspected for leaks.

- Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.
- All adjacent drainage lines must be monitored for erosion and incision.

- **Fires**
  - Informal fires should be prohibited during all development phases.
- **Dust Control**
  - It must be ensured that all roads and construction areas are regularly sprayed with water in order to curb dust generation. This is particularly necessary during the dry season when increased levels of dust generation can be expected. These areas should not be over-sprayed causing water run-off and subsequent sediment loss into waterways and drainage lines in the vicinity of the study area.
- **Fauna species**
  - It is recommended that a speed limit of 40km/h is implemented on all roads running through the subject property in order to minimise risk to fauna from vehicles. Speed humps may be constructed to help slow vehicles and help mitigate collision with faunal species.
  - Education and awareness campaigns on faunal species and their habitat are recommended to help increase awareness, respect and responsibility towards the environment for all staff and contractors.
  - No trapping or hunting of fauna is to take place and access control into sensitive areas must be implemented to ensure that no illegal trapping or poaching takes place.
- **Noise Impact Assessment**
  - Construction activities to take place during daytime periods only (sunrise to sunset);

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

19.1. Reasons why the activity should be authorized or not.

LEM has undertaken the Basic Assessment for the proposed Bonizenzo prospecting EMPr in accordance with the requirements of the NEMA and MPRDA. This has included public participation process which has sought to identify stakeholders, provide these parties with an adequate opportunity to participate in the project process and guide technical investigations that have taken place as part of the impact assessment phase of this study.

To date, there are no serious flaws that have been identified for the project. However, certain of the identified, potential impacts require careful mitigation and monitoring.

An EMPr has been developed as part of Basic Assessment Process to ensure the mitigation of these impacts as far as practicable. It is anticipated that it will be possible to successfully mitigate most of the environmental impacts to acceptable levels and the implementation will be monitored and audited to determine the effectiveness of the measures implemented.

It is recommended that the proposed project can proceed, given the relatively small potential contribution of the project to cumulative impacts (given appropriate environmental management) and considering the positive social impacts associated with the project.

19.2. Conditions that must be included in the authorisation

Regular monitoring of all the environmental management procedures and mitigation measures shall be carried out by the Company to ensure that the provisions of this EMP are adhered to.

20. PERIOD OF WHICH THE PERIOD OF ENVIRONMENTAL AUTHORISATION IS REQUIRED

The validity of the Environmental authorisation in terms of this proposed project should be for Prospecting Right Lifetime.

21. UNDERTAKING

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

The EAP confirms that the undertaking required to meet the requirements of this section is provided as part of the environmental application document and EMPRr and is applicable to both the draft Basic Assessment and Environmental Management Programme.

22. FINANCIAL PROVISION

Refer to **Appendix 5** for the closure costs quantum.

22.1. Explain how the aforesaid amount was derived

The calculated closure provision was calculated based on the areas that will need to be cleared, dismantled, removed and/or disposed of as part of the decommissioning and closure final rehabilitation process. Below are some of the parameters that were considered when calculating this closure provision:

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

Bonizenzo has confirmed that this amount will be provided as part of the annual financial provision that the mine conducts and submits to the Department.

23. SPECIFIC INFORMATION REQUIRED BY THE COMPETED AUTHORITY

23.1. Compliance with the provision of section 24(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (107 of 1998) the EIA must include the following: -

a. Impact on the socio-economic condition of any directly affected person.

From an economic perspective, this project is highly desirable, with significant benefits to the local area, region and the country. It is expected that the project will not create short term jobs during the exploration phase however should mineral reserve be identified the possibility of mining is highly and potential job creation during mining can be expected.

Direct and indirect contribution to the regional economy due to capital investment associated with the project. This project will ensure that the supply of minerals to local and international markets.

b. Impacts on any estate referred to in section 3(2) of the National Heritage Resource Act

None

i) Other matters required in terms of the section 24(4)(a) and (b) of the Act

Not applicable as alternatives have been considered in terms of this proposed project.

APPENDIX 1: CV AND DECLARATION

APPENDIX 2: SITE LAYOUT PLAN

APPENDIX 3: CORRESPONDANCE WITH AUTHORITIES

APPENDIX 4: PUBLIC PARTICIPATION PLAN

APPENDIX 5: FINANCIAL PROVISION

APPENDIX 6: TITLE DEEDS AND LANDOWNERS DETAILS