

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

ENVIRONMENTAL AUTHORISATION APPLICATION AND PROSPECTING RIGHT FOR PGMS, COPPER, NICKEL, COBALT, CHROME, GOLD IN REMAINING EXTENT OF PORTION 1, 2, 4, REMAINING EXTENT OF PORTION 5, 7, 11, 13 & RE OF THE FARMS RIETFontein 375 KT AND ZWAKWATER 377 KT SITUATED UNDER THE MAGISTERIAL DISTRICT OF LYDENBURG, MPUMALANGA PROVINCE

DMRE REF: MP 30/5/1/1/2/17297 PR

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2022

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**mineral resources
& energy**

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA



mineral resources & energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

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File reference number: MP 30/5/1/1/2/ 17297 PR

IMPORTANT NOTICE

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

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

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

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

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process—

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives;
- (d) through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

DOCUMENT CONTROL

Project Title:	Prospecting Right Application on Remaining Extent of Portion 1, 2, 4, Remaining Extent of Portion 5, 7, 11, 13 & RE of the Farms Rietfontein 375 KT and Zwakwater 377 KT
Minerals	Platinum Group Metals, Copper, Nickel, Cobalt, Chrome and Gold
Site Location	Lydenburg Magisterial District, Mpumalanga Province.
Compiled on behalf of	Jaments (Pty) Ltd
Compiled By	Mr Abel Mojapelo
Reviewed By	Dr Kenneth Singo
Version	1
Submission to	Department of Mineral Resources and Energy
Date	2022

Disclaimer

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

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

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

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

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

EXECUTIVE SUMMARY

Jaments (Pty) Ltd (the Applicant) has applied for a Prospecting Right under Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an Application for Environmental Authorization under Chapter 6 of GNR 326 promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA) to prospect for gold, copper, iron, and platinum group metals.

The proposed project will aim to ascertain if economically viable mineral deposit exists within the application area. To undertake prospecting activities, **Jaments (Pty) Ltd** will necessitate the acquisition of a Prospecting Right under the Mineral and Petroleum Resources Development Act (MPRDA, Act No. 28 of 2002). In addition, the Applicant must acquire an Environmental Authorisation (EA) under the National Environmental Management Act (NEMA, Act No. 107 of 1998), which requires the submission of a Basic Assessment Report (BAR). **Singo Consulting (Pty) Ltd** has been chosen by **Jaments (Pty) Ltd** to compile the BAR (this report) in favor of the Prospecting Right application submitted by **Jaments (Pty) Ltd**, which in turn will be presented to the DMRE for adjudication.

This has been created to comply with the requirements for a BAR and an Environmental Management Program Report (EMPr) as laid out in the 2014 EIA Regulations. under the NEMA. The Department of Mineral Resources and Energy (DMRE) will be the adjudicating authority for this application, and this report has been prepared in accordance with the appropriate DMRE standards and reporting template.

The proposed area for Prospecting right is situated over the farm Rietfontein 375 KT and Zwakwater 377 KT, in the Thaba Chweu Local Municipality under the Lydenburg Magisterial District. Both farms are zoned for agriculture (crop farming and livestock). Several landowners were consulted and given BIDs during ground truthing on the 25th August 2022.

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LIST OF ABBREVIATIONS

BAR	: Basic Assessment Report
BID	: Background Information Document
CA	Competent Authority
CBA	Critical Biodiversity Area
DAFF	Department of Agriculture, Forestry and Fisheries
DEFF	Department of Environmental, Forestry and Fisheries
DMRE	: Department of Mineral Resources and Energy
DWS	: Department of Water and Sanitation
EA	: Environmental Authorisation
EAP	: Environmental Assessment Practitioner
EIA	: Environmental Impact Assessment
EIMS	: Environmental Impact Management Services
EMPr	: Environmental Management Programme Report
GIS	: Geographic Information System
I&AP	: Interest and Affected Party
MPRDA	: Mineral and Petroleum Resources Development Act
NEMA	: National Environmental Management Act
NEMWA	: National Environmental Management Waste Act
NWA	: National Water Act
PPP	: Public Participation Process
PRA	: Prospecting Right Application
PWP	: Prospecting Works Programme

IMPORTANT NOTICE

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

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

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

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The basic assessment process goal

The objective of the basic assessment process is to, through a consultative process—

- (f) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (g) identify the alternatives considered, including the activity, location, and technology alternatives;
- (h) describe the need and desirability of the proposed alternatives;
- (i) through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (j) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative; (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. Contact Person and Correspondence Address

a) Details of:

(i) Details of the Environmental Technician.

Name of the Technician	Abel Mojapelo
Tel No.	+27 13 692 0041
Cell No.	+27 71 362 7894
Fax No.	+27 86 515 4103
Email	abel@singoconsulting.co.za

(ii) Details of Principal EAP.

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

b) Expertise of the EAP (s)

- **Dr Kenneth Singo**

University of Johannesburg, PhD (Applied Environmental Mineralogy & Geochemistry).

(Attach the EAP's curriculum vitae as Appendix)

c) Summary of the appointed consulting firm

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

The company aims to be a consulting firm that communicates sound environmental services solutions. Singo Consulting (Pty) Ltd takes pride in the fact that it holds no equity in any project and is owned by the staff, enabling it to offer clients objective support on crucial issues.

2. Locality of the Overall Activity

Table 1: Location of the Overall Activity

Farm Name:	on RE of Portion 1, 2, 4, RE of Portion 5, 7, 11,13 & RE of the Farms Rietfontein 375 KT and Zwakwater 377 KT
Application area (Ha)	4 696.860 ha
Magisterial district:	Lydenburg
Distance and direction from nearest town	Approximately 8.31 km North-west of Steelpoort and approximately 11.88 km west of Ga Mampuru
21-digit Surveyor General Code for each farm portion	TOKT00000000037500005 TOKT00000000037500001 TOKT00000000037500002 TOKT00000000037500011 TOKT00000000037500007 TOKT00000000037500000 TOKT00000000037700000 TOKT00000000037500013 TOKT00000000037500004

2.1. Locality map

(show nearest town, scale not smaller than 1:150 000)

The proposed project area is located approximately 8.31 km North-west of Steelpoort and approximately 11.88 km west of Ga Mampuru. The proposed area is located within Thaba Chweu local municipality, Lydenburg magisterial district in Mpumalanga Province.

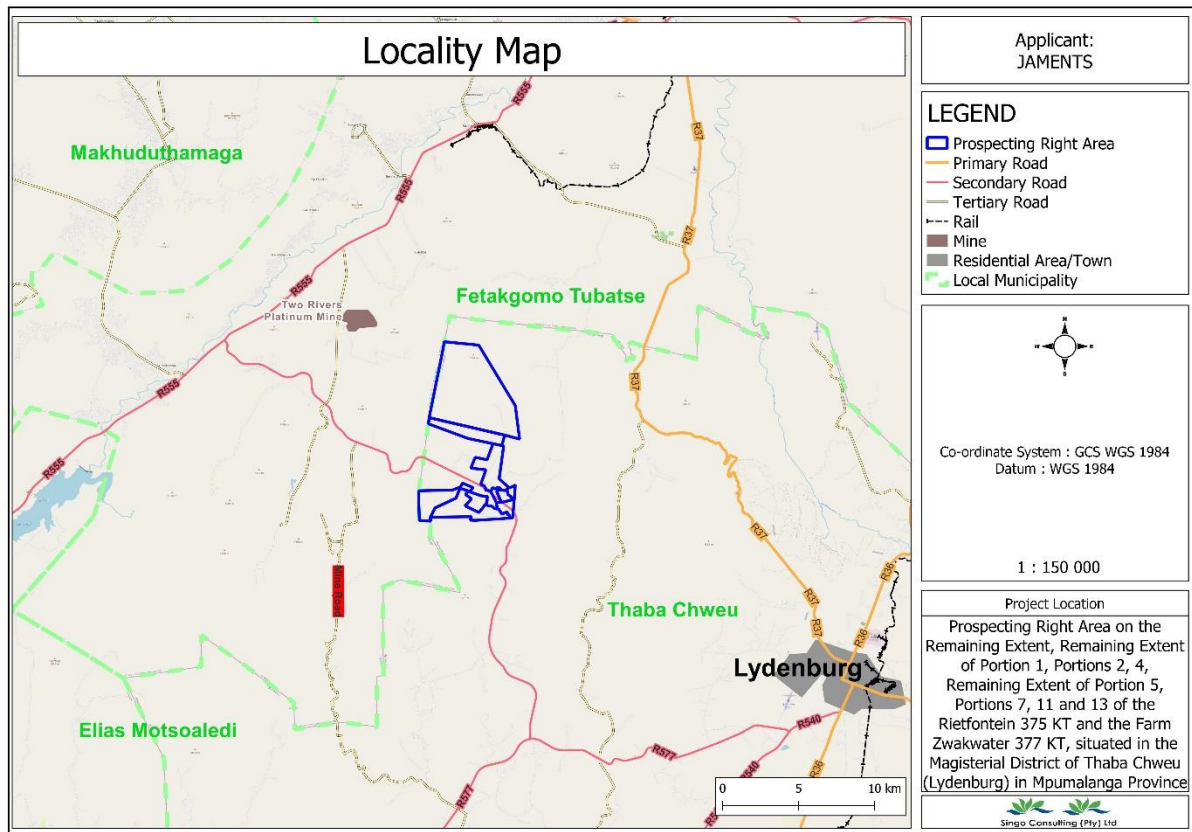


Figure 1: Locality map of the project area.

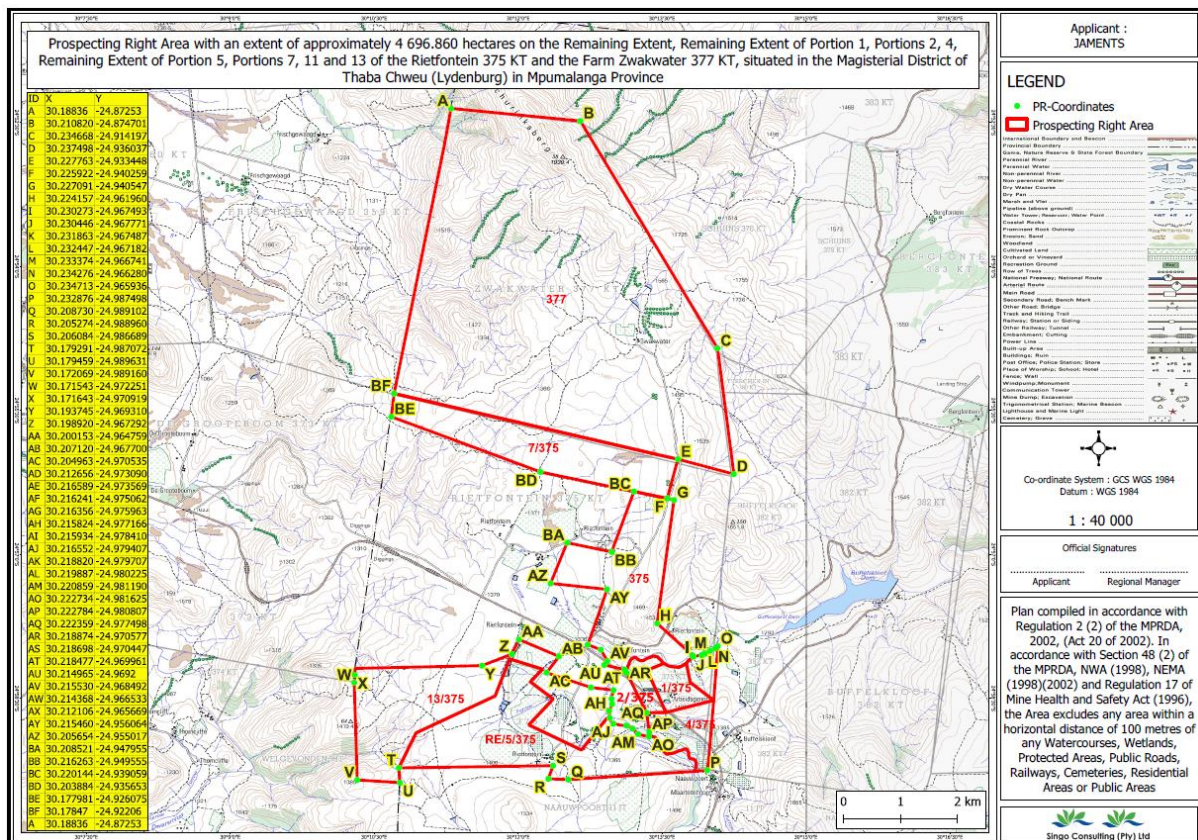


Figure 2: Reg 2.2 Map of the proposed project area.

2.2. Description of the intended overall activity's scope

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

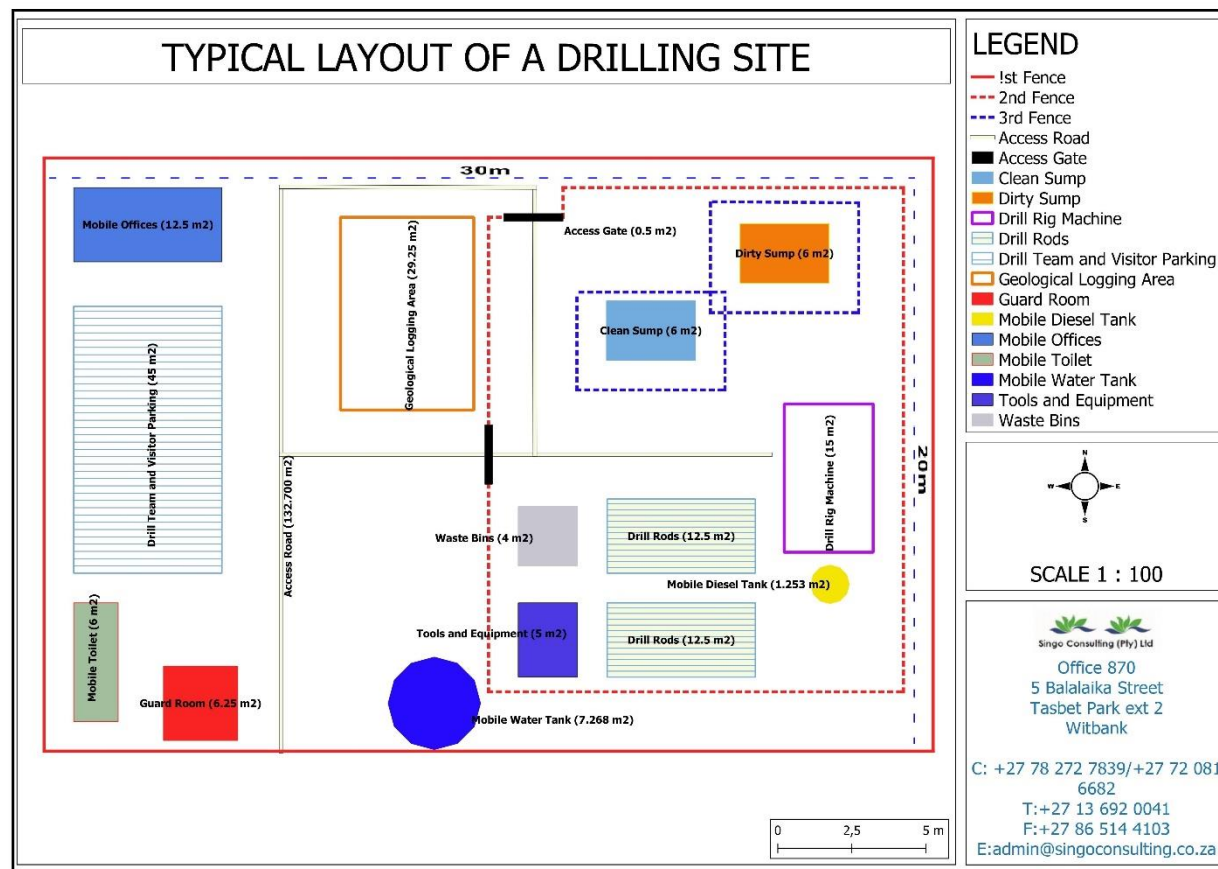


Figure 3: Typical layout plan of a drilling site.

2.3. Activities that are listed and specified

Table 2: Activities that are listed and specified.

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc. E.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE GNR 517, 11 June 2021	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
Prospecting Area	4 696.860 ha	X	GNR Listing 517 Notice 1, Activity 20.	Not required
Vegetation clearing	0.9 ha		Not Listed	
Drilling	0.9 ha		Not Listed	
Access Road	9 622,12 m ²		Activity 24 (i)	
Mobile Toilet	6 m ²		Not Listed	
Guard Room	6.25 m ²		Not Listed	
Mobile Offices	12.5 m ²		Not Listed	
Geological Core Logging Area	29.5 m ²		Not Listed	
Parking Lot	45 m ²		Not Listed	
Access Gate	0.5 m ²		Not Listed	
Dirty Sump	6 m ²		Not Listed	
Clean Sump	6 m ²		Not Listed	

Drill Rig	15 m ²		Not Listed
Drill Rods	25 m ²		Not Listed
Diesel Tank	1.253 m ²		Not Listed
Waste Bins	4 m ²		Not Listed
Tools & Equipment	5 m ²		Not Listed
Mobile water tank	7.268 m ²		Not Listed

Table 3: Summary of the drilling activities.

Drilling method	Diamond drilling
Number of boreholes	15
Depth of boreholes	100m
Duration of drilling	A borehole takes about 4 days to complete; 15 will take at least 60 days.
Demarcated working area	0.9 ha for all 15 drilling sites
Total area to be disturbed	30*20=600m ² 15 boreholes* 600m ² =9000 m ² 9000 m ² ÷10000= 0.9ha

2.4. The following is the list of activities that will be performed.

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

Background

Jaments (Pty) Ltd is applying for a Prospecting Right without bulk sampling, to prospect for PGMs, Copper, Nickel, Cobalt, Chrome, and Gold minerals on the aforementioned properties. The area demarcated for the prospecting covers an extent of approximately 4 696.860 ha (refer to Table 1 above)

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

Description of the prospecting methods to be undertaken:

- **Planned non-invasive activities:**

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

- Consultation with landowners:

Land Tenure Specialist will visit the respective landowners prior to the proposed prospecting and arrange all issues relating to the envisaged prospecting programme such as dates, access routes, availability of water, and rehabilitation of the drill sites and any other items of mutual concern. Official permission together with all agreed requirements will be in writing.

- Data processing and validation:

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

- ❖ Electronic procession of borehole data
- ❖ Validation of lithological data versus analytical data.
- ❖ Stratigraphic correlation of PGMs, Copper, Nickel, Cobalt, Chrome, and Gold .
- ❖ Editing and correction of data on database.

- PGMs, Copper, Nickel, Cobalt, Chrome, and Gold quality modelling:

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

- Compilation of geology report:

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

- Inspection/Consultation with landowner:

Land Tenure Specialist will visit the boreholes during and after prospecting has been completed. Once confirmation has been obtained that the area had been properly rehabilitated, sign off will be obtained from the landowners and compensation paid for any damages caused as a result of the prospecting.

- **Planned invasive activities:**

- Diamond drilling:

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

- **Pre-feasibility studies**

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

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

Table 4: Proposed prospecting phases and time frames.

Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
Phase 1: Invasive Prospecting						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 1 (30 days)	Borehole core data PGMs, Copper, Nickel, Cobalt, Chrome, and Gold core samples Rock core samples	Month 1 Month 2 – 3	Exploration Geologist Laboratory analyst
	Sampling	Exploration Geologist		Core analyses Rock core analyses		
Phase 1: Non-invasive Prospecting						
	Consultations with landowners	Land Tenure Specialist	Month 1	Legal Access Agreement	Month 1	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 7-8	Stratigraphic correct borehole data Analytical correct borehole data	Month 8 – 10 Month 8 - 10	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and PGMs, Copper, Nickel, Cobalt, Chrome, and Gold quality modelling	Exploration Geologist	Month 10-12	Contour maps Reserve breakdown	Month 10-12	Exploration Geologist /Modeller
	Inspection/Consultation with landowners	Land Tenure Specialist /Drilling contractor	Month 5-6	Rehabilitation clearance certificate	Month 5 - 6	Land Tenure Specialist / Environmental officer
Phase 2: Invasive Prospecting						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 13	Borehole core data	Month 13	Exploration Geologist Laboratory analyst

				PGMs, Copper, Nickel, Cobalt, Chrome, and Gold core samples Rock core samples Core analyses Rock core analyses	Month 13-14	
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 13-15	Lithology data Structural data	Month 13-14	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 13-14	Borehole water yield Water samples	Month 17-20	Geohydrologist
Phase 2: Non-invasive Prospecting						
	Consultation with landowners	Mining Rights officer	Month 12	Legal Access Agreement	Month 12	Land Tenure Specialist
Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
	Data processing and validation	Exploration Geologist	Month 17-18	Stratigraphic correct borehole data Analytical correct borehole data	Month 20 – 22 Month 20 - 22	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and PGMs, Copper, Nickel, Cobalt, Chrome, and Gold mineral grade quality modelling	Exploration Geologist	Month 22-24	Contour maps Reserve breakdown	Month 22-24	Exploration Geologist /Modeler
	Inspection/Consultation with landowners	Mining Rights officer	Month 16-17	Rehabilitation clearance certificate	Month 16 - 17	Land Tenure Specialist / Environmental officer
Phase 3: Invasive Prospecting						

	Diamond drilling (5 boreholes)	Exploration Geologist	Month 25	Borehole core data PGMs, Copper, Nickel, Cobalt, Chrome, and Gold ore core samples Rock core samples Gold ore, Iron ore, Copper ore and PGM core analyses Rock core analyses	Month 25 Month 25-60	Exploration Geologist Laboratory analyst
	Directional drilling (Optional)	Exploration Geologist	Month 24-30	Lithological data	Month 24-60	Exploration Geologist
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 25-27	Lithology data Structural data	Month 25-60	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 25-26	Borehole water yield Water samples	Month 29-60	Geohydrologist
Phase 3: Non-invasive Prospecting						
	Consultation with landowners	Mining Rights officer	Month 24	Legal agreement	Month 24	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 29-30	Stratigraphic correct borehole data Analytical correct borehole data	Month 32 – 60 Month 32 - 60	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and PGMs, Copper, Nickel, Cobalt, Chrome, and Gold mineral quality modelling	Exploration Geologist	Month 34-36	Contour maps Reserve breakdown	Month 34-60	Exploration Geologist /Modeler

	Inspection/consultation with landowners	Land Tenure Specialist	Month 28-29	Rehabilitation clearance certificate	Month 28 - 60	Land Tenure Specialist / Environmental officer
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2.5. Ancillary activities

2.5.1. Access roads

The proposed project area is accessible through a tar connecting to R577. There are pathways that exist within the project area which will be used to access the borehole locations, some new road(s) will be constructed where some boreholes are not accessible. The applicant must conduct a detailed technical assessment of the proposed site by negotiating access with the land and surface rights owners as well as the lawful occupiers of the farm. An agreement on access to the project area will be reached and agreed with the landowner. See **Photo 1** for access roads to the project area.

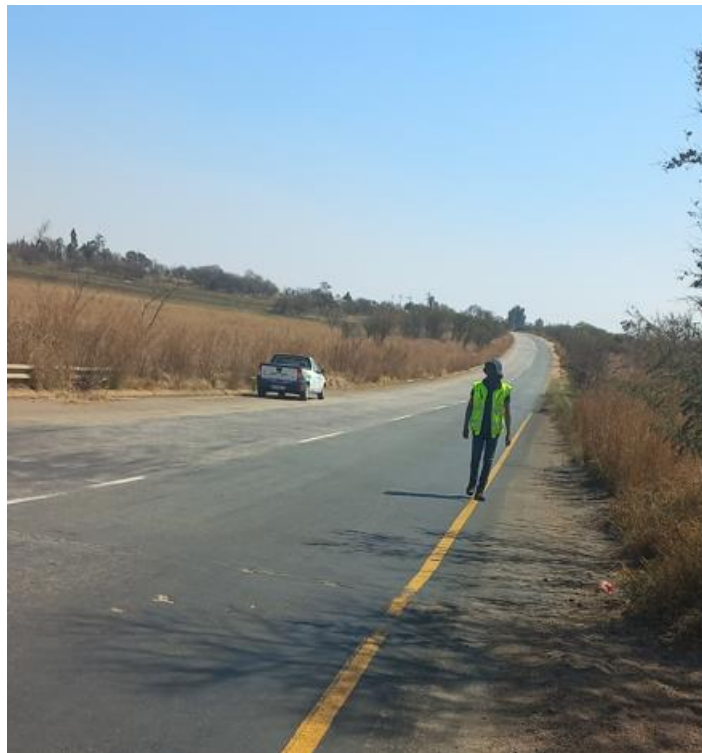


Photo 1: the Access Road to the proposed site for prospecting.

2.5.2. Water supply

Drilling mechanisms to be employed using compressed air instead of water, and therefore water will only be required by personnel on site for drinking purposes. A temporary storage tank of portable water for drinking and general usage will be provided on site. This water will be bought in water containers from water distributors such as Oasis. During the prospecting operations, best practice guidelines will be implemented so as to prevent future pollution in waterbodies.



Figure 4: Temporary water tank to be used on site.

2.5.3. Ablution facilities

Portable mobile toilets will be installed on site for ablution purposes, thus reducing potential pollution associated with erecting sewage pipes underground. Portable toilets are dynamic, they can be moved from drill site to drill site, once drilling activities ceases, portable toilets will be easily removed from the drill site.



Figure 5: Portable mobile toilets to be used.

2.5.4. Temporary office area

Temporary office shades will be erected on site. No electricity will be generated on site. Meals will be provided to staff and staff as no heating and / or cold facilities will be available. A shady restaurant will be provided.



Figure 6: Office shade to be used on site.

2.5.5. Accommodation

Accommodation will not be provided on site, but on nearby towns (Lydenburg) and areas near the proposed area. Night security will be employed once the drilling equipment has been established on site.

2.5.6. Blasting and hazardous product storage

Blasting is beyond the scope of this project as no bulk sampling is possible under the Prospecting Work Programme (PWP), no blasting will occur. Instead, the project will include geological mapping, exploration drilling, sampling, resource modelling, and resource reporting. Limited quantities diesel fuel, oil and lubricants will be transported with the pick-up truck to the drill site.

2.5.7. Storage of dangerous goods

During prospecting / drilling activities, a limited amount of diesel, oil and lubricants will be stored in the area. The only hazardous materials will be stored in any appropriate metal containers with concrete slabs next to them to prevent soil contamination. Less than 30m³ will be stored in above ground diesel storage tanks



Figure 7: Typical example of fuel transport to the site.

3. Context of Policy and Legislation

Table 5: Policy and legislative context.

Applicable Legislation and Guidelines	Reference Where Applied (i.e. where in this document has it been explained how the development complies with and responds to the legislation and policy context)	How does this Development Comply with and Respond to the Legislation and Policy Context
National Environmental Management Act (No. 107 of 1998)(NEMA):	This entire report is prepared as part of the prospecting right application under the NEMA, section 24	In terms of the National Environmental Management Act an Application for Environmental Authorisation subject to a Basic Assessment Report and Environmental Management Programme Report. The application was lodged at the DMRE
Minerals and Petroleum resources Development Act (No.28 of 2002) (MPRDA): In support of the Prospecting Right Application submitted by Jaments (Pty) Ltd, the applicant is required to conduct a NEMA BAR process in terms of Section 5A and Chapter 16 of the MPRDA.	This entire report is prepared as part of the Prospecting Right Application under the MPRDA, section 16.	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for PGMs, Copper, Nickel, Cobalt, Chrome, and Gold resource. The application was accepted on the 25th of July 2022 . DMRE Ref: MP 30/5/1/1/2/(17297) PR

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

4. Suggested needs and desirability activities.

(Motivate the suggested solution's need and desirability development including the activity's necessity and usefulness in the context of the preferred location).

NEED AND DESIRABILITY OF THE PROPOSED PROJECT		
PART I: NEED		
Questions (Notice 792, NEMA, 2012)		Answers
1.	Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?	<p>Yes. prospecting is an integral part of its rationale to make use of the abundant natural resources in the area to create strong, resilient, and prosperous district.</p> <p>However, the objectives of the Thaba Chweu' s integrated development plan for 2022/2027 section: re-generate – to achieve environmental well-being Fights with:</p> <ul style="list-style-type: none"> • High carbon emissions from electricity generation. • Unsustainable natural resource usage; and

		<ul style="list-style-type: none"> Uncontrolled pollution
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	The planned activities would allow Jaments (Pty) Ltd to extend mine life (LOM) for a large number of years and thus the benefits to local communities and South Africa as a whole for e.g., work provision and social upliftment would continue for a longer period.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	<p>According to the STATSA unemployment figure has drastically increased with 8600 jobs in the municipality between 2001 and 2011.</p> <p>The Jaments (Pty) prospecting will have a positive impact on the socio-economic conditions of the local communities involved once operations commence. The prospecting will sustain the proposed areas and once the stage of mining has been reached, it will contribute to the socio-economic development of the region as a whole through social upliftment and the creation of jobs as key agents.</p>
4.	Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	Yes. All infrastructure for services and capacity is sufficient for the existing and proposed prospecting/drilling activities. The proposed project will be using water through their water licence and will not rely on municipal water services. The road networks are fully intact, and the project will not have a major impact on road congestion. Thus, additional capacity does not need to be created for the development.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of the services and opportunity cost)?	The development is not provided for in the infrastructure planning of the municipality as it is a small development of local importance. Thus, the proposed project will not have any implications for the infrastructure planning, as no services and/or infrastructure needs to be upgraded or created to cater for this project. The proposed project will be making use of mobile structures.
6.	Is the project part of a national programme to address an issue of national concern or importance?	The cited IDP indicates that the community sector contributed 37.1 % of all the sectors' contribution to the GDP of Thaba Chweu Local Municipality. Mining contributed 7.9% , Agriculture contributed 11.2 % trade/retail figure was at 13.6 % and construction contributed 2.9 %.
PART II: DESIRABILITY		
7.	Is the development the best practicable environmental option for this land/site?	Yes. Much of the region under review is undergoing transformed cultivation activities which have already had an impact on environmental management.
8.	Would the approval of this application compromise the integrity of the existing	Partially. The project is not completed in accordance with the Local Spatial Development System (SDF) and Integrated Development Plan

	approved and credible IDP and SDF as agreed to by the relevant authorities?	(IDP) goals in terms of land use but does not compromise the credibility of these respective forward planning documents. In South Africa, as in Thaba Chweu Local Municipality, unemployment is a big problem and prospecting should be able to provide continuity of existing employment in the prospecting area for a substantial period of time.
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	No, the integrity of the existing environmental management priorities for the area will not be compromised by this development.
10.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	Yes. The proposed prospecting area is located at approximately at 8.22 km South west of Two Rivers Platinum mine. The current infrastructure suffices for the process of prospecting.
12.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	In summary, due to the fact that this area has a low density of residents, which are located within the proposed area, the impacts on well-being, following mitigation, will be as follows: <ul style="list-style-type: none"> • Visual: Low • Dust: Low • Noise: low • Sense of place: low
13.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	No. The mining industry in South Africa has been a cornerstone of the economy for a long period of history. South Africa offers ongoing proof that mineral revenues can create sizeable benefits to the economy in countries where they are sourced. In South Africa PGMs, Copper, Nickel, Cobalt, Chrome, and Gold has contributed to funding impressive economic growth and stability.
14.	Will the proposed land use result in unacceptable cumulative impacts?	No. The proposed project has only been identified to have minimal cumulative impacts that can be mitigated to an acceptable level. The measures outlined in the EMPr attached will serve as a method to keep the proposed project from having any serious long term cumulative impacts on the receiving environment.

4.1. Motivation for the overall preferred site, activities, and technology.

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

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

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

- The site offers the mineral sought after,
- Very little natural vegetation needs to be disturbed in order to establish the prospecting area (0.9 ha).
- The prospecting area can be reached by using the R577 regional road that passes through the farm.
- No residual waste as a result of the prospecting activities will be produced that needs to be treated on site. The general waste produced on-site will be contained in sealed refuse bins to be transported to the local municipal landfill site.
- As maintenance and servicing of the equipment will be done at an off-site workshop the amount of hazardous waste to be produced at the site will be minimal and will mainly be as a result of accidental oil or diesel spillages.
- Contaminated soil will be removed to the depth of the spillage and contained in sealed bins until removed from site by a hazardous waste handling contractor to be disposed of at a registered hazardous waste handling site, more information will be discussed after the granting of the prospecting right.

4.2. Detailed explanation of the steps taken to arrive at the proposed preferable options.

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

Prospecting is conducted in phases, where the activities and location of drilling and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. The overall prospecting area is indicated in Figure 3. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report. Positioning of invasive prospecting planned in the sensitive areas and buffer zones should be conducted with a suitably qualified ecologist in order to avoid and/or minimize the destruction of any sensitive vegetation or habitats occurring in these areas.

Details of all alternatives considered

With reference to the site plan provided as Figure 3 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- (a) the property on which the activity will be carried out or the place where it will be carried out;
- (b) the type of action that will be carried out;
- (c) the activity's layout or design;
- (d) the activity's technology;
- (e) the operational characteristics of the activity; and (f) the option of not implementing the activity ;
- (f) the operational aspects of the activity; and
- (g) the option of not implementing the activity

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

The following alternatives were investigated as feasible alternatives:

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

The farm Rietfontein & Zwakwater are located within Thaba Chweu local municipality, The farms are located approximately 8.31 km North-west of Steelpoort and approximately 11.88 km west of Ga Mampuru.

- o The type of activity to be undertaken

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

- o The design or layout of the activity

Since exploration is temporary in nature, no permanent structures will be constructed. Negotiations and agreements will be made with the farm owners to use any existing infrastructure like access roads.

- Portable ablution facilities will be used.

- Activities will be limited to the drilling of 15 boreholes to be determined by the geological formations found during prospecting.
 - It is planned to use one rig for all drill holes.
 - Rehabilitation will be closely controlled, and supervision will be focused.
 - No changes to the layout are considered but with the geophysical survey information, the boreholes can be orientated to match the shape of the good quality of resource.
- The technology to be used in the activity

The technologies listed in the PWP have been selected as they are proven effective in the determination of resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include a literature survey, field reconnaissance/mapping, and geophysics survey of the geology, outcrops. Invasive technology alternatives have also been considered. It should be emphasized that the various stages and timeframes of prospecting contemplated herein are, by definition, contingent on the results obtained during the preceding phases of prospecting. The ideas outlined in the As a result, the Prospecting Work Program is based on the assumption that the results achieved during the previous phases may entail acceptable revisions and adaptations to such plans, which will be reported as required.

- The option of not implementing the activity

If the Prospecting Right is not granted, the potential to identify viable mineral resources could be lost. Historical prospecting and mining activities have taken place in the vicinity of the proposed prospecting right area and as such the proposed prospecting activities represent a continuation of surrounding land uses. Additionally, it allows for marginal land impacted on by historical prospecting and mining activities to be re-introduced into the economy.

5. The Public Participation Process in Detail Followed

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

A Public Participation Process is undertaken for the proposed prospecting right application. The process is undertaken to ensure compliance with regards to the requirements in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [as amended] (MPRDA), the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended], (NEMA), and Environmental Impact Assessment Regulations (2014) [as amended].

5.1. Activities undertaken for Process of Public Participation (PPP)

This section of the report provides an overview of the tasks undertaken for the PPP to date. All PPP undertaken is in accordance with the requirements of the NEMA requirements and EIA Regulations (2014) [as amended]. It further provides an outline of the next steps in the PPP and makes recommendations for tasks to be undertaken during the environmental assessment phase of the environmental authorization process.

The PPP conducted for the proposed prospecting project to date include:

- **Identifying major Interested and Affected Parties (affected and neighboring landowners) as well as other stakeholders (state organs and other parties)**

Public Participation is the involvement of all parties who are either potentially interested and / or affected by the proposed development. The principal objective of public participation is to inform and enrich decision-making. This is also its key role in this Basic Assessment process.

- **Formal notification of the application to I&APs (including all affected and adjacent landowners) and other stakeholders.**

The project was announced as follows:

- ❖ Newspaper advertisement

Publication of media advertisement (English & Sepedi) in the *Lowvelder*, page 20 of the newspaper on Thursday the 4th of August 2022. See Figure 8 for the proof of newspaper publication.

- ❖ Site notice placement

In order to inform surrounding communities, affected and adjacent landowners of the proposed development, site notices were erected on site and at visible locations close to the site on the 25th of August 2022 during site visit. Refer to Figure 9 for the site notice placed on site.

- ❖ Written notification

I&AP's and other key stakeholders were directly informed of the proposed development by e-mail from the 4th of August 2022. I&APs were given 30 days to comment and / or raise issues of concern regarding the proposed development. Refer to Appendix C for proof of email notification. Draft BAR & EMPr will be shared to all I&APs and relevant stakeholders for a 30-day review period from the Monday the 5th of September 2022 until Wednesday the 5th of October 2022 to comment and raise issues/concerns on the report.



Figure 9: Site notices placed on site.

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

SEARCH CRITERIA

Search Date	2022/07/27 09:50	Farm Number	375
Reference	-	Registration Division	KT
Report Print Date	2022/07/27 09:51	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	WinDeed Database

PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	THABANG BRICKS CC			
1	K2011110356 PTY LTD			
2	K2011110356 PTY LTD			
3	LINDE GERHARDUS STEPHANUS VAN DER			
4	AVINIER PROP PTY LTD			
5	BAKONI BA SHAGA COMMUNITY DEVELOPMENT TRUST			
6	MULLER JOHAN ANDRIES			
7	HIEMSTRA EGBERT CARL ARTHUR			
8	MASHISHING BUILDING MATERIALS PTY LTD			
9	ZEBURABA CATTLE ENTERPRISES PTY LTD			
11	K2011110356 PTY LTD			
12	BAKONI BA SHAGA COMMUNITY DEVELOPMENT TRUST			
13	BAKONI BA SHAGA COMMUNITY DEVELOPMENT TRUST			
15	ZEBURABA CATTLE ENTERPRISES PTY LTD			

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search.windeed.co.za | www.windeed.co.za

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Figure 10: Windeed search results, applied farm portions highlighted in yellow.

A request for a Land Claim Letter was e-mailed to Vusi Khoza on the 4th August 2022. No correspondence has been received.

The following have been identified as I&Aps:

Table 6: Identified key stakeholders.

Names of I&Aps	Organization	Position
Rhulani Chavalala	Department of Agriculture, Forestry and Fisheries	Assistant Resource Auditor
Vusi Khoza	Department of Rural Development and Land Reform	Official
Masala Nemukula	Department of water and sanitation	Official
Amos Ngomane	Thaba Chweu Local Municipality	Manager – Waste and Environmental
Doreen Sithole	Department of Agriculture, Land Reform and Rural Development	Official
Aulicia Maifo	Department of Environment, Forestry, and fisheries	Official
Eskom General Email: 'wayleavesmou@eskom.co.za'	ESKOM	Enquiry database
Phumla Nkosi	Mpumalanga Tourism and Parks Agency	Official
Tshilidzi Mavulwana	Transnet	Official
Oliver J	SANRAL	Official
Piet Van Nie Kerk		Landowner
FJ Frost	Rietfontein Guest Farm	Adjacent Landowner

5.2. I&AP's concerns are summarized here.

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

Table 7: Summary of issues raised.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
AFFECTED PARTIES					
Landowners/s					
Lawful occupier/s of the Land					

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
Landowners or Lawful occupiers on adjacent properties					
Municipality					
District Municipality					
Organs of state (Responsible for infrastructure that may be affected Roads					

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
Department, Eskom, Telkom, DWA					
Department of Rural Development and Land Reform (DRDLR)					
Traditional Leaders					
Community					
OTHER AFFECTED PARTIES					

6. The Environmental characteristics linked to alternatives

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

6.1. The Environmental characteristics linked to alternatives

In order to determine the baseline environment of the proposed location, baseline studies were initiated. The section to follow summarises these findings and recommendations.

Baseline Environment

Type of environment affected by the proposed activity.

(It's current geographical, physical, biological, socio- economic, and cultural character)

6.1.1. Topography

The study of the shape and properties of land surfaces is known as topography. The topography of an area could refer to the surface shapes and the features themselves, or a summary (especially their depiction in maps). Topography is a branch of geology and planetary science concerned with local detail in general, covering not only relief but also natural and man-made characteristics, as well as local history and culture. In the United States, where topographic maps with elevation contours have rendered "topography" synonymous with relief, this interpretation is less prevalent and even local history and culture. This meaning is less common in the United States, where topographic maps with elevation contours have made "topography" synonymous with relief.

The proposed prospecting area is characterized by step counter lines which indicate that the proposed area is a mountainous region. This can be observed on the topology map attached (Figure 11). The flow of water during rainy seasons flows from the area of high elevation to the area of low elevation as it is indicated or displayed by contour lines.

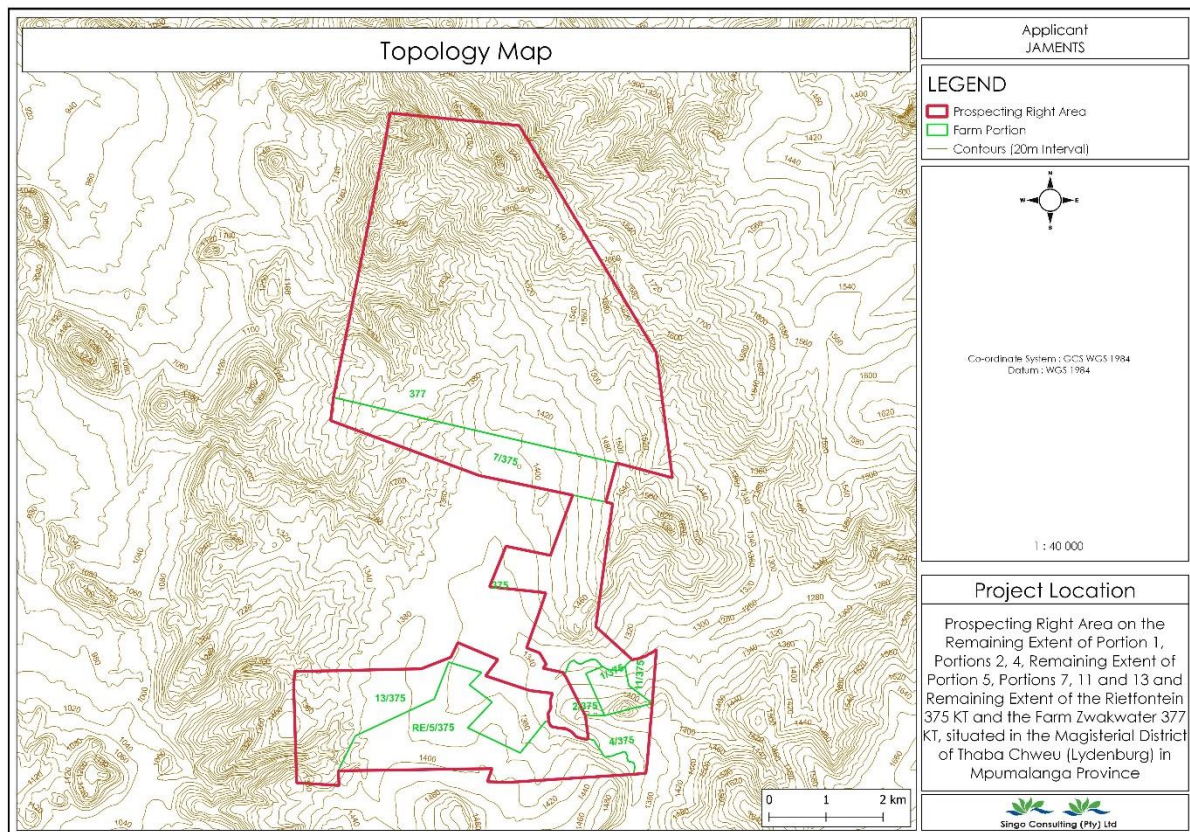


Figure 11: Topographic map of the project area.

6.1.2. Geology

Regional Geology

Bushveld Igneous Complex

The Palaeoproterozoic Bushveld Igneous Province in South Africa is comprised of:

- a suite of mafic sills which intruded the floor rocks of Transvaal Supergroup
- the bimodal but predominantly Rooiberg Group volcanic province: one of the largest pyroclastic provinces on Earth covering at least 50 000 km² and up to 3 km thick
- the Rustenburg Layered Suite, the largest and oldest mafic layered complex on Earth which covers an area of approximately 65,000 km² and comprises anorthosites, mafic and ultramafic cumulates
- the Lebowa Granite Suite

- the Rasthooop Granophyre Suite developed at the contacts between the granites and Rustenburg Layered Suite which is comprised of metamorphosed sediments and intrusive acidic rocks.
- various satellite intrusions of similar age including the Molopo Farms and Nkomati – Uitkomst

The Bushveld Igneous Complex contains important minerals such as large quantities of platinum.

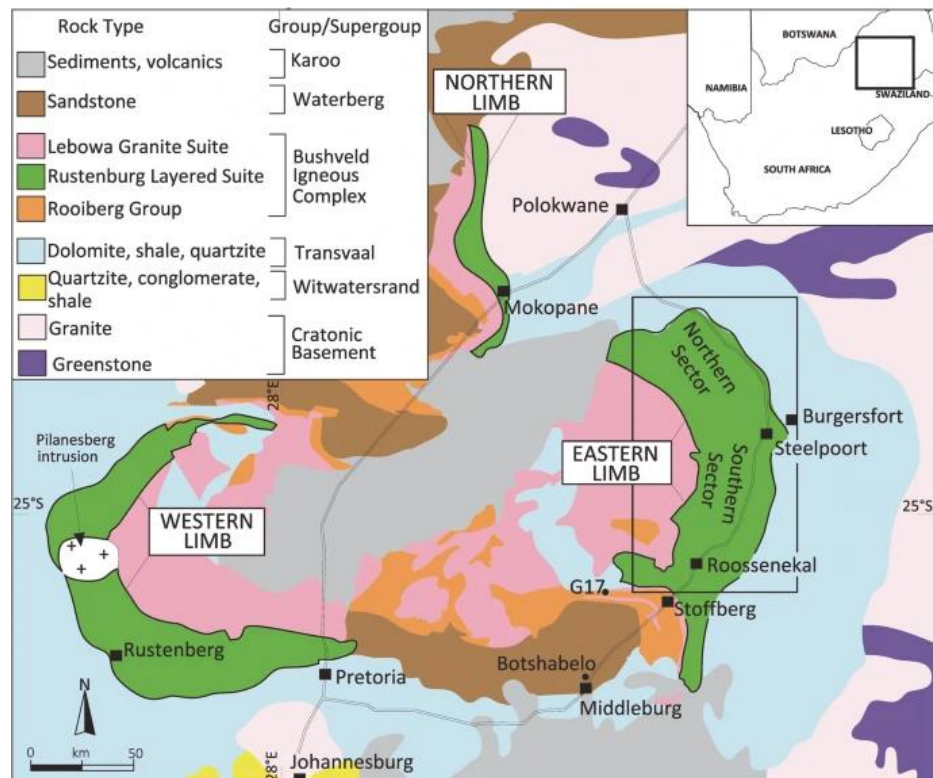


Figure 12: Simplified geological map of the Bushveld Complex, which includes the Eastern limb.

The eastern limb is situated within the Mpumalanga and Limpopo Provinces and occurs in a discrete physiographic region known as the "Middleveld."

The Middleveld is associated with an erosional embayment into the interior plateau. The embayment is dissected by superimposed drainage of the Olifants and Steelpoort Rivers which have created a mountainous terrain.

The 2,055 Ma Bushveld Complex contains the largest layered igneous complex on Earth. The Eastern Limb crops out spectacularly in a rugged landscape of linear and arcuate ridges associated with an embayment in the interior plateau of north-eastern South Africa. This embayment has been caused by the superimposed drainage of the Olifants and Steelpoort River systems which have etched out individual rock layers and units within the layered intrusion by erosion during regional uplift. The mountain ranges are remote wilderness areas, but the valleys and plateaus are densely populated. Human habitation dates to the Iron Age (1,600-1,000 AD) and includes the site of Thaba Mosega in the Tsate Valley, where King Sekhukhune united vulnerable communities into the formidable Pedi Empire. The area supports numerous mines with a modern infrastructure and is well suited to geotourism. The opportunity to examine ultramafic-mafic rocks, such as chromitite, orthopyroxenite, harzburgite, norite and anorthosite in outcrops that are almost pristine is unparalleled.

Rustenburg Layered Suite

The Rustenburg Layered Suite (RLS) was emplaced at shallow crustal levels beneath the volcanic pile of Rooiberg felsites and Rashedoop granophyres as sills in the Transvaal Supergroup. North of Burgersfort, emplacement occurred at the level of the Magelliesberg quartzite, but to the south it transgressed upwards through more than 2 km of sediments so that near Stoffberg basaltic rocks of the Dullstroom Formation (at the base of Rooiberg Group) are preserved in the floor. The crescentic outcrop pattern of the RLS is comprised of four exposed sectors, the eastern limb, the western limb, the far western limb and the northern limb, with a fifth limb, the south-eastern Bethal limb, obscured by younger sediments.

The RLS has been subdivided into a number of zones, the Marginal, Lower Zone (LZ), Critical (CZ) Main (MZ) and Upper Zones (UZ), although their exact boundaries have been the subject of much debate (e.g. Kruger 1990). Lateral facies variations within the sequence are common.

The Marginal Zone

The Marginal Zone is not always present. Where it occurs, it ranges in thickness from zero to hundreds of metres along the basal contact of the Complex. The rocks are most commonly norites with variable proportions of accessory clinopyroxene, quartz, biotite and hornblende, which reflect varying degrees of contamination from the underlying sediments. Generally, it is

related to the immediately adjacent cumulate rocks but in places it has been disrupted and has been partly digested by later magma injections (see Eales, 2003 for an overview). However, where Marginal Zone occurs beneath the Lower Zone, it may represent an early magma which in the east occurs as the Shelter norite (SACS, 1980), a succession up to 400m thick around Burgersfort. For a discussion on magma lineages see Kruger, (2004).

The Lower Zone

The Lower Zone has the most limited lateral extent and is best developed in the northern parts of both eastern and western limbs and in the southernmost part of the northern limb. The thickness of the Lower Zone has been influenced by floor topography and structure and is 1300 m at maximum (Cawthorn et al 2002). In the Oliphants River Trough, in the eastern limb (Figure 12) Cameron, 1978, subdivided the Lower Zone into 3 zones, a central harzburgite between an upper and lower pyroxenite. The lower pyroxenite is extremely uniform in composition, containing on average 98% and never less than 95% orthopyroxene with minor interstitial plagioclase and clinopyroxene. The harzburgite unit consists of cyclic units of dunite, harzburgite and pyroxenite varying in thickness from a few to tens of metres. Dunite layers are distinctive, they weather more easily than pyroxenite to a dull greasy brown, they usually contain magnesite veins, and are covered in magnesite float. Little serpentinization is apparent.

Up sequence the orthopyroxene occurs as small oikocrysts, increasing in size up to 1-2 cm. As the modal proportion of orthopyroxene increases the texture changes, with harzburgites containing sub-equant grains of both minerals. In the olivine pyroxenites the olivine appears anhedral against pyroxene. However, in view of the extreme textural recrystallisation in these rocks the inference that the olivine is post-cumulus should be viewed with caution. Scattered chromite grains are present, green clinopyroxene and plagioclase are rare. The orthopyroxene changes in habit from granular to elongate with a range of grain sizes

The Critical Zone

The Critical Zone, which is characterised by spectacular layering (Figure 13), hosts world-class chromite and platinum deposits in several different layers (termed reefs). The Critical Zone, which is up to 1500 m thick, is divided into a lower sub-zone (CLZ) which is entirely ultramafic and is characterised by a thick succession of orthopyroxenitic cumulates and an upper sub zone (CUZ) that comprises packages of chromitite, harzburgite, pyroxenite, through norite to anorthosite. Subdivision into magmatic cycles is somewhat subjective but nine cycles have been recognised in the CLZ and eight cycles in the CUZ consisting of partial or complete sequences from a base of ultramafic cumulates through norite to anorthosite.

The base of the upper Critical Zone is defined as the first appearance of cumulus plagioclase and is drawn at the base of the lowermost anorthositic layer of the RLS between two chromitite layers. Two distinctive cyclic units, the Merensky and Bastard units were included within the CZ of the original classification, however a significant break in the initial Sr isotope ratio, and a major unconformity at the base of the Merensky Unit, led Kruger (1992), to draw the boundary between the CZ and MZ at the base of the Merensky Unit, where the major magma influx occurs, rather than at the top of the Giant Mottled Anorthosite, a distinctive layer characterised by large oikocrysts of pyroxene at the top of the Bastard Unit.

The Main Zone

The Main Zone, which is >3000 m in thickness, forms almost half the thickness of the entire RLS. It comprises a succession of gabbro-norites with infrequent anorthosite and pyroxenite bands while olivine and chromite are absent. In addition to the Merensky Reef at its base it is economically important for numerous dimension stone quarries which exploit the Pyramid Gabbro-norite a dark-coloured inverted pigeonite bearing gabbro-norite. Although not as spectacularly layered as the Critical Zone discrete packages of modally layered rocks can be identified (Molyneux, 1974; Mitchell, 1990; Nex et al., 1998, 2002), possibly associated with the influx of new magma. In the eastern Bushveld a modally layered succession of gabbro-norites 10-20 m thick occurs some 60-70 m below the Pyroxenite Marker (Quadling and Cawthorn, 1994). This layered package is continuous for 80 km along strike. It has also been identified in the western Bushveld with a 20 km strike extent (Nex et al, 1998).

All the layers have sharp bases and planar tops and are composed of orthopyroxene (inverted pigeonite) + clinopyroxene + plagioclase but the proportions vary so that the lighter layers are typically 70% plagioclase, whereas the darker layers are 30-40% plagioclase. Darker layers vary from 2-10 cm in thickness. The layering is considered to be due to mechanical re-distribution of crystals since none of the layers has typical cotectic proportions. In the eastern Bushveld geochemical studies suggest that compositional reversals in orthopyroxene and plagioclase occur slightly above this layered package reflecting the influx of new magma to form the Upper Zone (Nex et al., 2002).

Upper Zone

The Upper Zone is characterized by sequences which are intensely banded with gabbros as the dominant rock type, there is no chill at the top contact with the metamorphosed felsite or granophyre, and the most differentiated rocks occur towards the top. The most striking feature of the Upper Zone is the presence of some 25 magnetite layers in the eastern limb (Molyneux, 1974) that cluster into four groups, each with up to seven layers. Magnetite layers typically have sharp bases, but gradational tops. The thickest is 6 m, while the Main Magnetite layer, near the base of the Upper Zone is 2 m thick and is mined for its vanadium content. The

titaniferous magnetite layers comprise a vast source of vanadium ore and hosts almost half of the world's vanadium reserves.

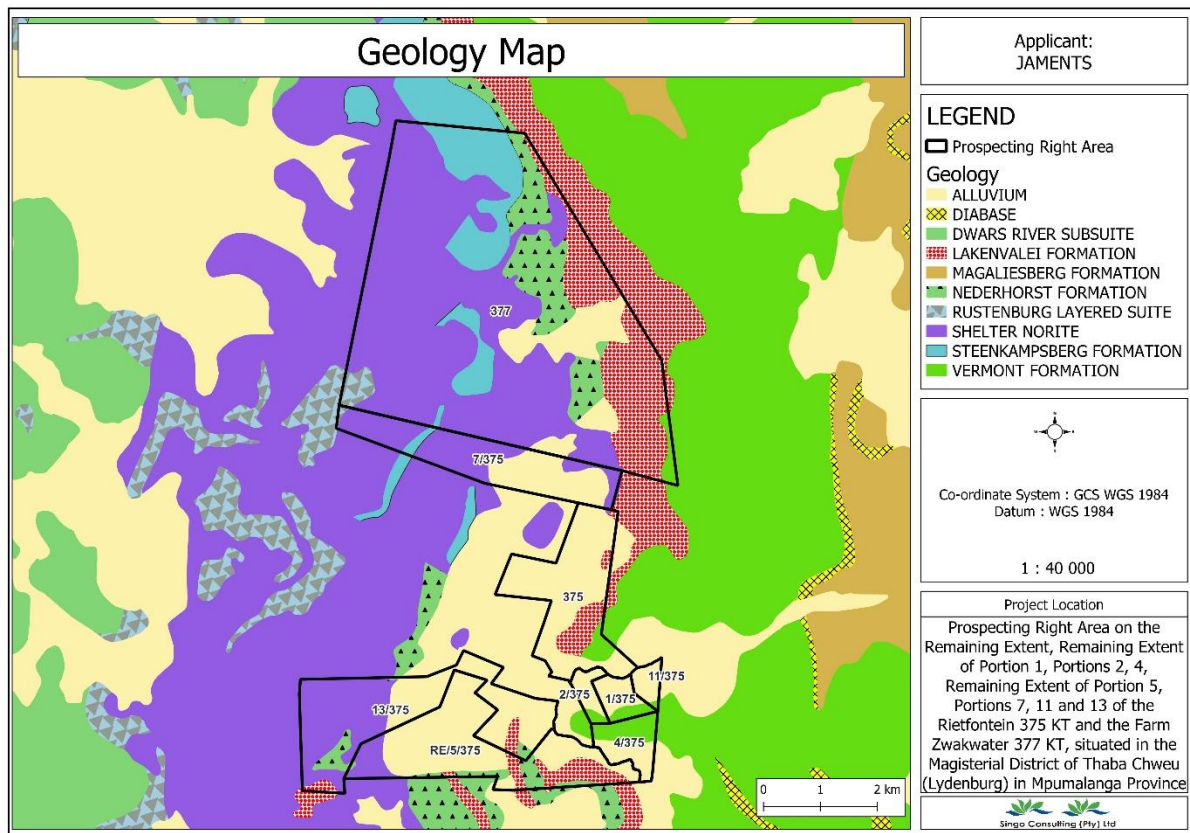


Figure 13: Geology map of the proposed area.

Climate

Climate is defined as the average weather conditions in an area over a long time – 30 years or more (Naomi, 2014). The climate is warm during the summer in Magisterial District of Lydenburg, when compared with winter, the summers have much more rainfall. This location is classified as Cwb by Köppen and Geiger. The coldest month is June and July, with zero possibilities of rainfall.

Temperature

- i. According to Köppen and Geiger, this climate is classified as Cwb. In Lydenburg, the average annual temperature is 15.2 °C. mean annual rainfall ranges between 401 – 600 mm & 601 – 800mm. Precipitation is the lowest in June, with an average of 7mm. The greatest amount of precipitation occurs in December, with an average of 163 mm.

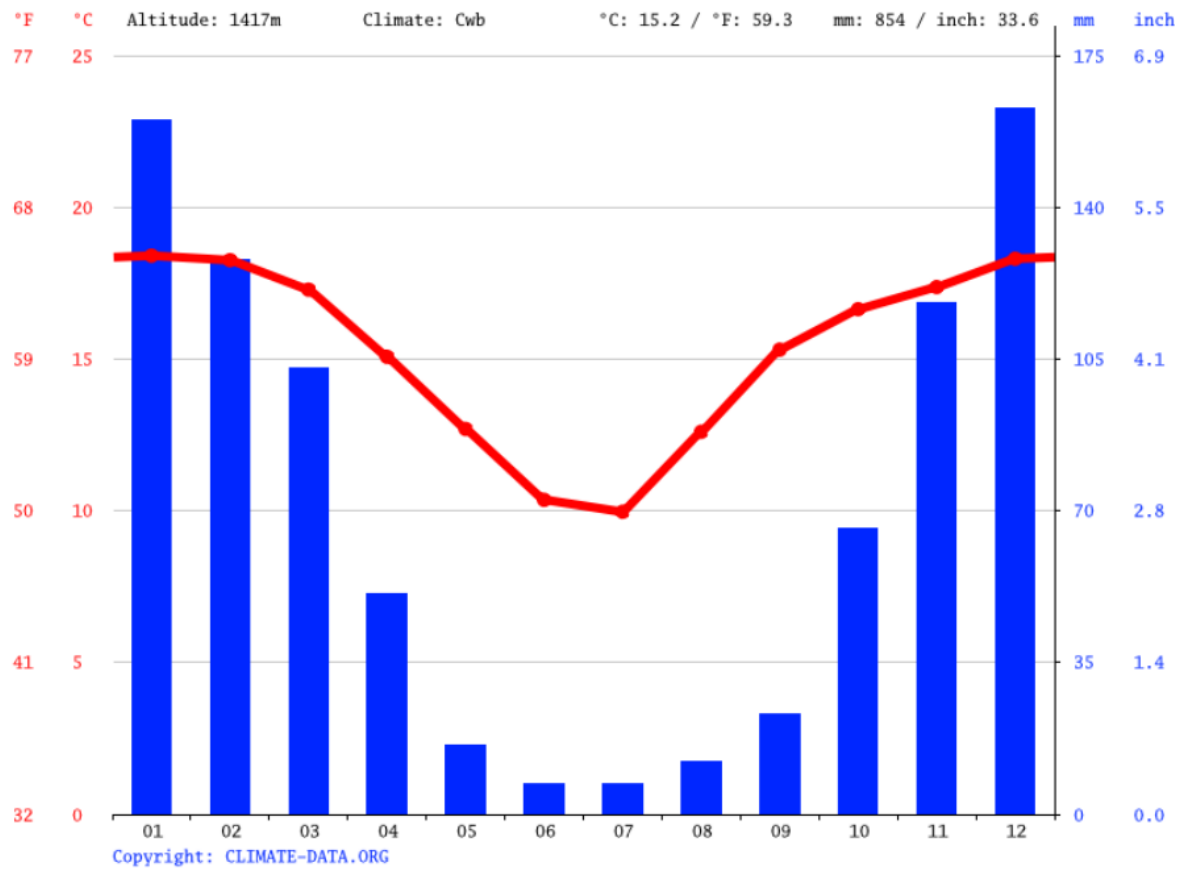


Figure 14: Monthly average temperatures of the proposed project area.

Mean annual temperature ranges between 2.1 - 8 Degree Celsius, see **Figure 15** below.

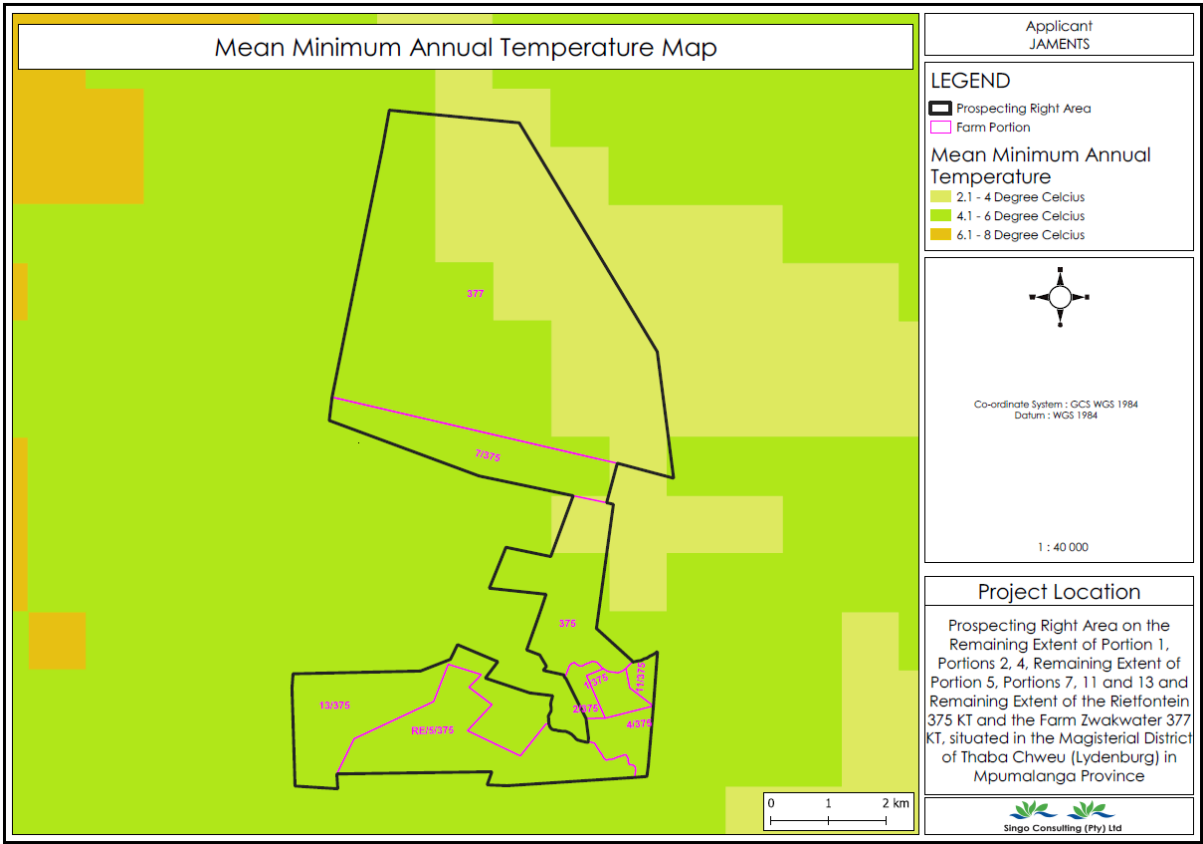


Figure 15: Mean minimum annual temperature map.

Rainfall

To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. The area experiences significant seasonal variation in monthly rainfall.

Mean annual rainfall ranges between 401– 800 Degree Celsius, refer to **Figure 16** below.

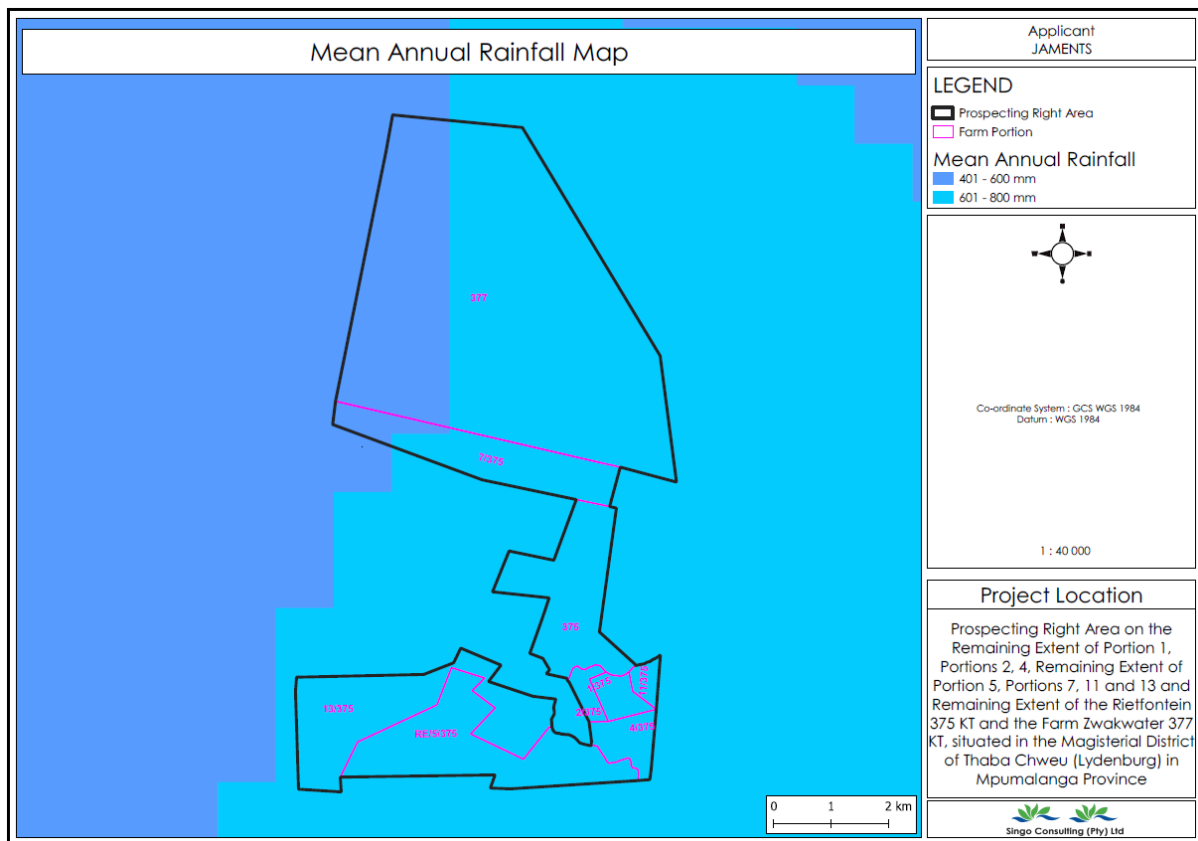


Figure 16: Mean annual rainfall map.

Wind

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages.

The average hourly wind speed within the area experiences significant seasonal variation over the course of the year. The figure below shows that the windier part of the year lasts for 3.5 months, from August 21 to December 5, with average wind speeds of more than 12.3 kilometers per hour. The windiest day of the year is October 12, with an average hourly wind speed of 14.9 kilometers per hour. The calmer time of year lasts for 8.5 months, from December 5 to August 21. The calmest day of the year is May 15, with an average hourly wind speed of 9.6 kilometers per hour.

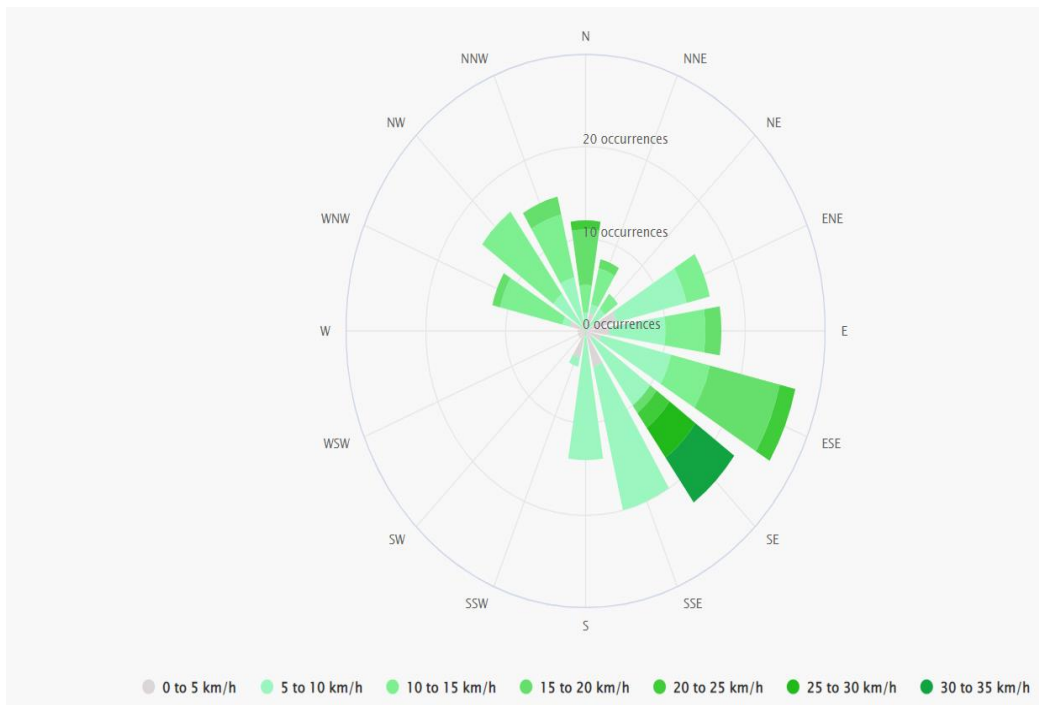


Figure 17: Windrose of the proposed project area.

6.1.3. Soil

Freely drained, structureless soils

From the baseline study conducted in house, freely drained, structures soils are defined as well as drained, dark reddish soils with a marked bright, strong blocky (nutty) structure, typically fine (red soils). There may also be one or more vertical or melanic soils. The soil category can show, soil depth constrained, normal or unnecessary.

Non soil land classes

The soil on this area is very weakly developed mineral soils in unconsolidated materials that have only an ochric surface horizon and that are not very shallow. This are soils in unconsolidated mineral material of some depth, excluding coarse textured materials and materials with fluvic properties, and have no diagnostic horizons other than an ochric horizon.

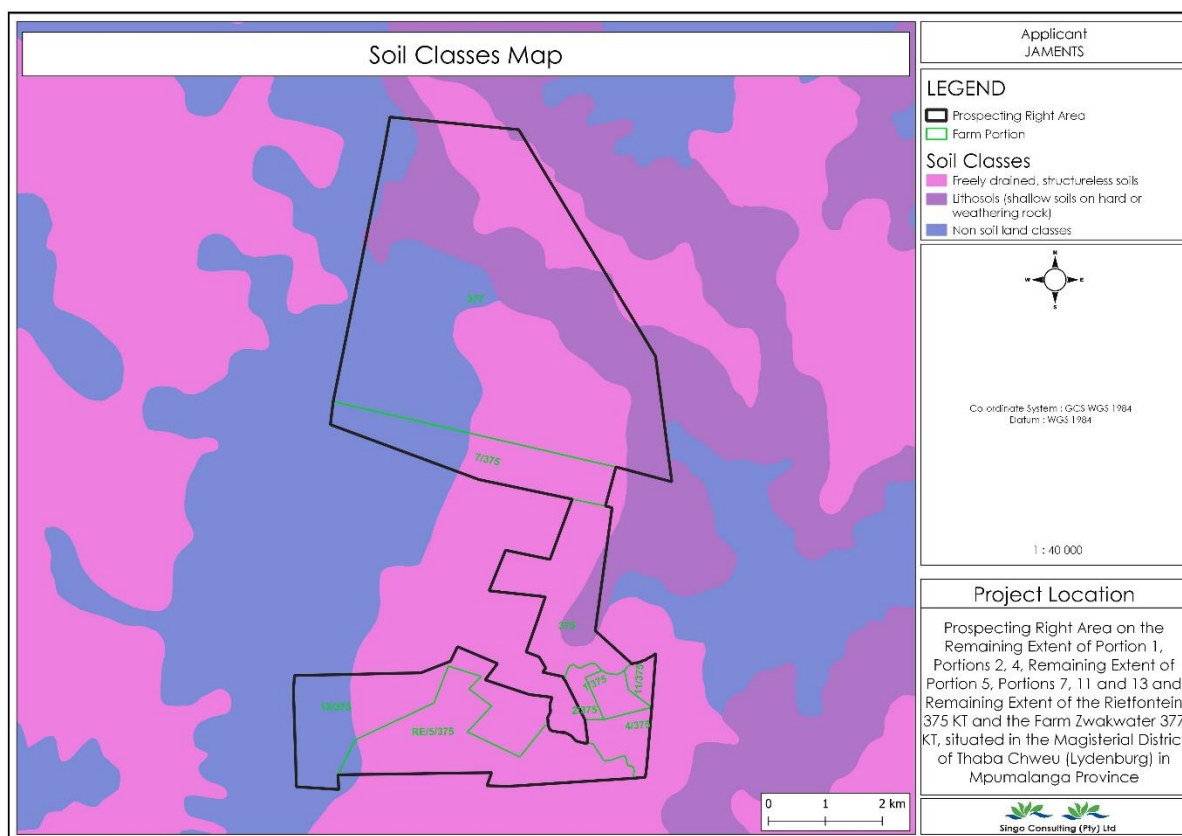


Figure 18: soil classes of the project area.



Figure 19: Soil type found on site.

6.1.4. Hydrology

Groundwater

The fractured aquifer consists of a greenish fine-grained laminated shale with interlayered carbonate layers. The pores of the geological units are generally well cemented, and the principal flow mechanism is fractured flow along secondary structures e.g. faults, bedding plane fractures etc. The intrusion of the fractured aquifer by dolerite dykes and sills has led to the formation of preferential flow paths along the contacts of these lithologies due to the formation of cooling joints. The dykes may act as permeable or semi-permeable features to impede flow across the dykes.

The flow mechanism is fracture flow as can be expected from the crystalline nature of the shale rocks. The water quality is generally characterized by high fluoride levels which limits exploitation of this aquifer in combination with the general low yields, deep (expensive) drilling and the low recharge (Grobelaar et al, 2004).

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

Cross section of fractured aquifer

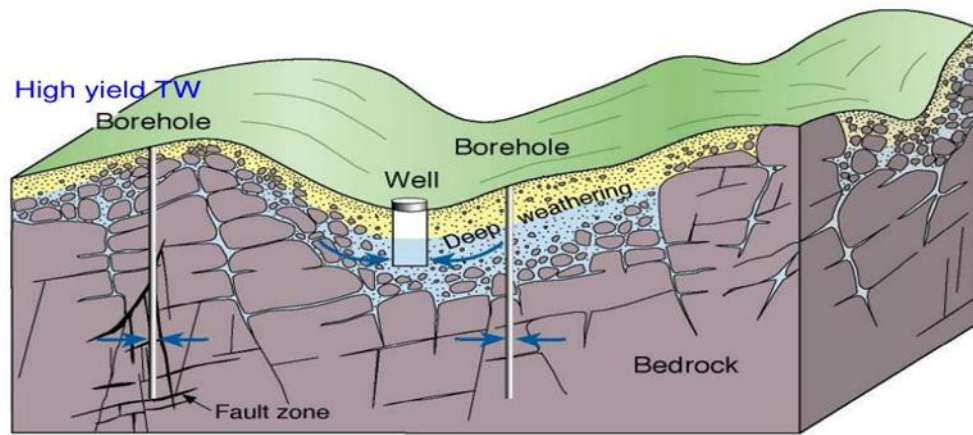


Figure 20: A cross section of the fractured aquifer.

Potential contaminants

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

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

Regarding soil erosion, the proposed boreholes will be located on gentle flat lying area, no drilling will take place in steeply terrains to avoid erosion, no vegetation will be removed or affected other than the only 0.9 ha being applied for, whereby revegetation as part of rehabilitation will take place soon after each borehole is drilled



Figure 21: Spill kit to be used.

Surface water

The prospecting area falls within the Olifants Water Management Area (WMA), within the quaternary catchment **BF2F, B42G, B41H, B42H, B42G & B41J**. **Figure 23** illustrates the Quaternary catchment and the Water Management Area (WMA).

As according to the hydrology map (**Figure 22**), the proposed prospecting area has the following water bodies:

- ❖ Perennial stream
- ❖ Non perennial stream
- ❖ Seep
- ❖ Channelled valley bottom

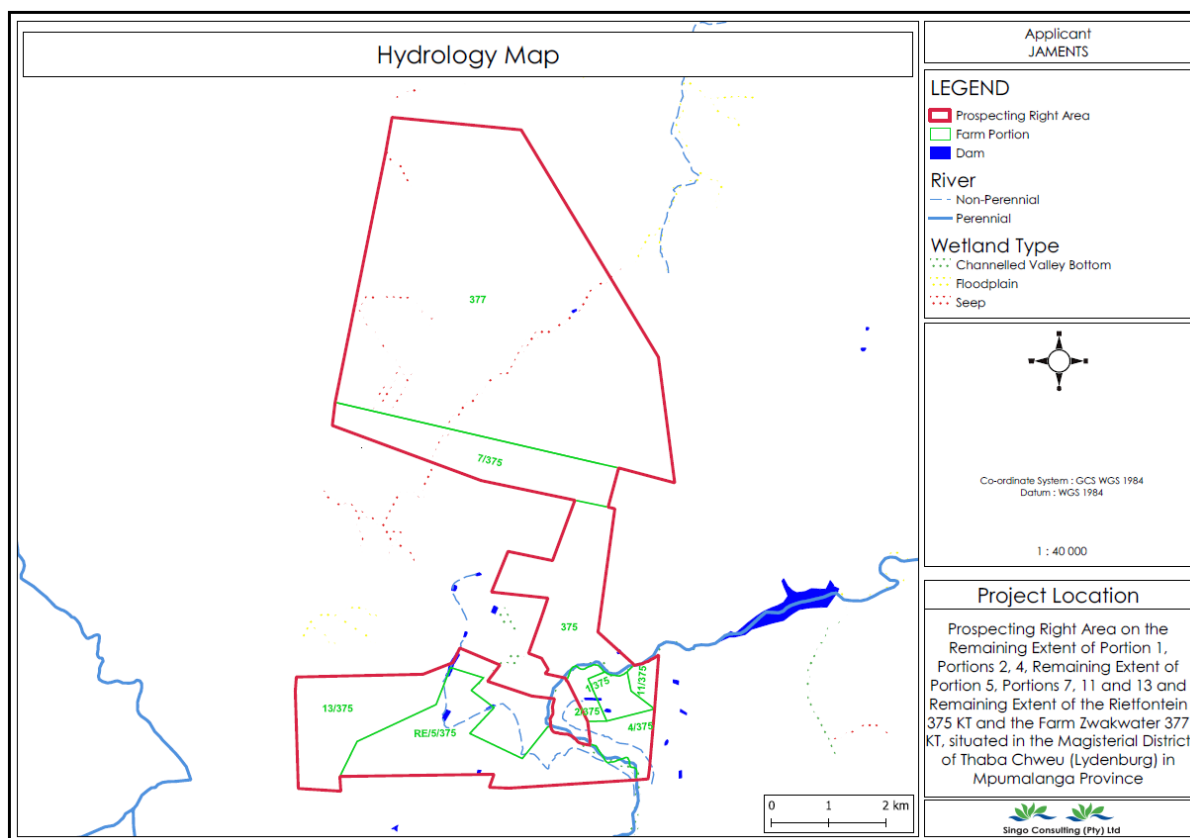


Figure 22: Hydrology Map of the proposed project area.

The existence of the perennial river was confirmed during the site assessment, refer to **Figure 25** below. Strict mitigation measures will be implemented during the prospecting of these activities to ensure optimal conservation of the water resources on site. Buffer zones of approximately 100 meters will be applied to minimize physical prospecting on any water resources within the prospecting area. The potential contaminants for the prospecting of Gold ore, Iron ore, Copper ore and PGM are minimal and can be controlled easily as this activity will only take place for a short period of time. Fuel and oil handling facilities are likely sources of hydrocarbon related contaminants. Oils, grease, and other hydrocarbon products (such as petrol and diesel) handled in these areas may contaminate the environment by spillages and leakages (e.g., from drill rigs). Absorbent Spill kits will be made available near the drill rigs during drilling activities refer to figure 20. The oil absorbent chemicals will ensure that no oils infiltrate down to the underground to cause any groundwater contamination.

Upon completion of the drilling each borehole, the only rehabilitation that will specifically be required is borehole capping and revegetation: Drill holes must be permanently capped as soon as is practicable. The exploration boreholes will be cased during drilling, boreholes that will not be required for monitoring will be properly rehabilitated by cap sealing the borehole after drilling to prevent possible crossflow and contamination between aquifers.

Water samples will be taken from selected monitoring boreholes by using approved sampling techniques and adhering to recognized sampling procedures by a qualified hydrogeologist.

It is recommended that the drilling activities take place during the dry seasons where the water percentages in the surrounding streams and wetlands are extremely low. Extreme caution should be taken during prospecting, owing to the perennial and non-perennial rivers and the wetlands, existing within the project area. No washing of any mechanical equipment's or vehicles will be allowed near the water resources.

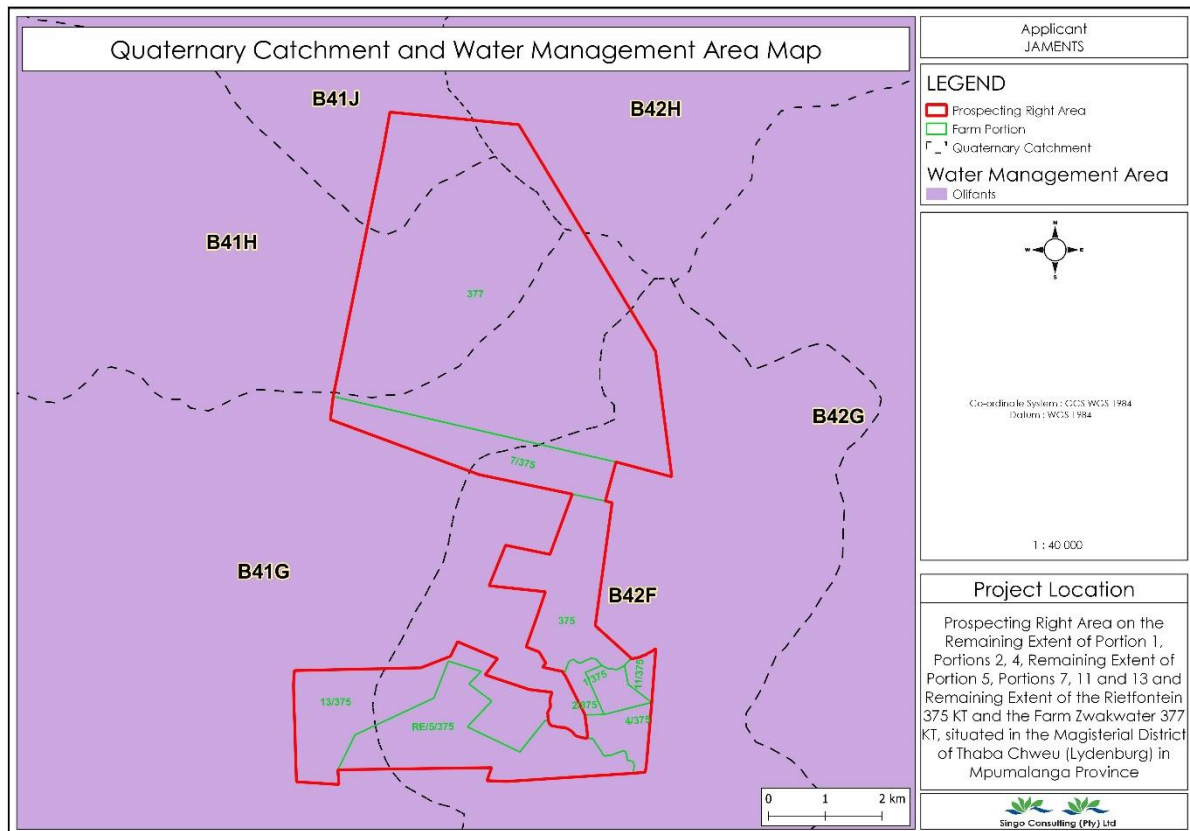


Figure 23: Quaternary Catchment and Water Management Areas of the proposed project area.

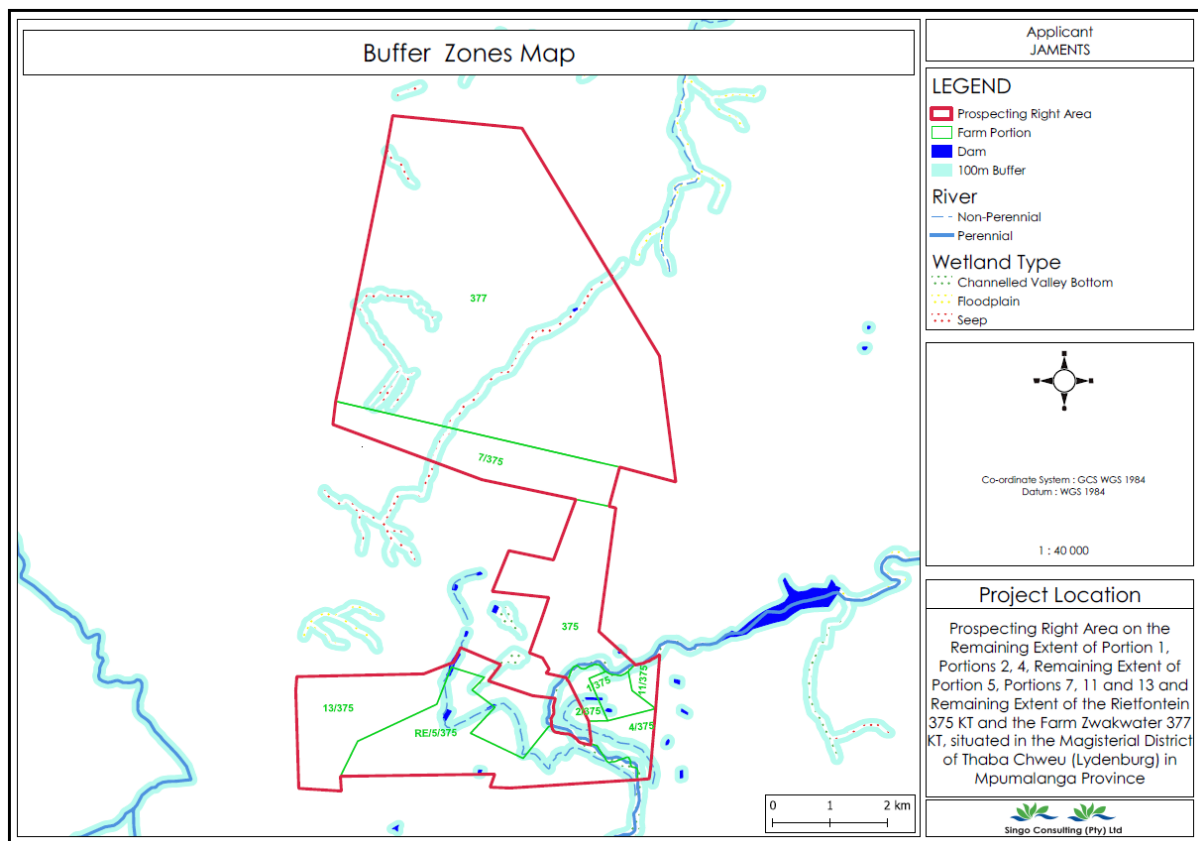


Figure 24: Buffer zone map for the project area



Figure 25: Water resources found on the proposed site.

Vegetation (Flora)

The proposed site is broadly classified as being within the Grassland Biome of South Africa (Low and Rebelo, 1996). More specifically according, the site falls with the Mixed Bushveld. Mixed Bushveld is also known as large leafed deciduous Bushveld, which consist of a mixture of deciduous, mostly thornless tree species in tall, mostly sour-grassveld, with usually no single species dominant.

Mixed Bushveld occupies a large part of the higher rainfall areas of the Lowveld, extending over the foothills to the plateau until it is either replaced by mountain sour-grassveld higher up, or by forests in sheltered places. Most of these species are endangered. In regions with an annual rainfall of 500 mm or less, and in these regions they are restricted to termitaria, such as *Schotia hrachypetala*, and riverbanks, such as *Ficus sycomorus* and *F. capensis*. S.

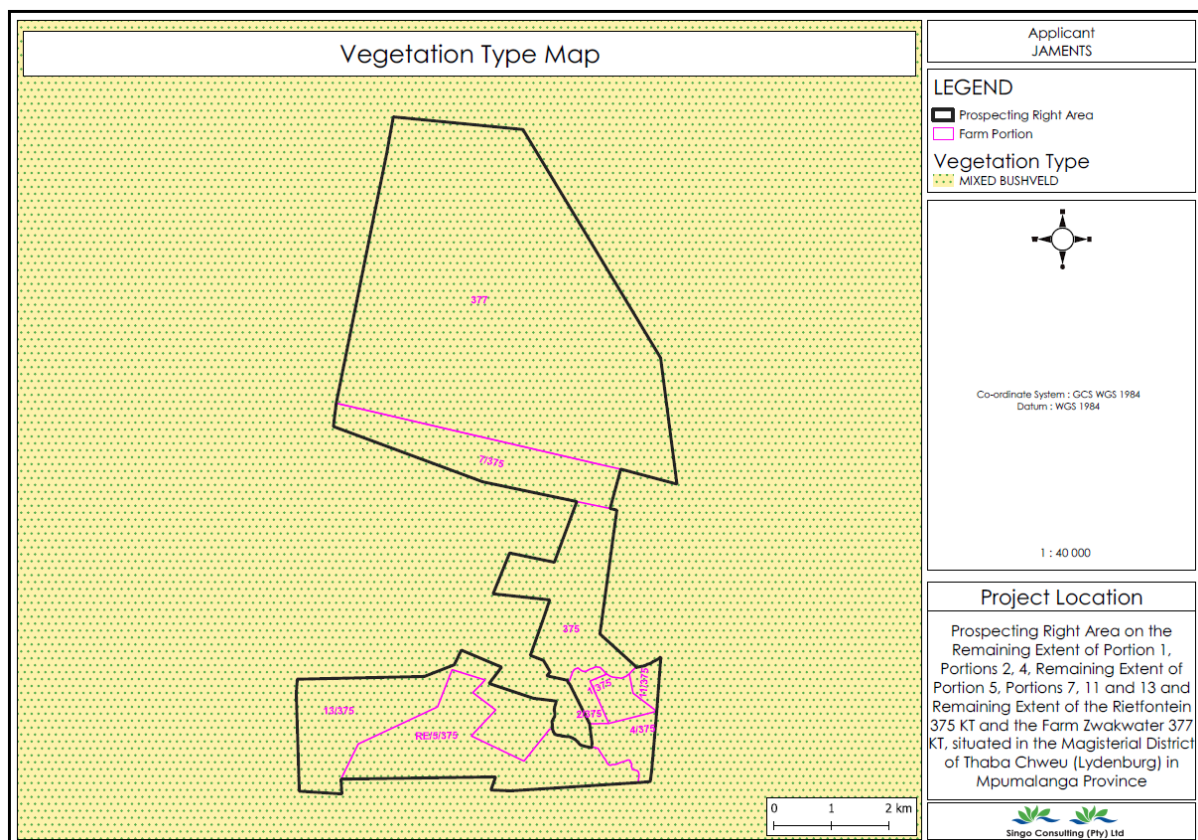
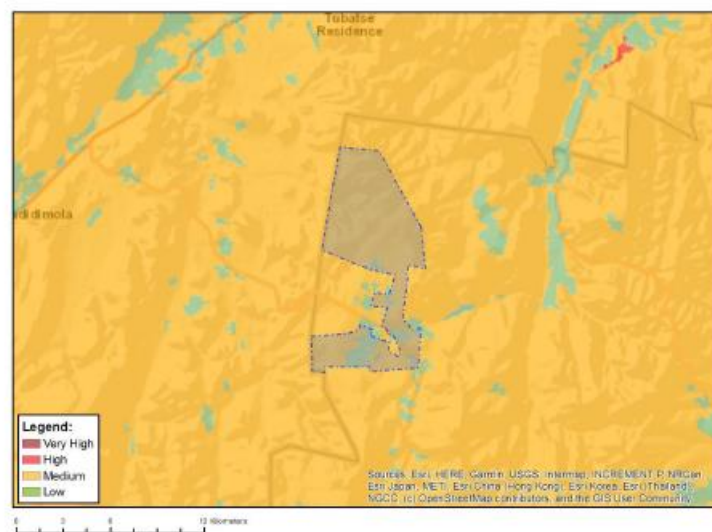


Figure 26: Vegetation type map of the proposed project.



Photo 2: Vegetation types observed on site.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Figure 27: Map of relative plant species them sensitivity.

Animal (Fauna)

Fauna is all the animal life present in a particular region or time. Fauna such as cows (refer to **photo 3** below) were observed on site during ground truthing. Fauna expected to occur on site include assemblages within terrestrial and riverine ecosystems, including mammals, birds, reptiles, amphibians and invertebrates. The following animals were deduced from the screening report.



Photo 3: Fauna observed on site.

According to the screening report, the proposed project area entail high sensitivity in terms of fauna. Fauna such Aves-Circus Ranivorus, Aves-Sagittarius serpentarius, Aves-Geronticus calvus, Mammalia-Amblysomus robustus, Mammalia-Chrysospalax villosus, Mammalia-Crocidura maquassiensis, Mammalia-Dasymys robertsii and Mammalia-Hydrictis maculicollis are present in the proposed area. See **figure 27** below.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

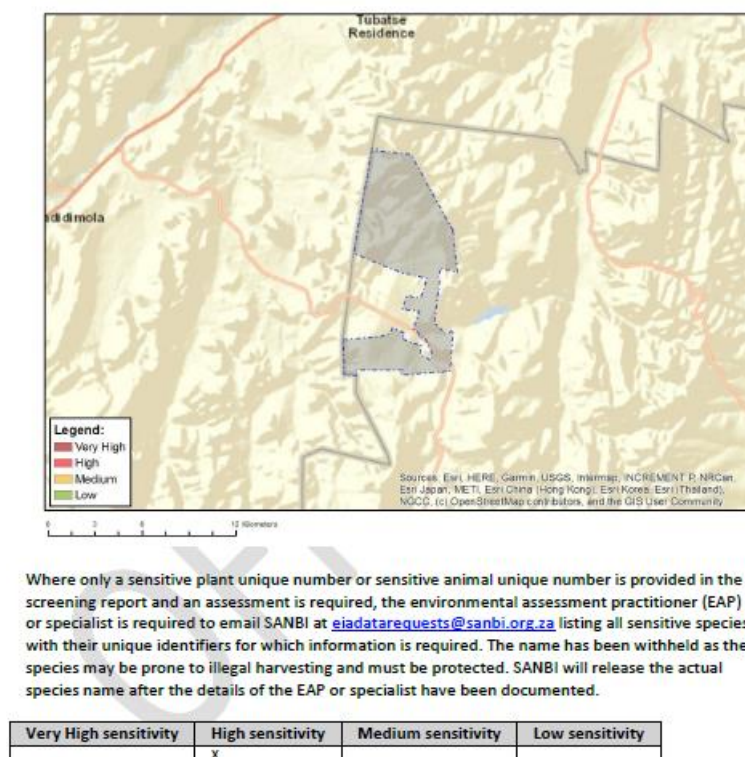


Figure 28: Map of relative animal species theme sensitivity.

6.1.5. Biodiversity

Biodiversity describes the variety of life in an area and including the number of different species, the genetic wealth within each species, the interrelationships between them and the natural areas in which they occur. Critical Biodiversity Areas are areas required to meet biodiversity targets for ecosystems, species and ecological processes, as identified in a systematic biodiversity plan. Ecological Support Areas are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of Critical Biodiversity Areas and/or in delivering ecosystem services.

The proposed prospecting site falls within a (CBA) Irreplaceable, CBA Optimal, heavily modified, moderately modified - old land & other natural land (**Figure 30**). The proposed prospecting activities will only take place on heavily modified, moderately modified and other natural land. During the desktop assessment CBA Irreplaceable and CBA Optimal (were identified with the proposed project area, (**Figure 28** above). These are areas that represent an optimized solution to meet the required biodiversity conservation targets, while avoiding areas where the risk of biodiversity loss is high.

CBA1: Irreplaceable Sites – areas that are essential for meeting biodiversity targets and where no alternative sites are available to meet the targets.

CBA2: Optimal Sites-Areas selected to meet biodiversity targets where alternative sites may be available to meet targets, but these are the optimal sites based on complementarity, connectivity and avoidance of conflict with other land uses.

National Environmental Management Act: Biodiversity Act, National Environmental Management Protected Areas Act, Proclamation, MPE Environmental Management Framework, National and Biodiversity Guideline as well as Mining on the protected core and buffer zone are considered compatible land use. The MPE Environmental Management Framework state that operations which are not considered a compatible use of land, in terms of the mentioned Framework will require a full EIA as set out in section 27 to 32 of the EIA regulation. Therefore, the transitional zone is the only zone where any Economical activities can be practiced if it does not adversely affect the Core and Buffer zone. According to the development footprint environmental sensitivity, the results for the Terrestrial biodiversity theme showed the area to have very high sensitivity, see **Figure 29** below.

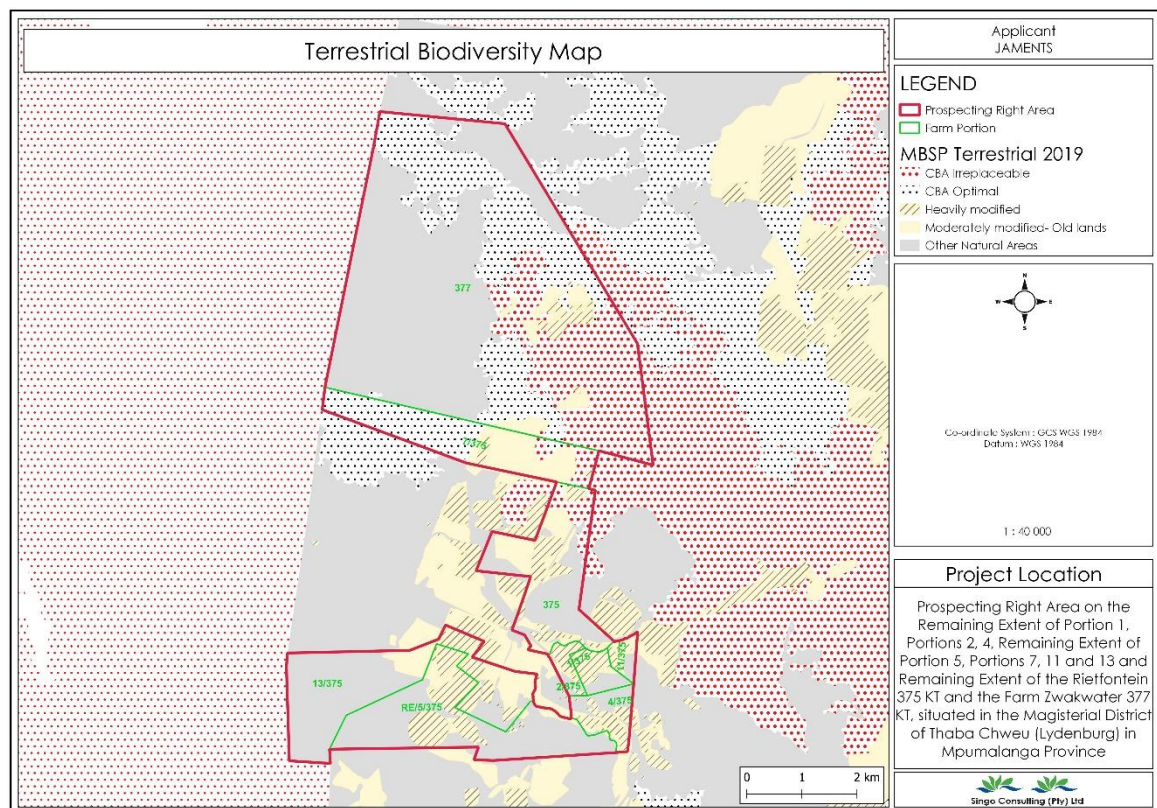


Figure 29: Terrestrial Biodiversity map of the project area.

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

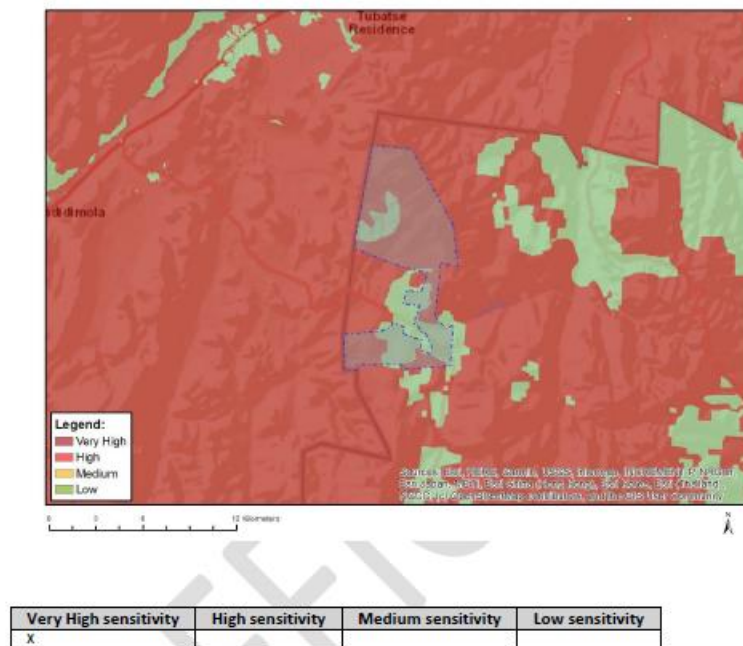


Figure 30: Map of relative terrestrial biodiversity theme sensitivity

Source: Screening report.

6.2. Paleontological Assessments

Paleontology is the scientific study of life that existed prior to, and sometimes including, the start of the Holocene Epoch (roughly 11,700 years before present). It entails the examination of fossils in order to identify species and investigate their relationships with one another and their surroundings. Paleontology is a branch of biology and geology that does not include the study of anatomically modern humans, unlike archaeology. It now employs methods from a variety of fields, including biochemistry, mathematics, and engineering.

According to the results obtained from the screening report conducted in house using the National Web based screening tool (see **Figure 31**), it can be concluded that the area has high paleontological sensitivity. Thus, during the operation of the proposed development, the developer should expect features with a medium paleontological sensitivity. Although this is so, Singo Consulting recommends that both field assessments and drilling are deemed important for purposes of having a true representation of how the paleontology of the area looks like. Wherever bedrock, coastal sediments, marine or river terraces, and potentially fossiliferous surface layers are to be affected, a Paleontological a desk study must be conducted to determine whether the development will have an impact on paleontological

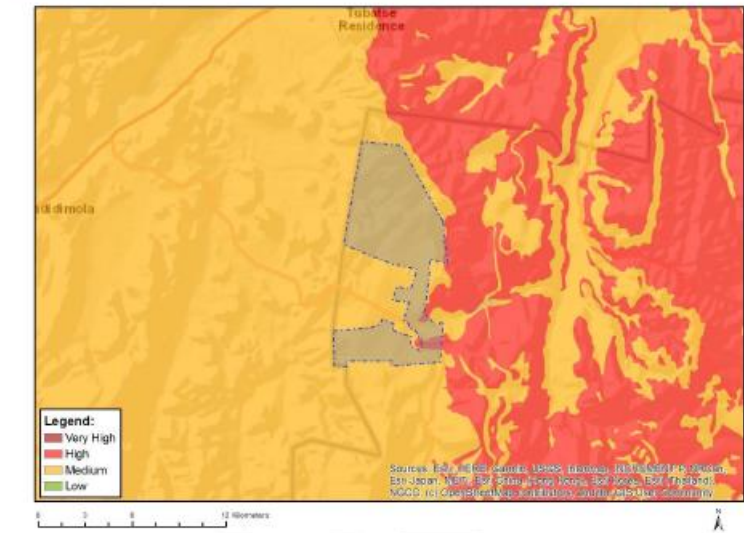


Figure 31: Map of relative paleontology theme sensitivity source: Screening report

Cultural and heritage

Heritage resources such as Stone Age sites, rock paintings and engravings; stone tools; small, inconspicuous stone walled sites from the Late Iron Age farming communities; formal and informal graveyards, etc may occur in the study area.

Heritage sites are likely to include graveyards and historical buildings (**Figure 32**), hence as denoted in **Figure 33** below the proposed project area has as low archeological & heritage theme sensitivity. Since heritage sites, such as graves, are not always clearly identifiable as it might consist of stone cairns, care must be exercised when prospecting.

Old abandoned buildings were discovered in the proposed area during site assessment. However, should any other heritage resources of significance be exposed during the construction or rather operational phase of the project, the South African Heritage Resources Agency (SAHRA) should be notified immediately, all development activities should be stopped, and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified to determine appropriate

mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the required mitigation measures.



Figure 32: Old abandoned buildings observed on site.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

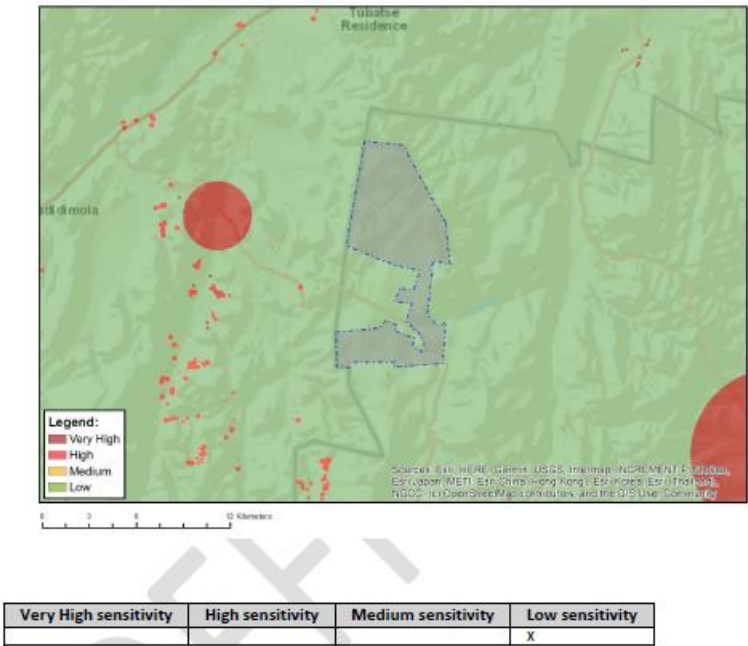


Figure 33: Map of relative archeological and Heritage theme sensitivity.

6.3. Land Capability

The land capability of the study area and the surrounding area is arable land and wilderness (Figure 34 below). The area is arable due to favorable soils and topographical properties.

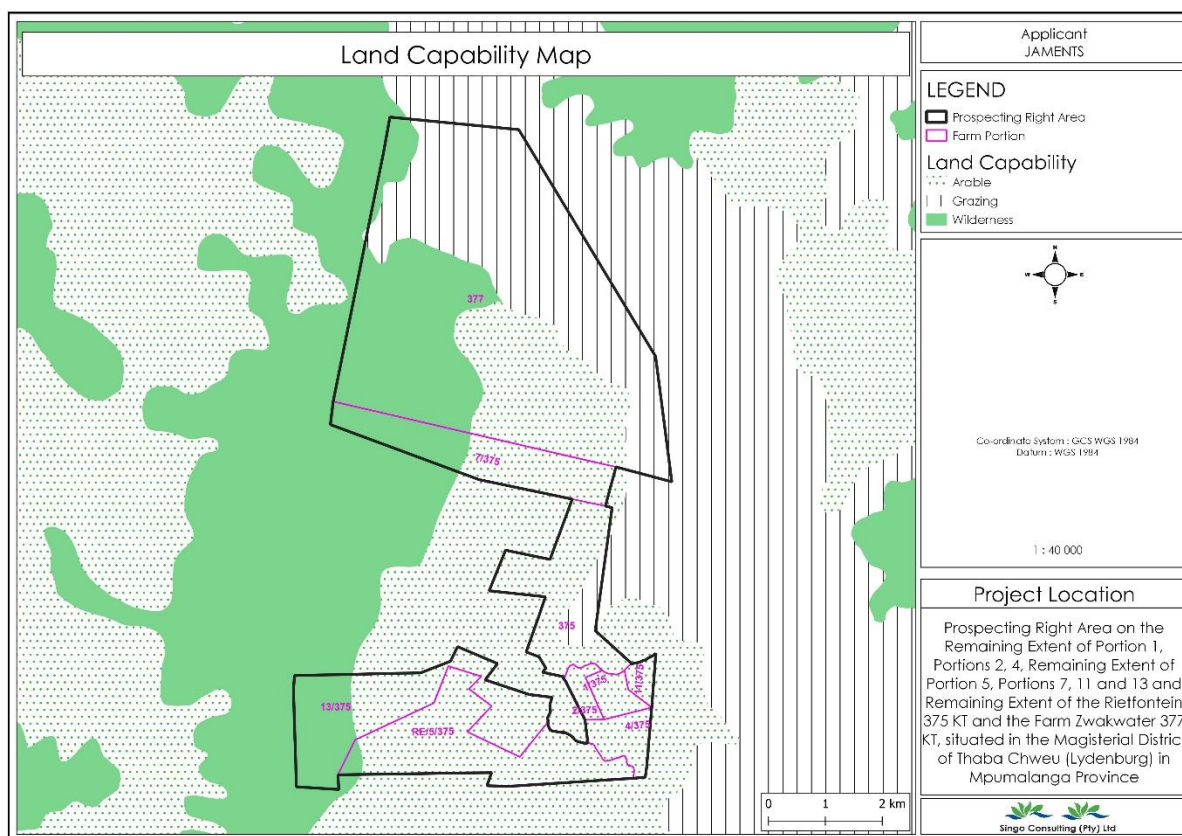


Figure 34: Land capability map for the project area.

6.4. Noise and Dust Sources

Noise sources and baseline

Prospecting and related activities frequently produce high levels of noise, which can become a nuisance or a health hazard if not adequately controlled. This has the potential to damage not just the prospecting area, but also the nearby land users and occupiers. The landowners and occupiers of the research region, as well as nearby populations, including land users, have been identified as the most sensitive receptors for the project area. The local area is primarily used for agricultural purposes.

The main noise generation activities of the proposed activities during all phases are:

- ❖ Transportation of materials;
- ❖ Drilling; and
- ❖ Loading and off-loading of equipment and materials.
- ❖ Limited amount of vehicles moving around the site; and

Noise generation can be expected on the proposed site due to various activities and actions as indicated above. Noise levels may possibly exceed allowed limits for noise as indicated in SANS 10103: 2008. There are multiple sensitive receptors in the area that will be affected by the noise associated with prospecting activities, this includes but not limited to the homesteads on and immediately adjacent to the study area as well as the threatened Southern bald ibis which may be affected by the noise in the area and will be driven away.

Due to the proximity of the homesteads to prospecting activities, mitigation measures are required to be implemented to reduce this impact. Mitigation measures may include keeping noisy activities to normal working hours and not over weekends or public holidays and maintaining machinery and vehicles to avoid unnecessary excessive noise emanating. It is also recommended that consultations be held with affected parties in order to establish an acceptable schedule of noisy activities. Animals that are found within the proposed farm area will also be affected by the noise generated by drilling activities. Mitigation measures will be developed and implemented to protect the animals from the noisy prospecting activities.

Dust Sources and baseline

The following sensitive receptors of dust have been identified and it is expected that these receptors may be affected by dust fallout and other air pollutants, resulting from the proposed prospecting activities:

- ❖ Landowners and lawful occupiers of the study area;
- ❖ Landowners and lawful occupiers of the properties adjacent to the study area;
- ❖ Surrounding communities including land users, residential areas
- ❖ Faunal and floral species within the farm area

The main source of air pollution in the local area is the dust emanating from the agricultural activities within the farm. Dust fallout will be measured prior to the drilling activities and monitored throughout the period of the drilling activities within the proposed farm area. It is not expected that the air quality outside of the study area will deviate from its current condition during prospecting. Normal vehicular activity, as is already present, will most likely continue. There is, however, a risk that dust levels may increase as a result of the proposed activity and therefore mitigation measures will be recommended. Limiting the speed of vehicles on the gravel roads to 30km/h will have a threefold benefit in terms of health and safety: it will reduce dust fallout, reduce exhaust emissions and ensure the safety of workers.

Aesthetic Quality

It is important to bear in mind that determining a visual resource in absolute terms is not achievable. Evaluating a landscape's visual quality is both complex and challenging, as many

quality standards apply and it is largely subjective, with individuals basing evaluations on experiences, their social level and their cultural background. Furthermore, natural features are inherently variable. Climate, season, atmospheric conditions, region and sub-region all affect the attributes that comprise the landscape.

Visual Absorption Capacity (VAC) can be described as the ability of an area to absorb physical modifications. Factors affecting VAC include *inter alia*, vegetation, the built environment, existing infrastructure and topography. In terms of these factors, the receiving environment is perceived to have a low to medium VAC.

The prospecting activities will not modify the physical characteristics of the landscape significantly and can easily be rehabilitated upon completion.

7. Socio-Economic Environment

The proposed prospecting area falls within the Thaba Chweu Local Municipality as confirmed by the map developed by Singo Consulting's GIS technician According to Thaba Chweu Local municipality's 2021/2022 IDP, it has been observed that a large number of employment opportunities come from the mining sector followed by community services and then agriculture. Trade also contributes a better percentage in employment. Manufacturing, trade and private household share almost the same percentage in terms employment whereas finance, utilities and transport contribute the least in absorbing labor. above presents a summary of employment by sector within TCLM.

Population Distribution

The population of Thaba Chweu Local Municipality in terms of groupings categorised Black Africans are in the Majority as illustrated on the Figure below. In 2011 the population in Thaba Chweu Local Municipality was recorded at 98387 by Statssa and was recorded at 101 895 in the 2016 Community Survey. The population grew by 3503 between 2011 and 2016 with an annual economic growth rate of 0.8% see **figure 32** below.

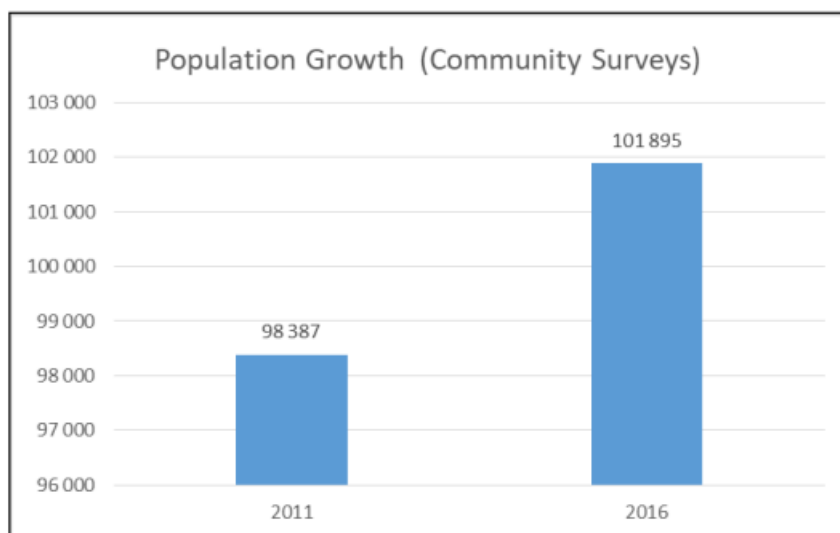


Figure 35: Population size (2011 -2016), StatsSA 2016.

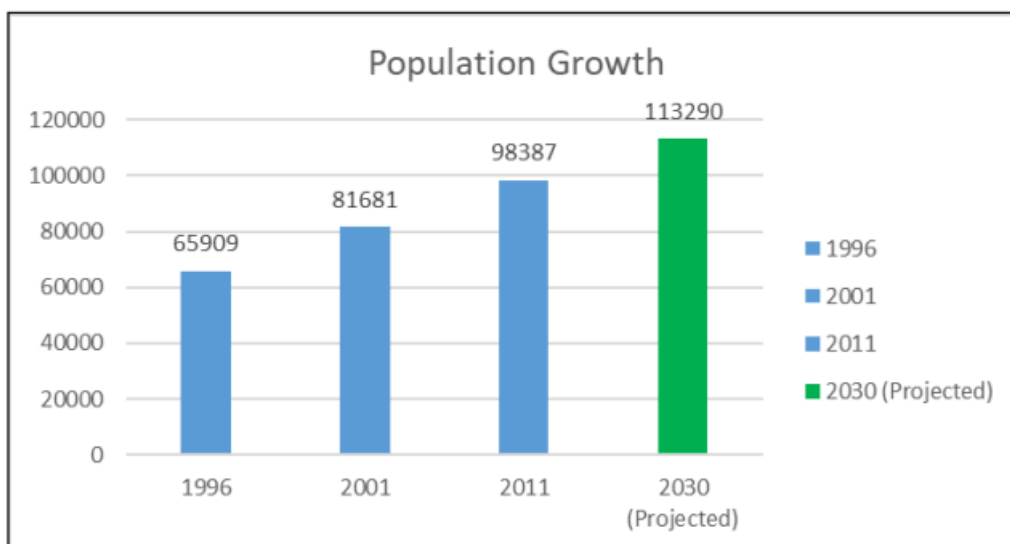


Figure 36: Population size (1996 -2016), source StatsSA 2016.

Race/Ethnic Group.

Black people are dominant from 1996, 2011 & 2016 followed by white people. This means that the municipal planning in terms of socioeconomic related up-liftment programmes and projects must target groups or speak or respond to the race with the highest percentage. The municipal plans have taken note of this information and are responding (through prioritisation of programmes and projects) to these figures through its relevant sector plans. Although there is still a huge backlog for most black households for basic infrastructure provision. The IDP development approach has identified all areas with black/black people dominance for basic service delivery back-log intervention and to address some of the socio-economic challenges facing this race although the impact will be realized over a medium to long term period.

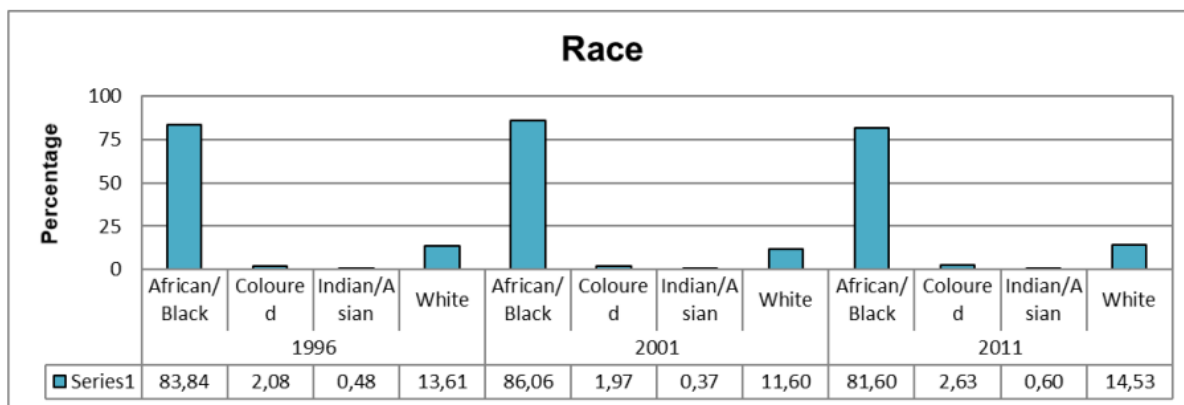


Figure 37: Ethnic group, Source: Stats SA 1996, 2001 and 2011.

Employment

Employment or persons employed refers to those who performed work for pay, profit or family gain for at least one hour in the seven days. Whilst unemployment occurs when a person is willing and able to work but is unable to find employment.

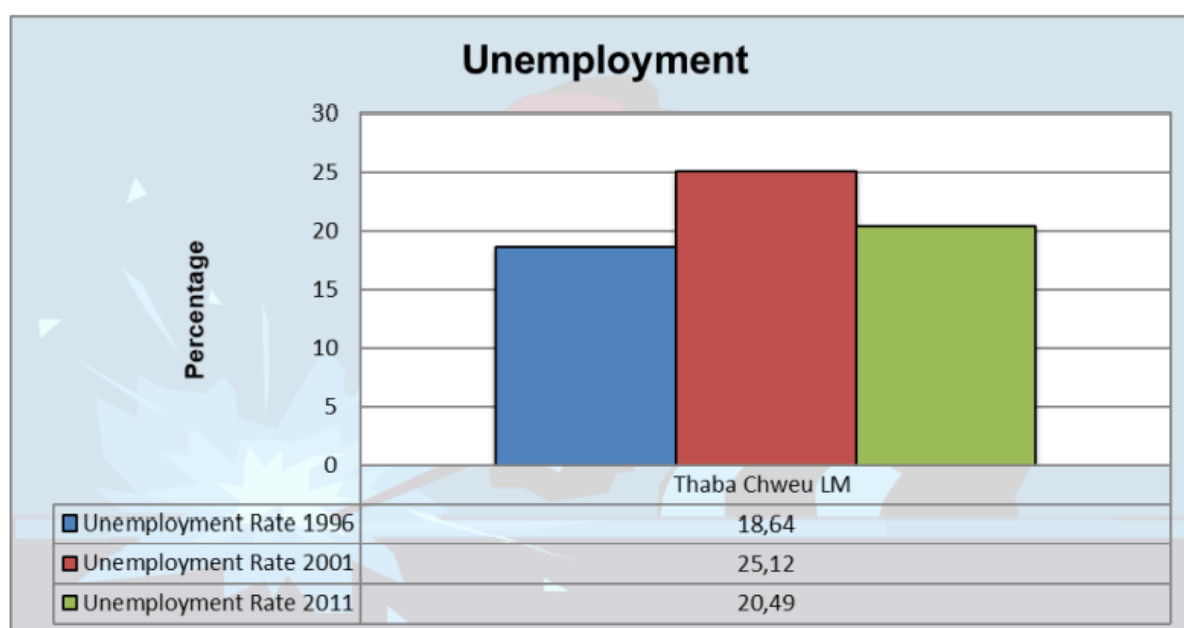


Figure 38: Unemployment rate of the proposed project area.

The graph above depicts the trend of unemployment in general in the years 1996, 2001 and 2011. TCLM was sitting at 18,64 percent in 1996 whereas in 2001 it was at its highest at a percentage of 25,12 and 20,49 percent in the year 2011. An analysis proves a decrease in unemployment rate i.e there was an increase of 6,48 percent from 1996 to 2001 and between 2001 and 2011 the graph shows that there has been a constant decrease of 4,63 percent. In

2011 TCLM sat at an overall percentage of 20,49 which is not that bad compared to the figure in 2001. In addition to this information the socio-economic profile of the municipality conducted by the Department of the Economic Development and Tourism they indicated that the unemployment rate decreased slightly from 20.3% in 2014 to 19.9% in 2017. In general unemployment remains high in TCLM and in order to combat this, the LED strategy must be implemented, supported and strengthened. The general unemployment of TCLM population comprises of classified persons i.e People with disabilities, Women and Youth.

Persons with disabilities contributes a percentage of 20,12 percentage in the classified category of disabled persons in the year 2001 which has risen by 1,28 percent from 1996. Women unemployment contribute 28,04 percent which is a decrease compared to the figure in 1996 (See figure 11) whereas youth unemployment was rife in 2001 and decreased in 2011. TCLM sat at 26,56 percent in the year 2011 Note the percentages are in terms of the total population of each classified person's category and not in terms of the total population of TCLM.

Employment by industry

It has been observed that a large number of employment opportunities come from the agricultural sector followed by retail services and then manufacturing sector. Social, Government and business services also contribute a better percentage in employment whereas mining, transport and construction share the least in terms employment within the local economy.

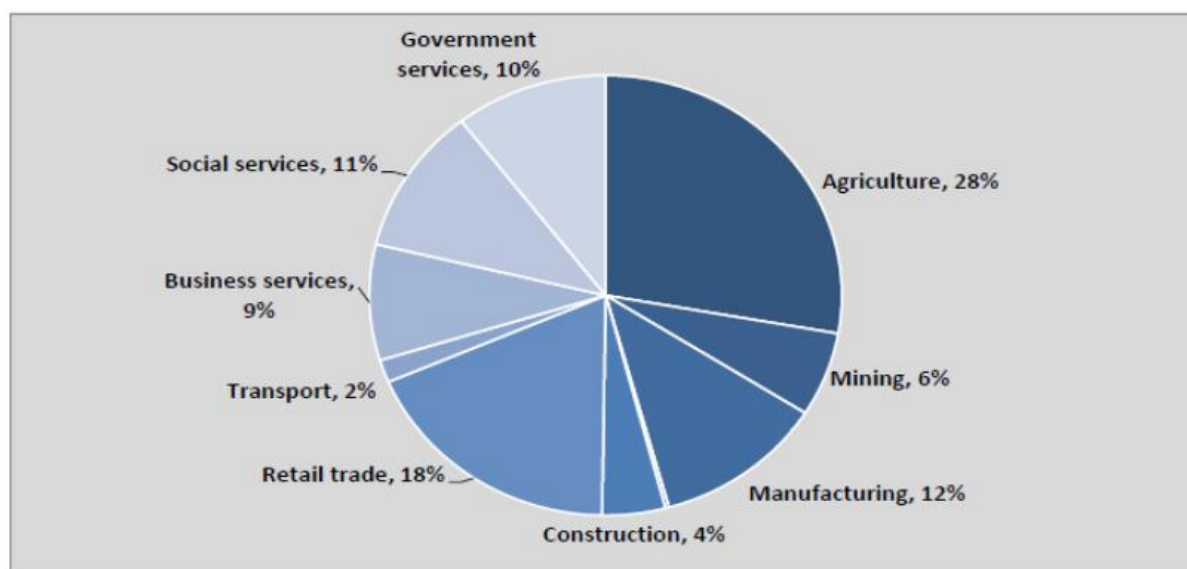


Figure 39: Employment by industry chart, Source: 2018: Revised Draft LED Strategy.

Level of Education

The **Figure 40** below gives a presentation of the level of education of the community of Thaba Chweu Local Municipality and it clearly gives an indication that about 29% of the population within the municipality have attended secondary School, followed by a percentage of 26% for people who attended Primary school with the lowest being of people who have qualifications post matric. It is clear that those who attended secondary school didn't go through to matric as the percentages of the two don't correspond. It is therefore clear that overall the population of Thaba Chweu attended school up to secondary.

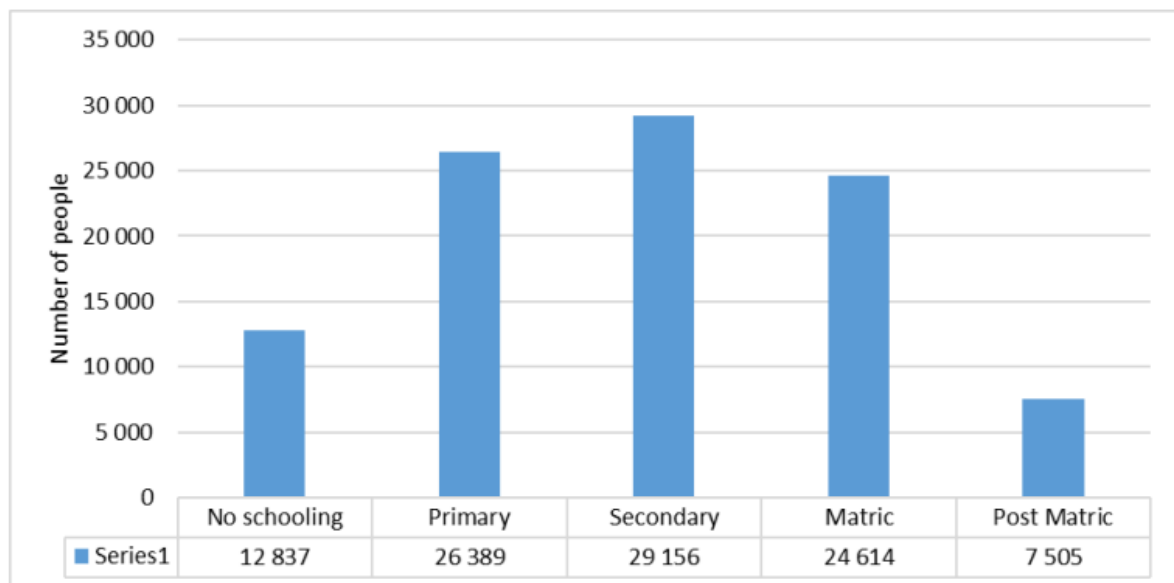


Figure 40: Thaba Chweu Local Municipality education level.

8. Land Uses

8.1. Parties to be potentially affected by the prospecting activities:

The landowners and occupiers are likely to be affected by the proposed prospecting activities. 100m buffers will be developed to prevent any drilling activities to occur in proximity of the residents and their houses.

8.2. Current land usage are described in detail.

The majority of the study area is used for farming purposes. Residents have been observed within the farm area as well as the following .

- Wetland
- Cultivation
- Built up

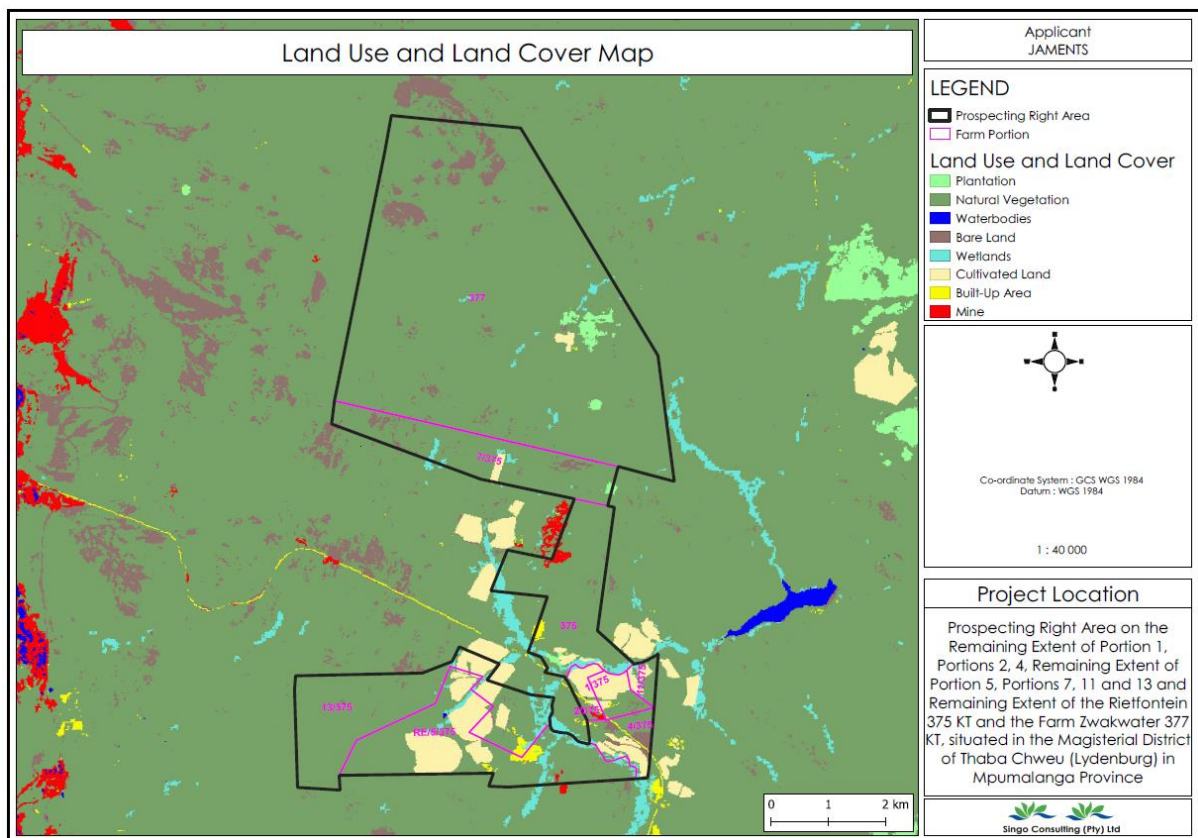


Figure 41: Land use and Land cover map of the proposed project area.



Figure 42: Land use features observed on site.

8.3. Description of specific environmental features and infrastructure on the site **Environmental Features found on site include-**

- ❖ Houses (Formal and informal settlement).
- ❖ Communication Tower.
- ❖ Tar road (Access Road).

❖ Powerlines.

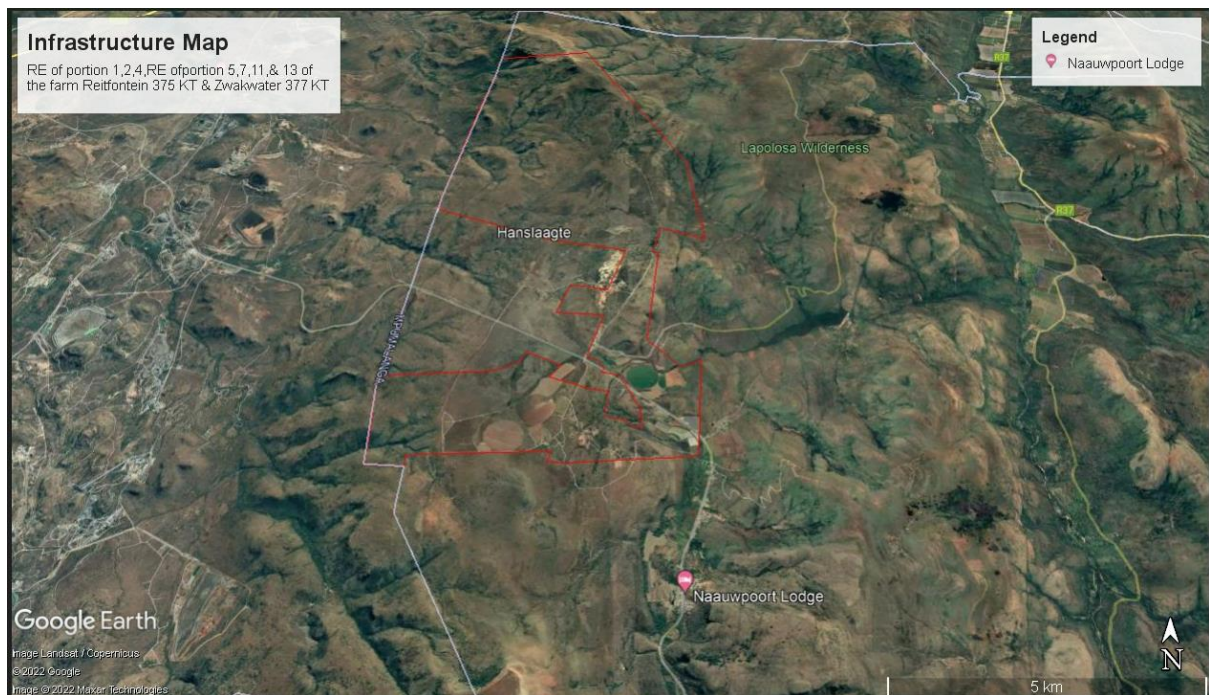


Figure 43: Infrastructure Map of the proposed project area.

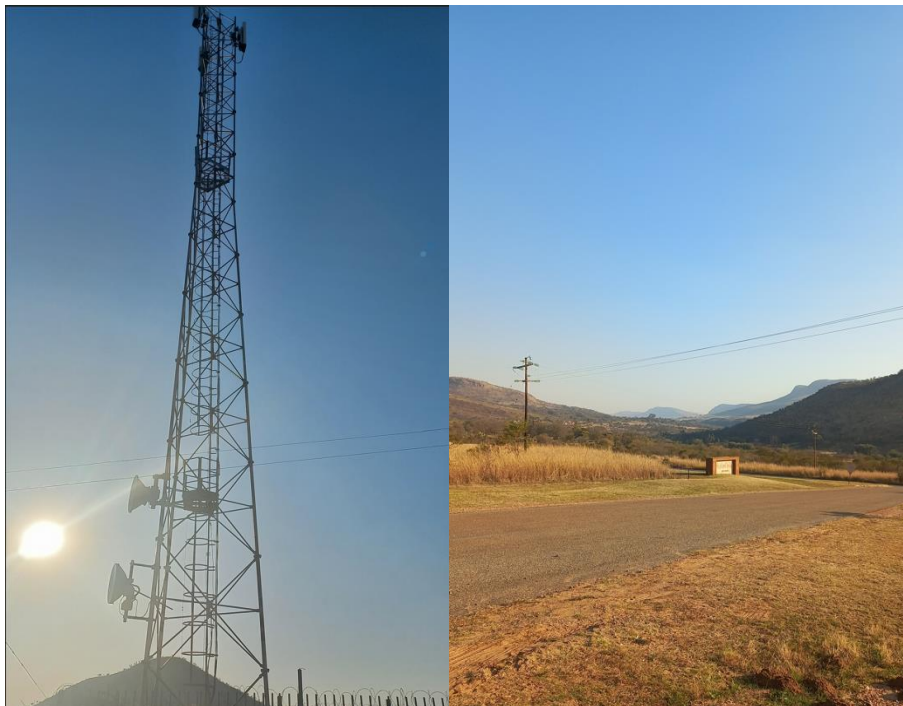




Figure 44: Infrastructure found on site

9. The nature, significance, consequence, size, length, and probability of the consequences, as well as the degree to which these impacts are likely, were identified.

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

The following potential impacts were identified of each main activity in each phase. The significance rating was determined using the methodology as explained under vi) Methodology Used in Determining and Ranking the Significance. The impact rating listed below was determined for each impact prior to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

Table 8: Impact Significance Calculation – Construction, Operational and Rehabilitation Phase.

10. Methodology used to assess and rate the kind, magnitude, consequences, scope, duration, and likelihood of prospective environmental impacts and risks

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

The requirements of the NEMA 2014 EIA Regulations guide the impact assessment process (as amended). The Environmental Risk (ER) is calculated by comparing the Consequence (C) of each effect (which includes Nature, Extent, Duration, Magnitude, and Reversibility) to the Probability/Likelihood (P) of the impact occurring. The Environmental Risk is determined by this. Other criteria, including as cumulative impacts, public concern, and the risk of irreversible resource loss, are also considered when determining a Prioritization Factor (PF), which is then applied to the ER to establish the overall Significance (S).

10.1 Determination of Environmental Risk.

The significance (S) of an impact is determined by applying a Prioritization Factor (PF) to the Environmental Risk (ER).

The Environmental Risk is dependent on the Consequence (C) of the particular impact and the Probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M) and Reversibility (R) applicable to the specific impact.

For the purpose of this methodology the Consequence of the impact is represented by:

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)

Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease) or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease)
Reversibility	1	Impact is reversible without any time and cost
	2	Impact is reversible without incurring significant time and cost
	3	Impact is reversible only by incurring significant time and cost
	4	Impact is reversible only by incurring prohibitively high time and cost

Each individual aspect in the determination of the Consequence is represented by a rating scale as defined in **Table 9** below.

Table 9: Criteria for determination of impact Consequence.

Aspect	Score	Definition
	5	Irreversible Impact

Once the C has been determined the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/scored as per **Table 10** below.

Table 10: Probability scoring.

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

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows (**table 13**):

$$ER = C \times P$$

Table 11: Determination of Environmental Risk.

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
Probability						

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in **Table 12**.

Table 12: Significance classes.

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

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

management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/ mitigated.

10.2 Impact Prioritization

In accordance with Appendix 3(1)(j) of the NEMA 2014 EIA Regulations (as amended) (GNR 326 of 2017), and in addition to the assessment criteria presented in the Section above, each potentially significant impact must be evaluated in terms of cumulative impacts and the degree to which the impact may cause irreplaceable resource loss.

Furthermore, public opinion and attitude about a potential development, as well as its potential consequences, must be considered during the decision-making process.

An impact Prioritization Factor (PF) will be assigned to each impact ER in order to ensure that these considerations are considered (post-mitigation). This element is used to direct the attention of the decision-making authority on the higher priority/significant issues and impacts, rather than to distract from the risk assessments. The PF will be applied to the ER score assuming that all recommended management/mitigation measures are executed.

Table 13: Criteria for the determination of prioritization.

Public response (PR)	Low (1)	Issue not raised in public response.
	Medium (2)	Issue has received a meaningful and justifiable public response.
	High (3)	Issue has received an intense meaningful and justifiable public response.
Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.

	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criterion. The impact priority is therefore determined as follows:

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

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (**Table 14: Determination of prioritization factor.**Table 14).

Table 14: Determination of prioritization factor.

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

In order to determine the final impact significance the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is to be able to increase the post mitigation environmental risk rating by a full ranking class, if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential, significant public response, and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance (**Table 15**).

Table 15: Environmental significance rating.

Environmental Significance Rating	
Value	Description
≤ 1	Very low (impact is negligible. No mitigation required)

>1≤2	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>2≤3	Moderate negative (i.e. where the impact could influence the decision to develop in the area).
>3≤4	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
>4≤5	Very high negative (impact is of highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential fatal flaw)
0	No impact
>1≤2	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>2≤3	Moderate positive (i.e. where the impact could influence the decision to develop in the area).
>3≤4	
>4≤5	High positive (i.e. where the impact must have an influence on the decision process to develop in the area)

10.3 Assessment and Evaluation of Potential Project Impacts and Mitigation Measures.

The following potential impacts were identified during the Basic Assessment. Mitigation measures have also been provided for each environmental aspect assessed.

The draft BAR+EMPR was made available to I&APs for review and comment and their comments and concerns have been addressed in this final report that is submitted to the DMRE for decision-making. The results of the public consultation were utilized to update the impact scores upon completion of the public review period. Furthermore, it is noted that the results of the public consultation were utilized to update the proposed potential mitigation measures

10.4 Topography and Landform.

Topography refers to the surface shape and features of an area. Opencast operations will remove surface material to access and mine an orebody and this can alter the natural topography of the site. Resultant changes to the topography can in turn impact on groundwater, surface water drainage, visual character and the safety of both people and animals if not properly mitigated. If mining extraction techniques are not carried out correctly, lack of support from underlying layers could cause the surface soil profile to vertically subside to a greater or lesser degree. This could result in limitations to the viability of potential post mining land uses.

Impacts on the topography and landform within the application area are expected to occur as follows:

- Alteration of topography.
- Altered drainage patterns.
- Soil surface subsidence.

10.5 Significance of Impacts

The above impacts on topography and landform will be negative but site specific. With mitigation, the impact can be controlled but not prevented and will remain low to moderate in significance.

The following mitigation types are associated with potential impacts on topography and landform:

- ❖ Control through site planning and design.
- ❖ Control through proper soil management procedures.
- ❖ Avoidance through mine design and planning (depth of mining, safety factors, overburden, and rock qualities).

10.6 Impact on Geology

Geology refers to the underlying mineral structure of an area. Alterations to the natural geology could have impacts on other aspects such as groundwater and topography. Mining operations will remove the entire ore body layer which will alter the geology of the site. Resultant changes to the geology can in turn impact on groundwater, soil forms, and paleontological resources. Prospecting will have a permanent impact on the geology of the application area.

10.7 Significance of Impact

The impact on the local geology is permanent as an entire orebody and stratigraphic unit will be removed during the mining operations. There are no mitigation measures to reduce the impact on geology as the removal of a geological unit is the goal of the activity. The impact will remain high.

The following mitigation types are associated with potential impacts on the geology:

- ❖ Control through site planning and design.
- ❖ Control through proper soil management procedures.
- ❖ Avoidance through mine design and planning (depth of mining, safety factors, overburden and rock qualities).

10.8 Impacts on Soil.

Prospecting right activities will minimal impacts to soil resources through physical loss of soil and/or the contamination of soils, thereby impacting on the soils ability to sustain natural vegetation and altering land capability. The contamination of soils may contribute to the contamination of surface and groundwater resources. Increased soil erosion can be caused by a loss in vegetative cover resulting in increased water runoff. This is especially likely to occur on sloping terrain. Impacts on soil structure can result in changes to soil drainage, increasing runoff and erosion, and may also result in further potential knock on effects impacting on surface and underground water resources. Loss of the topsoil resource reduces chances of successful rehabilitation and restoration.

Impacts on soil resources are expected to occur as follows:

- ❖ Erosion and sedimentation.
- ❖ Soil compaction.
- ❖ Soil pollution/contamination.

10.9 Significance of Impacts

The above impacts on soil resources will be negative but site specific. With mitigation, the impact can be controlled but not prevented and will remain low to moderate in significance.

The following mitigation types have been associated with potential impacts on soil:

Avoid and control through preventative measures (soil placement, storm water infrastructure, erosion control structures).

- ❖ Avoid through implementation of EMPr mitigation measures
- ❖ Remedy through application of treatment measures (e.g. ripping).
- ❖ Avoid through preventative measures (e.g. bunding, spill kits).
- ❖ Remedy through clean-up and waste disposal.
- ❖ Modify through soil treatment if required.

10.10 Impacts on Land Capability.

Land capability is closely linked to the soil. Prospecting activities have the potential to significantly transform the land capability, often irreparably. The types of impacts related to land capability involve post mining compaction, loss of fertility, impeded soil drainage and insufficient depth of the replaced soil. In many cases, mining may result in the land capability class changing from arable to grazing post closure. The loss of potentially productive agricultural land, along with a reduction in land capability may occur as a result of site sterilisation due to mining activities. Some impacts such as acidification and loss of original soil depth and volume can be permanent and will reduce the capability post closure.

Impacts on land capability are expected to occur as follows:

- ❖ Loss of soil fertility (denitrification, loss of soil nutrient store and organic carbon stores) and loss of land capability.
- ❖ Loss of soil resource and its utilization potential.

10.11 Significance of Impacts

The above impacts on land capability will be negative but site specific. They are long term impacts and are expected to last for the duration of the life of the mine and in some cases the disturbance will be permanent. With mitigation, the impact can be controlled but not prevented and some impacts will be permanent.

The following mitigation types are associated with potential impacts on land capability:

- ❖ Avoid through preventative measures (e.g. limit area of disturbance).
- ❖ Remedy through soil remediation if required (e.g. fertilizer and organic matter applications)

10.12 Impacts on Land Use.

The predominant land use in the surrounding area is Shrubland. Mining activities have the potential to affect land uses within the application area and in the surrounding areas. This can be caused by physical transformation of land through direct or indirect impacts. Impacts may be related to factors such as loss of soil, loss of biodiversity, pollution of water, dewatering, air pollution, noise pollution, and damage/destruction from blasting. The nature of opencast mining is such that it is unlikely that mining and other land uses can coexist. This means that any area utilized for opencast mining will be unavailable for other land uses.

Impacts on land use are expected to occur as follows:

- ❖ Damage/Disruption of services (such as water and power supply, etc.).
- ❖ Interference with existing land uses.

10.13 Significance of Impacts

The above impacts on land use will be negative but site specific. With mitigation, the impact can be controlled but not prevented and will remain low in significance.

The following mitigation types have been associated with potential impacts on land use:

- ❖ Avoid through implementation of EMPr mitigation measures (e.g. service detection and communication with landowners).
- ❖ Remedy through repair or reinstatement of services if required.

Protection of fauna and flora

The risk on the fauna and flora of the footprint area, as well as the surrounding environment, as a result of the proposed prospecting activities, can be reduced to low by implementing the following mitigation measures:

- The site manager must ensure that no fauna is caught, killed, harmed, sold or played with.
- Workers must be instructed to report any animals that may be trapped in the working area.
- No snares may be set or nests raided for eggs or young.
- No plants or trees may be removed without the approval of the Environmental

Control Officer (ECO).

11. Statement motivating the alternative development location within the overall site.

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

The open cast mining of the aforementioned minerals has been identified as the most cost-effective method to produce the desired minerals. It is proposed that all mining-related infrastructure will be contained within the boundaries of the proposed prospecting area. As no permanent infrastructure will be established on site, the layout/position of the temporary infrastructure will be determined by the space on the proposed prospecting area.

12. Through the course of the activity, a detailed explanation of the process used to identify, assess, and rate the impacts and hazards that the activity will have on the chosen site (in relation to the final site layout plan).

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

During the impact assessment process, several potential impacts were identified of each main activity in each phase. An initial significance rating was determined for each potential impact, should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process continued to identify mitigation measures to address the impact that the proposed mining activity may have on the surrounding environment. A significance rating was again determined for each impact using a relevant methodology. The impact ratings listed in the following section was determined for each impact after bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

13. Summary of baseline reports.

This summary must be completed if any baseline reports informed the impact assessment and final site layout process and must be in the following tabular form.

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

14. Environmental impact statement

14.1 Summary of the environmental impact assessment's principal outcomes;

A summary of the environmental impact assessment's principal outcomes is outlined below.

Most of the prospecting activities are non-invasive and will have very low to negligible environmental or social impact. The invasive activities that entail the drilling of approximately 15 exploration holes will have a minimal environmental and social impact as each drill site will be confined to an area of 0.9 ha. This must be viewed in the context of the entire prospecting license area under application, which covers just 4696.860 ha **Table 16**Error! Reference source not found.summarizes the assessed impact ratings after mitigation measure implementation.

Table 16: Summary of identified impacts.

Potential impacts (Positive: +ve; Negative: -ve)	Impact significance pre-mitigation	Impact significance post-mitigation
Site establishment activities		
Cultural and Heritage (-ve)	Very Low	Negligible
Noise (-ve)	Low	Very Low
Visual (-ve)	Low	Very Low
Traffic (-ve)	Very Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and vegetation (-ve)	Medium	Low
Animal life (-ve)	Medium	Low
Social (-ve)	Low	Very Low
Job creation (+ve)	Very Low	Very Low
Exploration drilling		
Noise (-ve)	Very Low	Very Low
Visual (-ve)	Very Low	Very Low
Traffic (-ve)	Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and Vegetation (-ve)	Low	Very Low
Animal life (-ve)	Low	Very Low
Social (-ve)	Low	Low
Job creation (+ve)	Low	Low

All identified impacts will occur for a limited time and the extent of the impacts will be localised. All identified impacts can be suitably mitigated with the residual impact ratings being of low significance. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist.

15. 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)

16. Summary of the planned activities positive and negative consequences identified alternatives

The positive implication of the Prospecting Right is the discovery of an economically viable mineral resource. Although non-invasive techniques will be utilized as part of the proposed prospecting activities. The implementation of the proposed mitigation measure will ensure that the negative implications and risks of the project are minimal.

The Potential positive impacts are as follows:

- ❖ Discovery of an economically viable mineral resources
- ❖ Employment contributing to the economy.
- ❖ Positive contribution to the South African Gross Domestic Product
- ❖ Concurrent rehabilitation during prospecting

The potential negative impacts are as follows:

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

- ❖ Impact on groundwater;
- ❖ Loss of fossil heritage.

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

17. For inclusion in the EMPr, proposed impact management objectives and impact management outcomes;

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

The objectives of the EMPr will be to:

- Provide enough information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts.
- Provide enough information and guidance to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.
- Develop an approach that ensures environmental compliance.
- Provide a management programme that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures it is anticipated that the identified social and environmental impacts can be managed and mitigated effectively. Heritage/cultural resources can be managed by avoidance of known resources and through consultation with landowners/stakeholders. Contractor personnel will also be briefed of these sensitivities and consequences of any damage/removal of such features. Through the implementation of the mitigation and management measures, it is expected that:

- Noise generation can be managed through consultation, restriction of operating hours, by maintaining equipment and applying noise abatement equipment if necessary.
- Visual intrusion can be managed through consultation with landowners/ stakeholders and by suitable siting of drill pads and use of screens (natural vegetation or shade cloth, etc.).
- Traffic is managed to minimise congestion in and around the drilling site.
- Dust fall can be managed by application of wet suppression on exposed surfaces and use of water during drilling.
- Soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and disturbed areas will be re-vegetated with indigenous species as soon as possible.

- Animal life is always protected and preserved, and the prospecting activities have limited impact on the surrounding habitat.
- Social friction with landowners can be managed by employing strong, experienced personnel with public consultation and conflict resolution skills during stakeholder consultation. All prospecting personnel will be made aware of local conditions and sensitivities and trained to treat residents with respect and courtesy.
- Employment is created during the prospecting, contributing to the local economic even if it is only on a temporary basis.

18. Aspects for inclusion as conditions of Authorization

Any aspects which must be made conditions of the Environmental Authorisation.

- Maintain a buffer of at least 100m from any water body and infrastructure/ dwelling.
- Landowners and land occupiers should be engaged (re-consulted) at least 14 days prior to any site activities being undertaken once drill sites are known.
- A map detailing the drilling locations should be provided to the landowners, as well as the DMRE prior to commencement of prospecting activities.

19. Description of any assumptions, uncertainties and gaps in knowledge.

Which relate to the assessment and mitigation measures proposed?

- It is assumed that the proposed project description provided by the applicant is enough in providing the authorities with the right information regarding the project.
- It is assumed that the public consultation process to be undertaken as part of the EIA will suffice and that the application will be considered objectively based on stakeholders' response to the proposed activities.

20. Reasoned opinion as to whether the proposed activity should or should not be authorized.

20.1 Reasons why the activity should be authorised

The EAP recommends that the proposed prospecting activities be authorised:

- The environmental impacts associated with the limited drilling activities are minimal, provided that the proposed mitigation is implemented.
- The spatial extent of the physical impact is less than 1 ha per drill site over a prospecting right license area of over 4696.869ha; 15 drill sites will be established during the drilling phase.
- With appropriate care and consideration, the impacts resulting from drilling can be suitably avoided, minimised or mitigated.
- By implementing the appropriate rehabilitation activities, the impacts associated with drilling can be reversed.
- Without implementation of prospecting activities, the knowledge concerning the potential mineral resource within the prospecting right area will not be confirmed.

20.2 Conditions that must be included in the authorisation

- Maintain a minimum 100m buffer from any water and infrastructure/ dwelling.
- Landowners and occupiers should be consulted again at least 1 month prior to any site activities being undertaken once drill sites are known.
- A map detailing the drilling locations must be provided to the landowners and the DMRE prior to commencement of prospecting activities.
- Record must be kept of the implementation of the EMPr measures and monitoring of the efficiency of the implemented measures.
- A closure plan must be submitted to show measures to avoid, manage and mitigate environmental impacts associated with decommissioning of proposed activities.

21. Period for which the Environmental Authorisation is required

The authorisation is required for the duration of the prospecting right, which is an initial 5 years plus potential to extend the right by 3 years. A total period of 8 years is required.

22. Undertaking

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


It is confirmed that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the BAR and the EMPr.

23. Financial provision

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

A financial provision of approximately **R 38 803** which includes rehabilitation activities, has been made by **Jaments (Pty) Ltd**. A breakdown of these costs is presented in below . The applicant undertakes to provide financial provision through funding from the personal account.

Table 17: Calculation of the quantum.



JAMENTS

CONSTRUCTION PROJECT MANAGEMENT

Applicant:

Evaluator:

Abel Mojapelo

Ref No.:

Date:

MP30/5/1/1/2/ 17297 PR

02-Sep-22

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	9622,12	49	0,03	1	14144,5164
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,1	1	13512,42
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							27656,9364
1	Preliminary and General		3318,832368		weighting factor 2 1		3318,832368
2	Contingencies			2765,69364			2765,69364
Subtotal 2							33741,46
VAT (15%)							5061,22
Grand Total							38803

Singed: Abel Mojapelo

Date: 02/09/2022

Singed: Abel Mojapelo
Date: 02/09/2022

23.1 Explain how the aforesaid amount was derived.

Confirm that this amount can be provided for from operating expenditure. Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the PWP.

The drilling contractor will be responsible for rehabilitating the drill pad once the drilling activities have been completed at each drill hole. The responsible exploration geologist will confirm the quality of rehabilitation conducted by drilling contractor and sign it off. The financial guarantee was calculated using the DMRE official financial quantum calculator. This information has been provided in the PWP that was submitted to the DMRE.

An amount of **R1617747.00** is required to finance the PWP over a period of 3 years. The extended 2 years will be based on the results of the first 3-year drilling programme. Work will be approved on a phase-by-phase basis, dependent on the results obtained i.e, although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. **Table 18** shows a breakdown of the expected costs throughout the exploration process. The amount is also reflected in the PWP submitted to the DMRE.

Table 18: Expenditure per activity.

ACIVITY	YEAR 1 Expenditure (R`)	YEAR 2 Expenditure (R`)	YEAR 3 Expenditure (R`)
Phase 1 (Months 0 to 12)			
Literature surveys	R 2 500.00	R1 500.00	
Desk top studies	R 10 000.00	R 5 000.00	
Geophysical or geotechnical work	R 10 000.00	R 4 000.00	
Research and target identification		R 5 000.00	
Invasive work, (Drilling 05 boreholes a depth 0f 50m)	R48 024 9.00		
Phase 2-3 (Months 13 to 36)			
Invasive work, (Drilling 10 boreholes a depth of 50m)		R48 024 9.00	R48 024 9.00

Sampling work		R 25 000.00	R 15 000.00
Laboratory work		R 22 800.00	R 11 200.00
Analytical and modelling work			R 40 000.00
Infill work			R 25 000.00
Bulk sampling and testing to be carried out			
Annual Total	R 502 749.00	R 543 549.00	R 571 449.00
		Total Budget	R1617747.00

Specific Information required by the competent Authority.

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

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

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

24 Specific information required by the competent authority.

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

24.1 Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998).

The EIA report must include the:

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

Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful

occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix.

A full consultation process was implemented during the environmental authorisation process. The purpose of the consultation is to provide affected persons the opportunity to raise potential concerns. Concerns raised have been captured and addressed in the public participation section of this report. As the final positioning of the drill sites cannot be confirmed without completion of phase 1 of the prospecting programme, a recommendation has been made to ensure that the directly affected landowners are re-consulted a minimum of one month prior to implementing invasive activities (drilling). The purpose of the re-consultation is to ensure that socio-economic impacts on directly affected persons can be raised and, where possible, addressed.

24.1.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6. and 2.12. herein.

Mitigation measures proposed in this report include that no drill site will be located within 100m of any identified heritage site (which may occur during the prospecting programme) based on desktop work. Furthermore, from desktop studies undertaken, old abandoned houses were observed in the area. However, comment from the South African Heritage Agency (on a national level) and from Local Heritage Resources offices will be sought to confirm the need for a Heritage Impact Assessment.

24.2 Other matters required in terms of sections 24(4)(a) and (b) of the Act.

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

The proposed site was selected based on extensive research and following information from previous prospecting activities in the area. The proposed prospecting has been chosen based on the long-term success of the company in terms of their prospecting history. The prospecting activities proposed in the PWP is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

25 Other matters required in terms of sections 24(4)(A) and (B) of the act.

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

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

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

26 Introduction

26.1 Details of the EAP

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

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

26.2 Description of the Aspects of the Activity

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

Herewith, it is confirmed that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (2) herein as required.

26.3 Composite Map

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

Refer to **Appendix 2** for a composite map.

27 Description of Impact management objectives including management statements.

27.1 Determination of closure objectives

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

The prospecting activities are dependent on the preceding phase (non-invasive). Prospecting is conducted in phases, where the activities and location of drilling and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined.

The closure objectives include:

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

27.2 Volumes and rate of water use required for the operation.

After careful consideration of the scale of operation it has been deduced that approximately 40 L will be used as potable water. It is anticipated that water will be purchased from a private water filter dealer such as Oasis and brought onto the site.

27.3 Has a water use license been applied for?

No, the main prospecting right activities that will take place include Drilling, Logging, Sampling and Mapping. It should be noted that these activities do not include any mining activities nor bulk sampling, and No PCD, Trenches and Berms will be constructed. The drilling activity will only take up about 0.9 ha per planned borehole, and all the planned exploration boreholes will be outside the 100m DWS regulated radius from the watercourses. No water will be abstracted from the drilled exploration boreholes. 5000L Jojo tank will be used to store water for drilling.

25 Impacts to be mitigated in their respective phases.

Measures to rehabilitate the environment affected by the undertaking of any listed activity.

Table 19: Impact mitigation and rehabilitation.

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
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/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure and post-closure.	Volumes, tonnages and ha/m ²	Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.	A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.	Describe the period when the measures in the environmental management program must be implemented. Measures must be implemented when required. Rehabilitation must take place at the earliest opportunity. With regard to rehabilitation, state whether it will take place upon cessation of the individual activity or cessation of mining, bulk sampling or alluvial diamond prospecting.
Site establishment activities Vegetation clearance Topsoil stripping and stockpiling Drill pad compaction Placement of temporary portable toilets and resting	Construction/setup and operational phase	600m ² diamond drill holes	Any buried artifacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and	Heritage Act	Before and during drilling activities

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
place Vehicle movements Waste management			determine appropriate mitigation measures.		
	Construction/setup and operational phase	600m ² diamond drill holes	Control noise generation by maintaining equipment. Limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays. Maintain a buffer of 100 m between drill sites and dwellings. The resting place shall be located outside of the 82dB Zone of the drill site.	SANS 10103 guideline	Before and during drilling activities
Exploration drilling: Drilling Drill maintenance and re-fueling Core sample collection and storage Vehicle movements Waste generation and management	Construction/setup and operational phase	600m ² diamond drill holes	The drilling rig and other visually prominent items on the site will be located in consultation with the landowner; Make use of existing vegetation as far as possible to screen the prospecting operations from view; and If necessary, the operations can be screened from view by erecting a shade cloth	N/A	Before and during drilling activities

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
			barrier		
	Construction/setup and operational phase	600m ² diamond drill holes	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces. Maintain a buffer of 100 m between drill sites and dwellings	GN R. 827 (NEMAQA)	Before and during drilling activities
	Construction/setup and operational phase	600m ² diamond drill holes	The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and will not be dozed or scraped with vegetation roots left intact for later re growth; and Disturbed areas will be vegetated with locally indigenous species as soon as possible.	N/A	Before and during drilling activities

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
	Construction/setup and operational phase	0.9 Ha per drill site	All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution, including environmental coordinator where applicable; All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area.	NEMA	Before and during drilling activities

26 Impact Management Outcomes.

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

Table 20: Measures to rehabilitate the environment affected by the undertaking of any listed activity, impact management outcomes, and impact management actions for.

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
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/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	Including the potential impacts for cumulative impacts. E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.		In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure and post-closure.		
Site establishment activities (-ve) Vegetation clearance Topsoil stripping and stockpiling Drill pad compaction Erection of office, toilets, fuel storage (if not by road	Cultural and heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/ heritage artefacts have been identified on site.	Construction/ set-up	If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately. The find must be reported to a heritage specialist so that systematic and professional	Heritage Act

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
tanker), water tanker, core storage Vehicle movements Waste management				investigation/ excavation can be undertaken.	
	Noise	Noise generation	Construction/ set-up	<p>Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays.</p> <p>Separation of distance of minimum 500m, but preferably 1 000m to be maintained between drill sites and dwellings.</p> <p>Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition.</p> <p>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</p>	SANS 10103
	Visual	Visual intrusion	Construction/ set-up	The drilling rig and other visually prominent items on the site will be located in consultation with the landowner.	N/A

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>Make use of existing vegetation as far as possible to screen the prospecting operations from view.</p> <p>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</p>	
	Traffic	Increase in traffic volumes in drilling site vicinity	Construction/ set-up	<p>Traffic signs to be put around the site to notify motorist of the activities.</p> <p>Construction vehicles to make trips on/off site only when necessary.</p> <p>Construction vehicles to adhere to local speed limits as far as possible when driving in around site.</p>	National Traffic Act Regulations
	Dust fall	Dust fall and nuisance from activities	Construction/ set-up	<p>Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations.</p> <p>Separation of distance of minimum 500m, but preferably 1 000m to be maintained between drill sites and dwelling.</p> <p>Low vehicle speeds will be</p>	GN R. 827 (NEMAQA)

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				enforced on unpaved surfaces.	
	Soil and vegetation	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.	Construction/ set-up	<p>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad.</p> <p>Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow.</p> <p>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</p>	NEMBA
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Construction/ set-up	<p>Environmental awareness training sessions should be part of the workers' induction and site workshops.</p> <p>If any animals are met, they must not be killed or injured, but should rather be removed or chased away from the site.</p>	NEMBA
	Social	Friction between residents/landowners and construction personnel.	Construction/ set-up	All operations will be carried out under the guidance of a strong, experienced manager with	NEMA

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>proven skills in public consultation and conflict resolution.</p> <p>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the prospecting activities in the area.</p> <p>There will always be a strict requirement to treat residents with respect and courtesy .</p>	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	No mitigation measures required.	NEMA
<p>Exploration drilling (ve)</p> <p>Drilling</p> <p>Drill maintenance and refuelling</p> <p>Core sample collection and storage</p> <p>Vehicle movements</p> <p>Waste generation and</p>	Noise	Noise generation	Operations	<p>Activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays.</p> <p>Separation of distance of minimum 100m, but preferably 1 000m to be maintained between drill sites and dwellings; Noise</p>	Heritage Act

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
management				<p>abatement equipment, such as mufflers on diesel engines, will be maintained in good condition.</p> <p>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</p>	
	Visual	Visual intrusion	Operations	<p>The drilling rig and other visually prominent items on the site will be located in consultation with the landowner.</p> <p>Make use of existing vegetation as far as possible to screen the prospecting operations from view.</p> <p>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</p>	SANS 10103
	Traffic	Increase in traffic volumes in the drilling site vicinity	Operations	<p>Traffic signs to be put around the site to notify motorists of the activities.</p> <p>Construction vehicles to make trips on/off site only when necessary.</p>	N/A

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				Construction vehicles to adhere to local speed limits as far as possible when driving in around site.	
	Dust fall	Dust fall and nuisance from activities	Operations	Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations. Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings. Low vehicle speeds will be enforced on unpaved surfaces.	National Traffic Act regulations
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required. No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow.	GN R. 827 (NEMAQA)

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				Disturbed areas will be re vegetated with locally indigenous species as soon as possible.	
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Operations	Measures implemented during site establishment should apply in this phase as well.	NEMBA
	Social	Friction between residents/landowners and construction personnel	Operations	<p>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution.</p> <p>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the prospecting activities in the area.</p> <p>There will always be a strict requirement to treat residents with respect and courtesy .</p>	NEMBA
	Job creation	Employment will be	Operations	No mitigation measures required.	NEMA

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		created for the clearing of the land and establishing the drilling site.			

The fauna at the site will not be impacted by the proposed processing activity, as they will be able to move away from or through the site unharmed. Workers must be educated and managed to ensure that no fauna at the site is harmed. Upon commencement of the proposed processing activities, the processing area will be fenced off to prevent livestock, from wandering into the work areas. Rehabilitate pits and drill holes sites immediately after sampling, concurrent rehabilitation, do not wait until the end to rehabilitate.

27 Impact Management Actions.

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

Activities	Potential impact	Mitigation type	Implementation period	Compliance with standards
Whether listed or not. E.g. excavations, blasting, stockpiles, discard dumps/dams, loading, hauling and transport, water supply dams/boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm	E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, ground water contamination, air pollution, etc.	Modify, remedy, control or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity, etc. E.g., modify through alternative method, control through noise control, control through management and monitoring, and remedy through rehabilitation.	State when the environmental management programme measures must be implemented. Measures must be implemented when required. This must take place as soon as possible. Regarding rehabilitation, state upon cessation of the individual	A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have

Activities	Potential impact	Mitigation type	Implementation period	Compliance with standards
water control, berms, roads, pipelines, power lines, conveyors, etc.			activity or mining, bulk sampling or alluvial diamond prospecting.	been identified by Competent Authorities.
Site establishment activities Vegetation clearance Topsoil stripping and stockpiling Drill pad compaction Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage Vehicle movements Waste management	Cultural and heritage	Undertake heritage survey prior to site activities to identify cultural/heritage features and cordon these off with Chevron tape. Avoid cultural/heritage impacts by maintaining 100m buffer from any identified heritage feature. Any buried artifacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and determine appropriate mitigation measures.	Before and after drilling activities.	Heritage Act
Exploration drilling Drilling Drill maintenance and refueling Core sample collection and storage Vehicle movements Waste generation and management	Noise	Control noise generation by maintaining equipment and limiting operation hours to daylight hours from Mondays to Saturdays (no activities on Sundays and public holidays). Maintain a buffer of 500m-1 000m between drill sites and dwellings. If intrusive noise levels are experienced by any person at any point, the source will be moved if practical, or placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.	Before and after drilling activities.	SANS 10103
	Visual	The drilling rig and other visually prominent items on site will be placed in consultation with the landowner. Existing vegetation will be used as far as possible to screen the prospecting operations from view. Operations can be hidden from view by	Before and after drilling activities.	N/A

Activities	Potential impact	Mitigation type	Implementation period	Compliance with standards
		erecting a shade cloth barrier.		
	Dust fall	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces.	Before and after drilling activities.	GN R. 827 (NEMAQA)
	Soil and vegetation	Soil disturbance and vegetation clearance at drill pads will be kept to the minimum required and not be dozed/scraped; vegetation roots will be left intact for regrowth. Disturbed areas will be re-vegetated with indigenous species as soon as possible.	Before and during drilling activities; disturbed areas to re-vegetated as soon as possible.	N/A
	Social	Operations will be carried out under the guidance of an experienced manager with public consultation and conflict resolution skills. All prospecting personnel will be made aware of conditions and sensitivities in the prospecting area and of the fact that some residents may not welcome the prospecting activities. Residents will always be treated with respect and courtesy .	Before and after drilling activities.	NEMA

28 Financial Provision.

28.1 Determination of the amount of Financial Provision.

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

The following closure objectives will be applicable for concurrent rehabilitation:

- Land disturbed will be rehabilitated to a stable and permanent form suitable for subsequent land use e.g., crop farming and livestock farming.
- The final land use will be like surrounding land-use i.e., crop farming & Livestock farming (cattle).
- There will be no adverse environmental effect outside the small, disturbed areas (0.9ha) per borehole and the affected area will be shaped to ensure effective drainage.

The closure objectives are to minimize disturbance wherever possible so that normal land use can continue after closure. Monitoring and maintenance of rehabilitated areas forming part of site closure to ensure the long-term effectiveness and sustainability of measures implemented. Rehabilitation of areas that will be disturbed because of prospecting activities to a land capability that will support and sustain a predetermined post-closure land use. The closure objectives include:

- Eliminating any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling
- Remove and/or rehabilitate all pollution and pollution sources, such as waste materials and spills
- Establishing the rehabilitated area, which is not subject to soil erosion and may result in the loss of soil, degradation of the environment and pollution of surface water resources
- Restore disturbed area and re-vegetate these areas with grass species naturally occurring in the area to restore the ecological function of such areas as far as is practicable

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

The environmental objectives in relation to closure were consulted with affected parties. It was explained that should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use. The end-use of the area will therefore not be changed by the prospecting operations.

Minimise the area to be disturbed and to ensure that the areas disturbed during the prospecting activities are rehabilitated and stable, as per the commitments made in the EMPr.

Sustain the pre-prospecting land use and return the site to its near natural state as far as possible.

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

The activities involved are for prospecting and will involve no permanent removal of soil and rock. Should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use. The end-use of the area will therefore not be changed by the prospecting operations. However, should the prospecting operation yield positive results, then the farm could be subject to bulk sampling, mining rights or permit application and another more comprehensive Public Participation, Scoping, EIA and EMP process.

If a mining right is granted, then the area will be rehabilitated according to the requirements of the approved Environmental Management Programme that would apply throughout the life of the mine.

Rehabilitation of the prospecting site

To the effect on plants, seeds should be collected from plants reserved prior to disruption. If seeds are harvested from nearby seedbanks, the availability of seeds as a food source for several animals and birds may be indirectly affected. To facilitate establishment, replanting should only take place in springs or early summers (September to November), once the first rains have fallen.

The areas shall be cleared of any polluted soil upon the completion of the prospecting project. The surface shall then be ripped or ploughed to a depth of at least 300 mm and the surface of the surface previously stored adjacent to the site shall be distributed uniformly over the entire area to its original depth. If required, the area is then fertilized (based on a soil analysis). A plant seed mix adapted to represent the local indigenous flora is to be planted at the site. The surface shall be scarified or torn where the site has been rendered devoid of vegetation/grass or where soils have been compacted due to traffic.

Before and during the prospecting activity and after recovery and closure, photographs of the camp, office locations and various borehole locations shall be taken at selected fixed points and kept on record for the knowledge of the Regional Manager.

Destruction/removal of infrastructure

On completion of operations, all structures on the prospecting terrain shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). Infrastructure that will be demolished should be assessed for its suitability to be re-used or recycled. These proposed prospecting activities will not involve permanent infrastructure. After drilling has been completed in one area, the drilling team will ensure the site is reverted to its original state by implementing the measures listed in **Table 21** below.

Table 21: Rehabilitation measures.

Aspect/Impact	Rehabilitation Measure	Monitoring Frequency and Responsibility
Removal of construction structures	<ul style="list-style-type: none"> • Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works; and • Ensure that all access roads utilised during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction. 	Once-off, Jaments (Pty) Ltd
Vegetation clearing/Replanting	<ul style="list-style-type: none"> • Remove any emerging alien and invasive vegetation to prevent further establishment; • All planting work is to be undertaken by suitably qualified personnel making use of the appropriate equipment; • Transplant during the winter (between April and September); and • Plant indigenous plants to minimise the spread of alien and invasive vegetation. 	When revegetation is done and in blooming season,
Topsoil replacement	<ul style="list-style-type: none"> • Replace and redistribute stockpiled topsoil together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the prospecting site, including temporary access routes and roads. Replace topsoil to the original depth (i.e. as much as was removed prior to construction). • Prohibiting the use of topsoil suspected to be contaminated with the seed of alien vegetation. Alternatively, the soil is to be sprayed with specified herbicides. • Backfill planting holes with excavated material / approved topsoil, thoroughly 	Once-off, Jaments (Pty) Ltd

	<p>mixed with weed free manure or compost (per volume about one quarter of the plant hole), one cup of 2:3:2 fertiliser and an approved ant and termite poison.</p> <p>Avoid compaction of soil as the single problem limits the effective of rehabilitation</p>	
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Alien Plant Management Plan

The Alien and Invasive Species Regulations of the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA) regulates all invasive organisms in South Africa and categorizes invasive plant species into four different categories: Category 1a & 1b, Category 2 and Category 3. Land users must control these plants by means of the methods prescribed in the Act. Unless authorised thereto in terms of the National Water Act, 1998 (Act No. 36 of 1998), no land user shall allow category 2 plants to occur within 30 meters of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland. Category 3 plants are also prohibited from occurring within close proximity to a watercourse (source: Droogenfontein, Vegetation Assessment, 2013).

In terms of the National Environmental Management: Biodiversity Act, invasive species are either prohibited or require a permit to be reserved on site. It is recommended that these species are controlled using registered control methods. The compilation of an Alien Plant Management Plan is recommended to achieve control of alien plants as follows:

- Prevention, early detection and eradication of weed species is the most economical and effective means of invasive plant management.
- Minimize soil disruption during both prospecting activities and rehabilitation
- Ensure vehicles and equipment are clean of invasive plants and seed
- Limit the movement of weed-infested soil.

Final Land use after rehabilitation

After the prospecting operations, the use of Trekpad land within the proposed prospecting project area will not change. However, the area will need to be monitored every second month for the first three (3) years after borehole drilling, especially on the drilled rehabilitated area, until the land brings to its original state.

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

The Company is required to make the prescribed financial provision for the rehabilitation or management of negative environmental impacts. If the Company fails to rehabilitate or manage any negative impact on the environment, the DMRE may, upon written notice to the Company, use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question. The Company will specify that the drilling contractor is required to comply with all the environmental measures specified in the EMP. This will include avoiding unnecessary disturbance of natural vegetation and the rehabilitation of each drill site, immediately after drilling has been completed. All tracks to the drill sites must be rehabilitated at the end of the prospecting programme. The financial provision provides for the final checking of all sites before site clearance.

The land use capability assessment should be done before commencement of prospecting activities thus assumes fundamental importance in determining the rehabilitation plan. Safety after the completion of the prospecting activities will be done by concurrent rehabilitation of drill holes. Overburden will be recorded, and the holes filled back simultaneously.

compaction is the greatest single factor limiting the effective of rehabilitation.

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

To minimise compaction of replacement of soil

- Move soil when is dry. Soils should only be handled during dry season.
- Use appropriate equipment. Equipment used to replace soil has a major effect on compaction. After soil replacement, initial smoothing of the rough soil. Minimise travelling over the re-created profile

The objective of rehabilitation is to establish natural vegetation (e.g to enhance biodiversity) and where soil have been stripped and replaced directly with the seed-containing horizon on top, there should be no requirement for seed-bed preparation or seeding.

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

The quantum of the financial provision required is **R38 803**. The Company must annually update and review the quantum of the financial provision (as per Regulation 54 (2) of the MPRDA). Regulation 54 deals with the quantum of financial provision and stipulates that it

must be updated and reviewed annually. It must include, amongst others, a detailed breakdown of the cost required for post-closure management of residual and latent environmental impacts.

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

Jaments (Pty) Ltd herewith confirms both its capacity and willingness to make the financial provision required should the prospecting right be granted. The amount is anticipated to be an operating cost and provided for in the Prospecting Work Programme (PWP).

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

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

Table 22: Mechanism for monitoring.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Drilling (Site Establishment)	The clearing of vegetation	Weekly monitoring	Appointed drilling contractor	Weekly, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE
Drilling	The storage of hydrocarbon-based materials on site	Weekly monitoring	Appointed Drilling Contractor	Weekly, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE
Drilling	On-site waste management	Weekly monitoring	Environmental Control Officer	Weekly, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE
Drilling	The creation of roads/tracks	Weekly monitoring	Appointed drilling contractor	Daily by hired contractor, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE

Drilling	The removal of soil	Weekly monitoring	Drilling Contractor	Weekly done by contractor, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE
Drilling	Driving activities	Weekly monitoring	Licensed Driver	Daily by qualified driver, independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE
Drilling	Groundwater: Monitor the water quality of the boreholes	Weekly monitoring	Hydrogeologists	Weekly by Hydrogeologist, annually by independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE

**I. Indicate the frequency of the submission of the performance assessment/
environmental audit report.**

Regular monitoring of all the environmental management procedures and mitigation measures shall be carried out by the Company in order to ensure that the provisions of this EMP are adhered to. Formal monitoring and performance assessment of the EMP will be undertaken annually. A framework for a monitoring and performance assessment report is included in Appendix. Site photographs taken before drilling commences after each drilling site has been rehabilitated must be included in the performance assessment reports. Environmental audit report will be submitted annually.

m. Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of an environmental risk which may result from their work.

All employees will be required to undergo site induction. Additionally, daily toolbox talks will be held each morning before the activities for the day are commenced.

The Site Induction training will focus on the following:

- Discussion of environmental impacts as indicated in the Impact Assessment Table
- Waste management – The removal of all waste from site to prevent litter
- Water usage – Conservation of water, correlation between water & erosion.
- Driving protocol – Pre-start vehicle checks prior to driving, adhering to speed limits on dirt roads.
- Farmers protocol
- Environmental mitigation – Example no collection of wood, no open fires, no snaring or poaching of animals, no unnecessary destruction of vulnerable natural vegetation, clean-up of hydrocarbon spills, etc.
- Emergency procedure – Type of emergencies, type of alarms, emergency equipment, location of assembly point and identification of emergency wardens.

During the daily toolbox talks, the following will be discussed:

- Any environmental or health and safety incidents that may have occurred the previous day.
- Status of housekeeping on site.
- Ad hoc refresher in terms of emergency procedures.

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment.

Employees should be provided with environmental awareness training before prospecting operations start. All new employees should be provided with environmental awareness training. Induction courses will be provided to all employees by a reputable trainer.

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

Please refer to the following:

- Impact Table

Environmental training needs for each section should be identified and addressed to ensure environmental management is part of day-to-day operations. The environmental risk responsibilities guide the training requirements of everyone. The responsibility for each level of management according to the Integrated Risk Management and ISO14001 role descriptions are. Environmental training recommended for the different levels of management guide the training needs identification process. This is a minimum guideline, and any additional training can be added where section specific issues or high-risk items require training and awareness. It is the responsibility of the line manager to ensure environmental training needs for individual staff members are identified, agreed to, facilitated and tracked.

n. Specific information required by the Competent Authority

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

- Prospecting Work Programme
- The Financial Provision reviewed on an annual basis indicating work that would have been completed and money used for rehabilitation as required by the law.
- Performance assessment
- External Audits

29. Specific information required by the Competent Authority

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

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

30. UNDERTAKING

The EAP herewith confirms;

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

Signature of the environmental assessment practitioner:

Name of company:

Date:

Appendix 1: Competent Authority Letter.



mineral resources & energy

Department
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Witbank, 1035, Tel: 013 653 0500, Fax 013 680 3288, Saveways Centre, First Floor, Mandela Drive, Witbank, 1035, From: Directorate: Mineral Regulation: Mpumalanga Region, Email: Lerato.Santho@dmre.gov.za Enquiries: Lerato Mariri
Ref: MP 30/5/1/12/17297PR.

BY EMAIL/FAX

Email: kenneth@singoconsulting.co.za

The Director/s

Jaments (Pty) Ltd
P/Bag X7297
Highveld Mall
Witbank
1035

Fax: 086 514 4103

Dear Sir/Madam

ACCEPTANCE OF AN APPLICATION FOR PROSPECTING RIGHT IN TERMS OF SECTION 16(4) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) [HEREIN AFTER REFERRED TO AS THE ACT] AS AMENDED BY SECTION 12(d) OF THE MINERALS AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, 2008 (ACT 49 OF 2008) [HEREINAFTER REFERRED TO AS THE AMENDMENT ACT]

1. Please be informed that your application for prospecting of **Cobalt, Chrome Ore, Platinum Group Metals, Copper Ore, Nickel Ore, Gold Ore** on the remaining extent of portion 1, portions 2, 4, remaining extent of portion 5, portions 7, 11, 13 and the remaining extent of the farm **Rietfontein 375 KT** and the farm **Zwakwater 377 KT**, Magisterial District of **Lydenburg** is hereby accepted in terms of section 16(2) of the Act as amended by section 12(b) of the Amendment Act.

Acceptance of a prospecting right under file reference number 17297PR.


2. Please take notice that in terms of section 16(4) of the Act as amended by section 12(d)(a) and 12(d)(b) of the Amendment Act, you are required to:-
 - 2.1. to consult in the prescribed manner with the landowner, lawful occupier and any interested and affected party, the Land Restitution Commission and submit the result of such consultation within 30 working days from the date of the signature below.
3. You are in terms of section 17(1) of the Act as amended by section 13(c) of the Amendment Act required to give effect to the objects referred to in section 2(d) of the Act **to ensure that you are BBBEE compliant**. Therefore, please submit on or before 24 AUGUST 2023 to this office for the attention of the writer hereon any documentation proving such including but not limited to: -
 - 3.1. Certified copies of share certificates and share holders register
 - 3.2. Certified copies of Shareholders agreements
 - 3.3. Certified copies articles and memorandum of association of the company
 - 3.4. Trust deed documents and letters of authority for any trust holding shares
 - 3.5. Details relating to funding (all relevant agreements)
 - 3.6. Any other information that may be necessary to explain and serve as evidence that the applicant meets the appropriate HDSA ownership and/or compliance requirements of the aforesaid Act and Mining Charter; **thereby including women and communities in your structure.**
4. Please submit **within 14 days** from date of this letter for the attention of **Mr Ntshale Phasha 3 copies of a complete prospecting work programme prepared in terms of regulation 7 of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002): Mineral and Petroleum Development Regulation.**
5. Your attention is also drawn to the provisions of Section 17(1) (e) of the MPRDA, which provides that the minister may grant an application for a prospecting right if the applicant is not in contravention of any relevant provision of this Act. Section 19(2) (f) places an obligation on the holder of a prospecting right to pay the prescribed prospecting fees, as per regulation Acceptance of a prospecting right under file reference number 17297PR.

76 of the MPRDA. You are therefore reminded to ensure that payment of all prospecting fees for all the prospecting right that you hold, are up to date, failing which this may have a negative impact on the outcome of your current application.

6. *In light of the minimum requirements as stipulated on Regulation 16 (1) and 16(2) of the EIA Regulations, your application for an Environmental Authorisation was incomplete as it was not accompanied by this acceptance letter as per Sub Regulation 16(1)(ix) and considering that it is now completed by this acceptance letter, you are hereby required to submit the documents as stipulated on Regulation 19 (1) to 19(8) of the EIA Regulations (Only in cases where Basic Assessment Report is applicable) or Regulations 21 (Scoping Report) and Regulation 23 (EIR and EMPr) (In case of Scoping and Environmental Impact Report). All timeframes are effective from the date of this letter.*

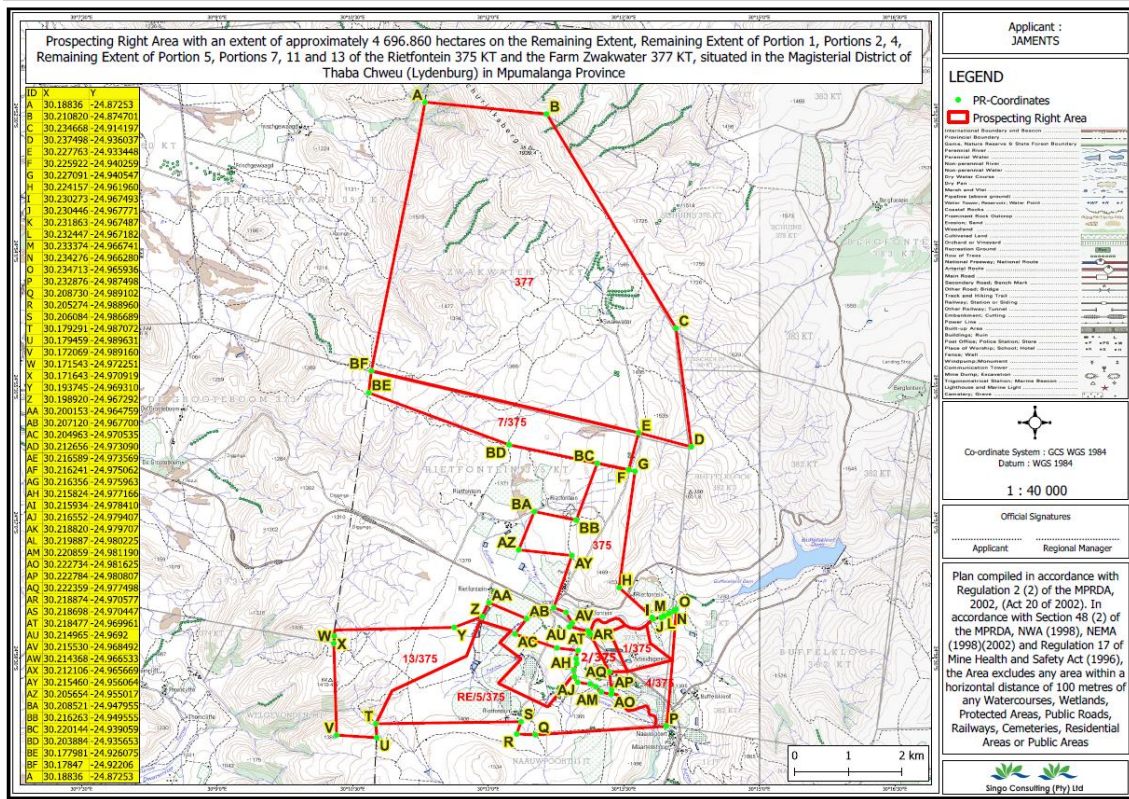
7. Please take note that failure to adhere to the timeframe stipulated above and to submit any documentation required in terms of this notice will result into non-compliance with the provision of the Act and the Amendment Act and will result in your application being processed refusal.

Yours faithfully:

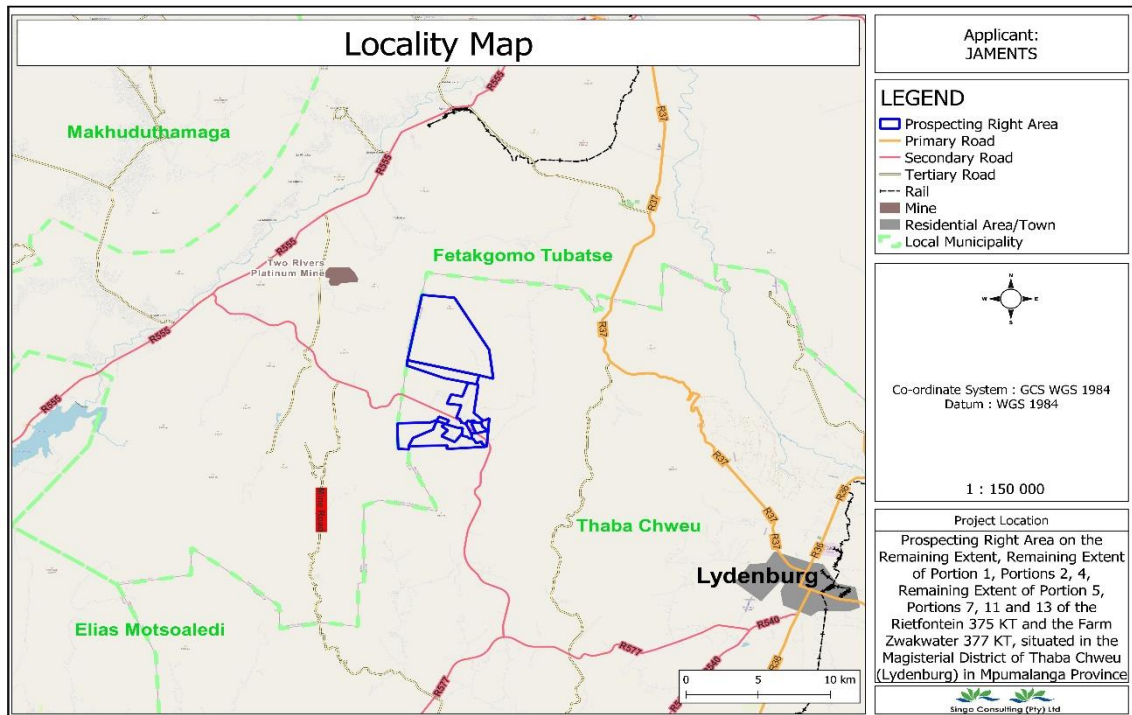

REGIONAL MANAGER
MPUMALANGA REGION
DATE: 25/07/2022

Acceptance of a prospecting right under file reference number 17297PR.

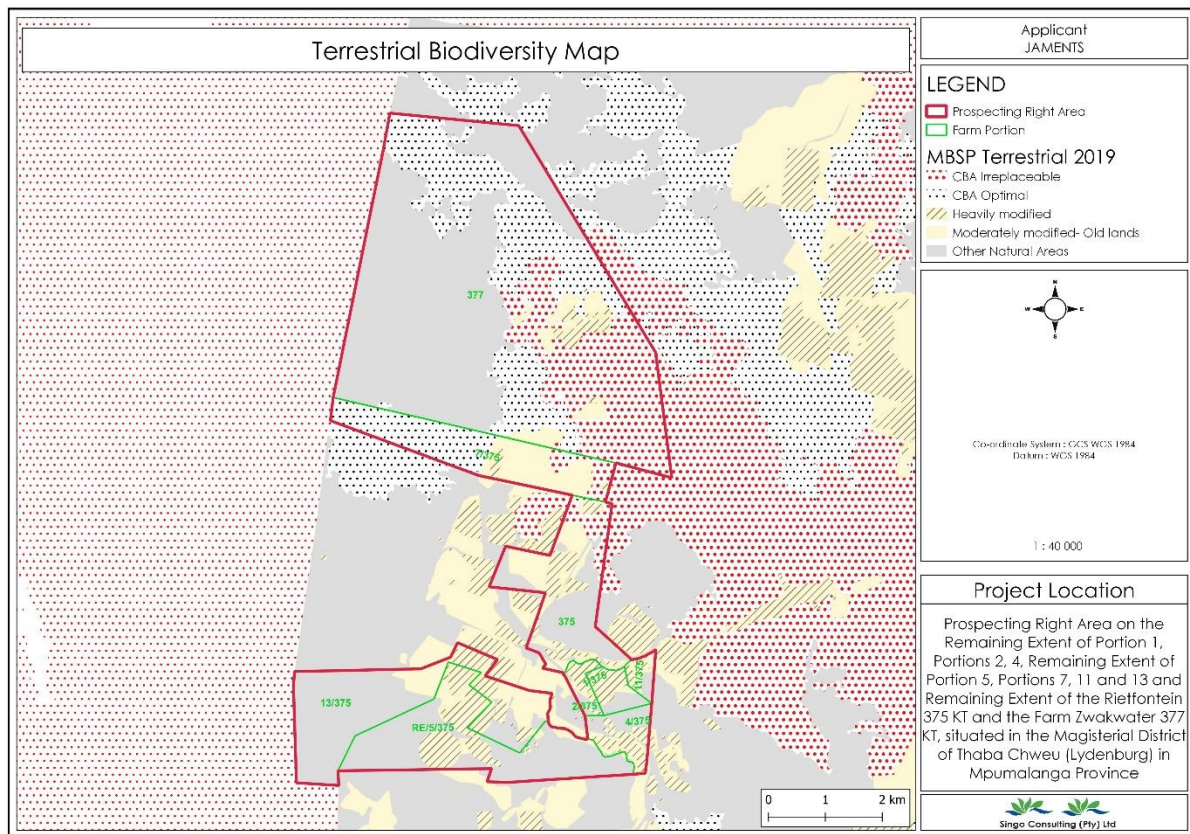
Appendix 2: Project maps



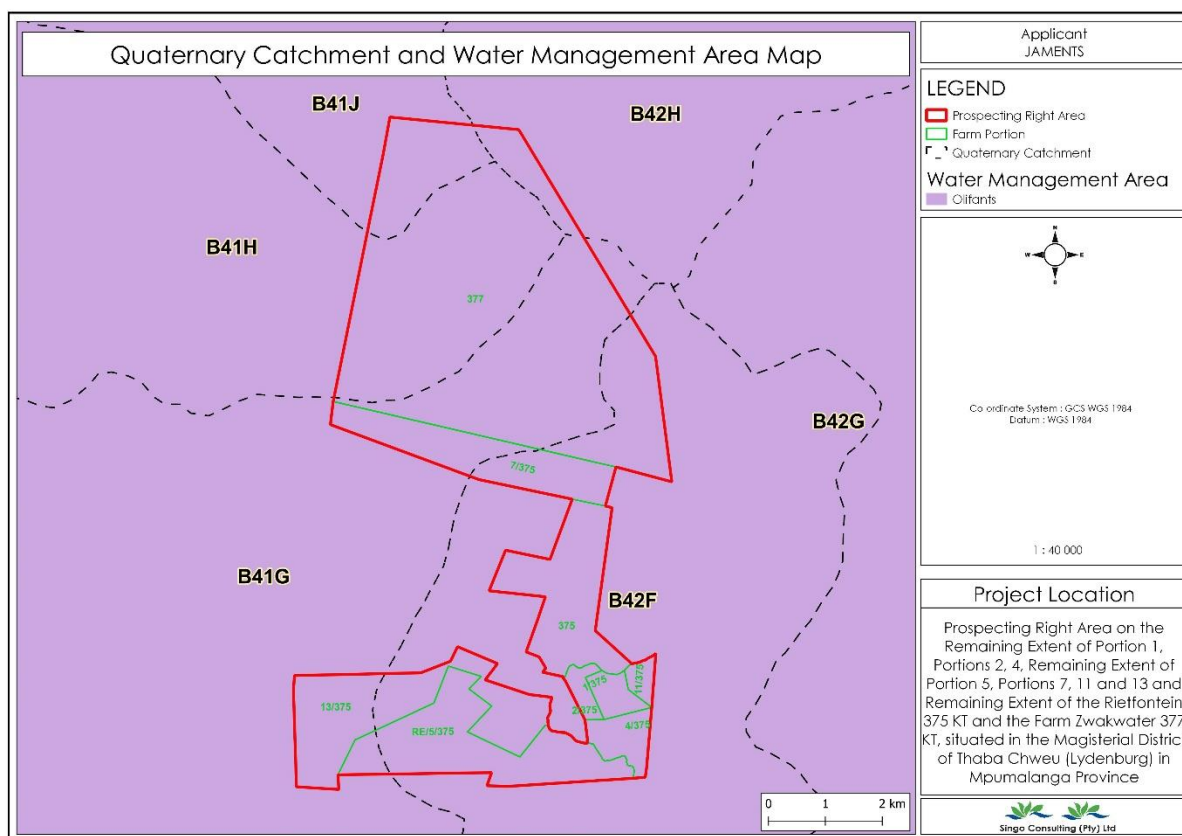
Regulation map



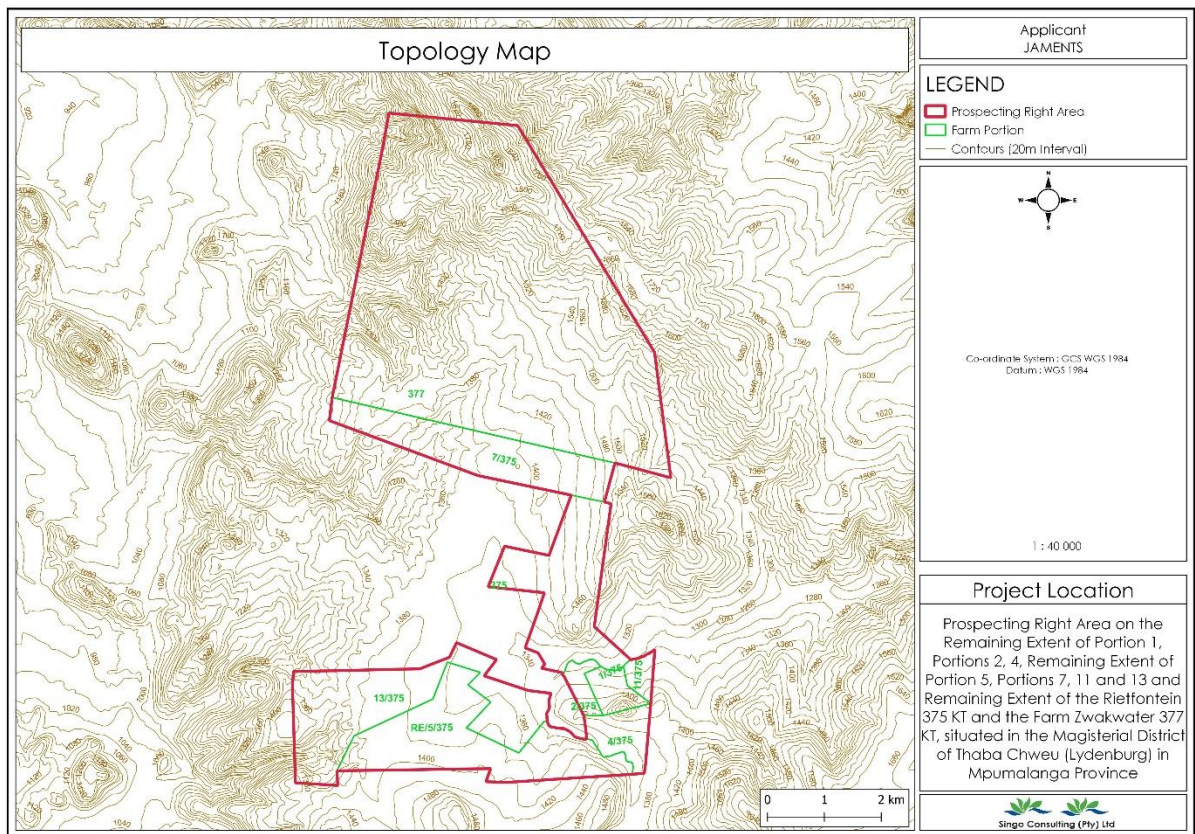
Locality map



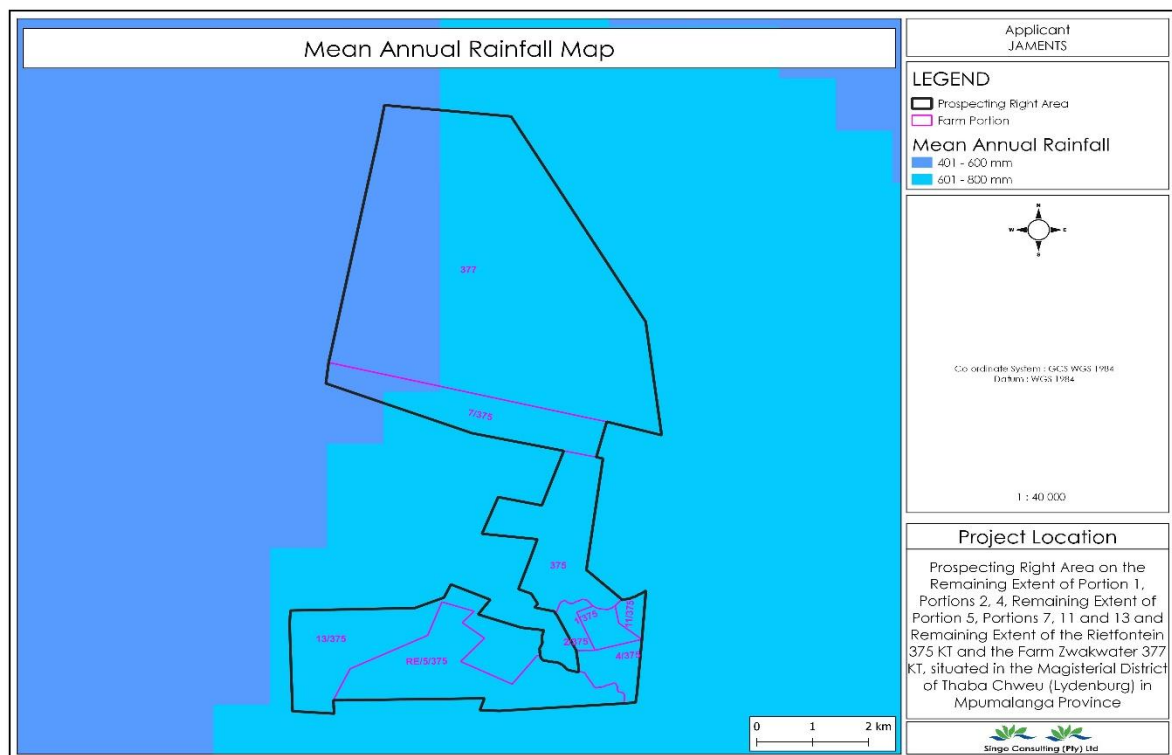
Biodiversity map



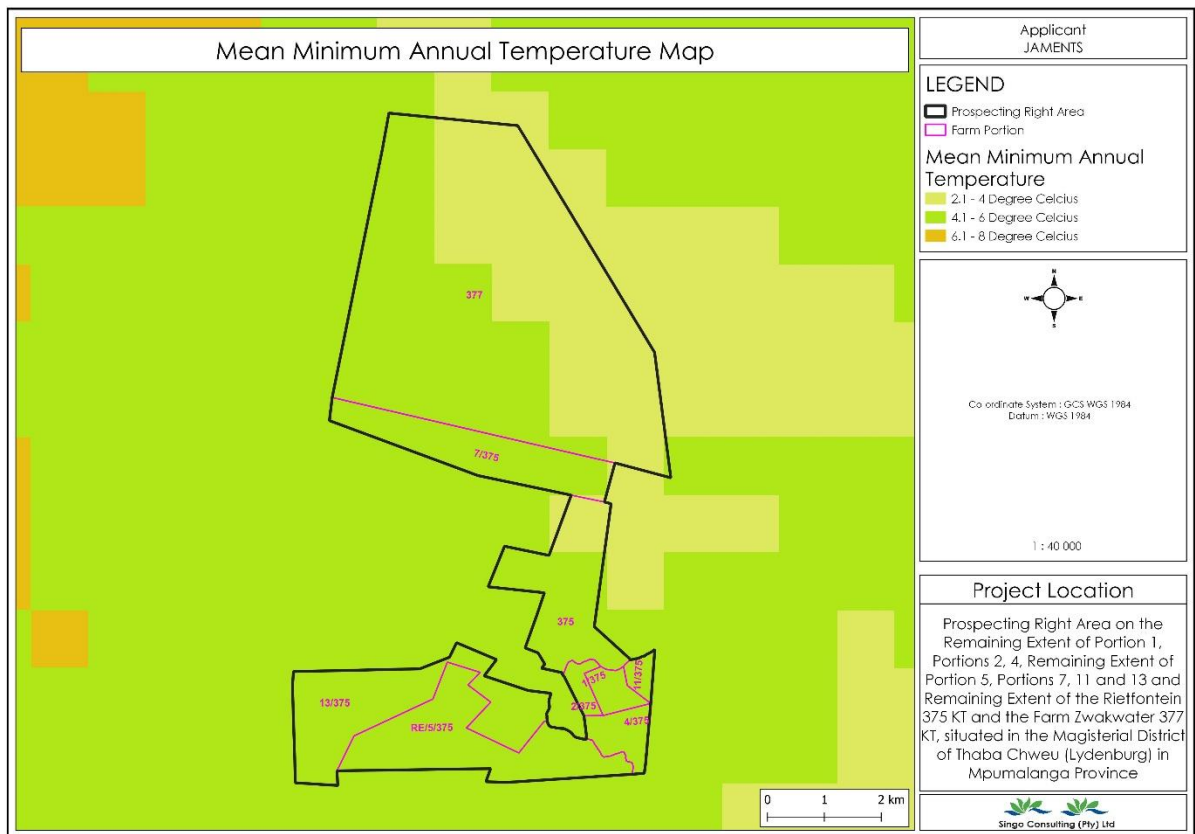
Quaternary Catchment and Water Management Areas map



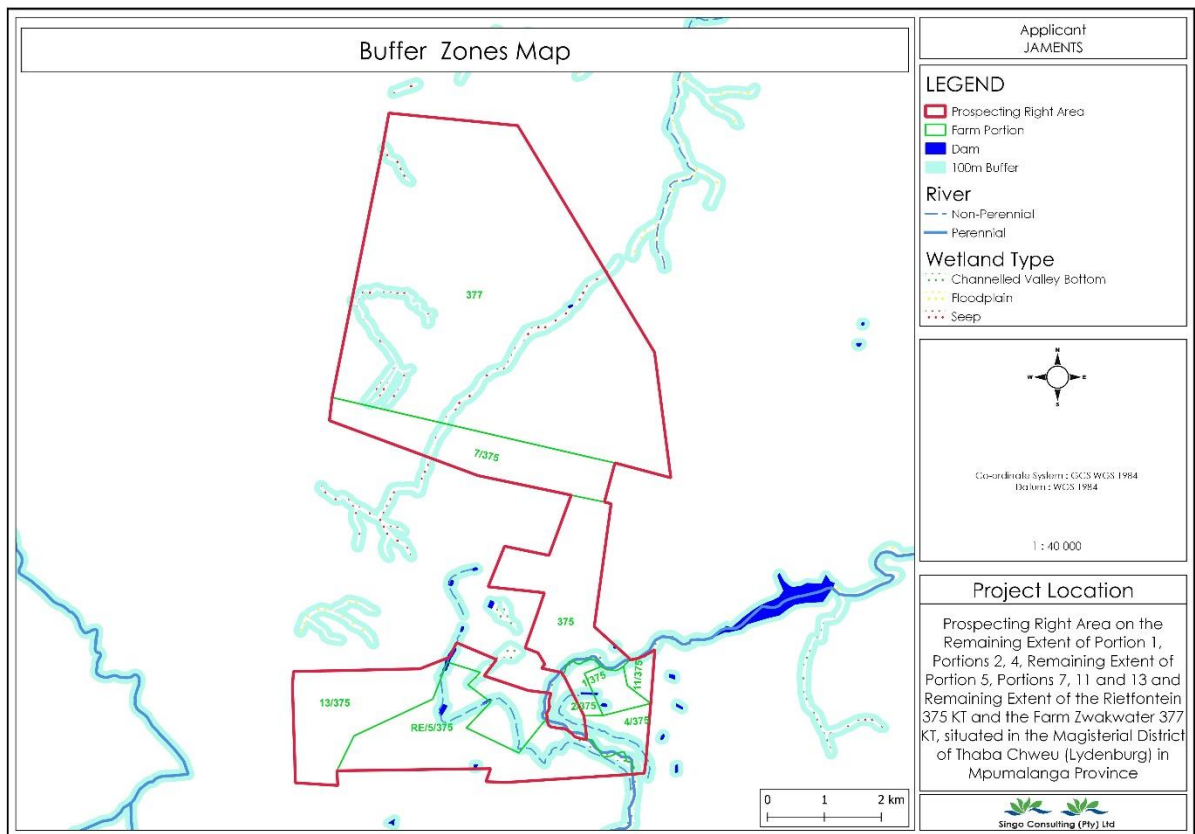
Hydrology and topology map



Mean Annual rainfall map



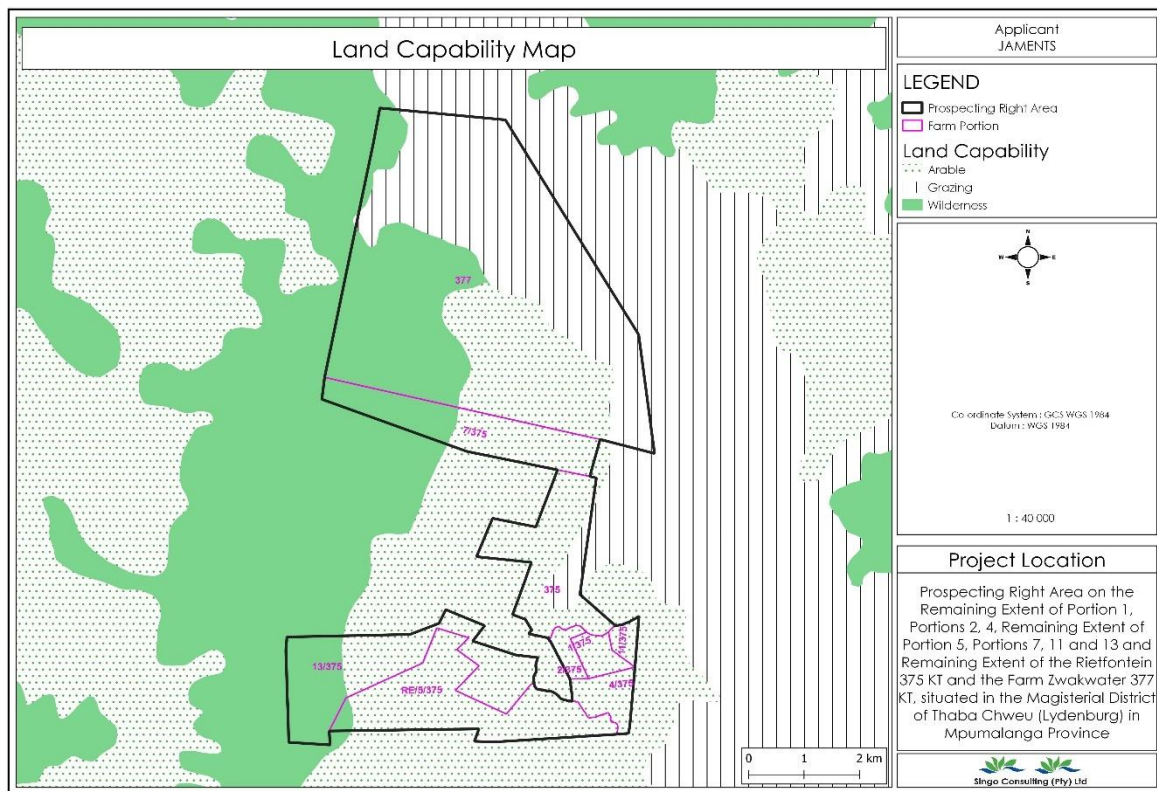
Mean Minimum Annual temperature map



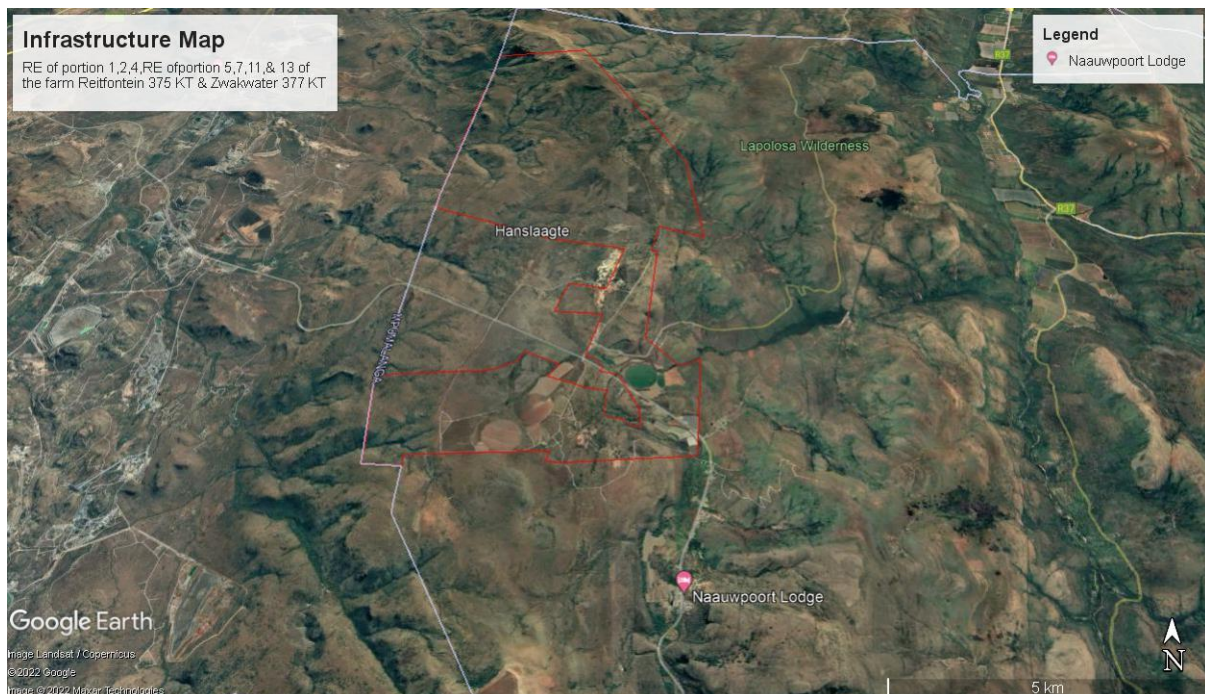
Buffer zone map



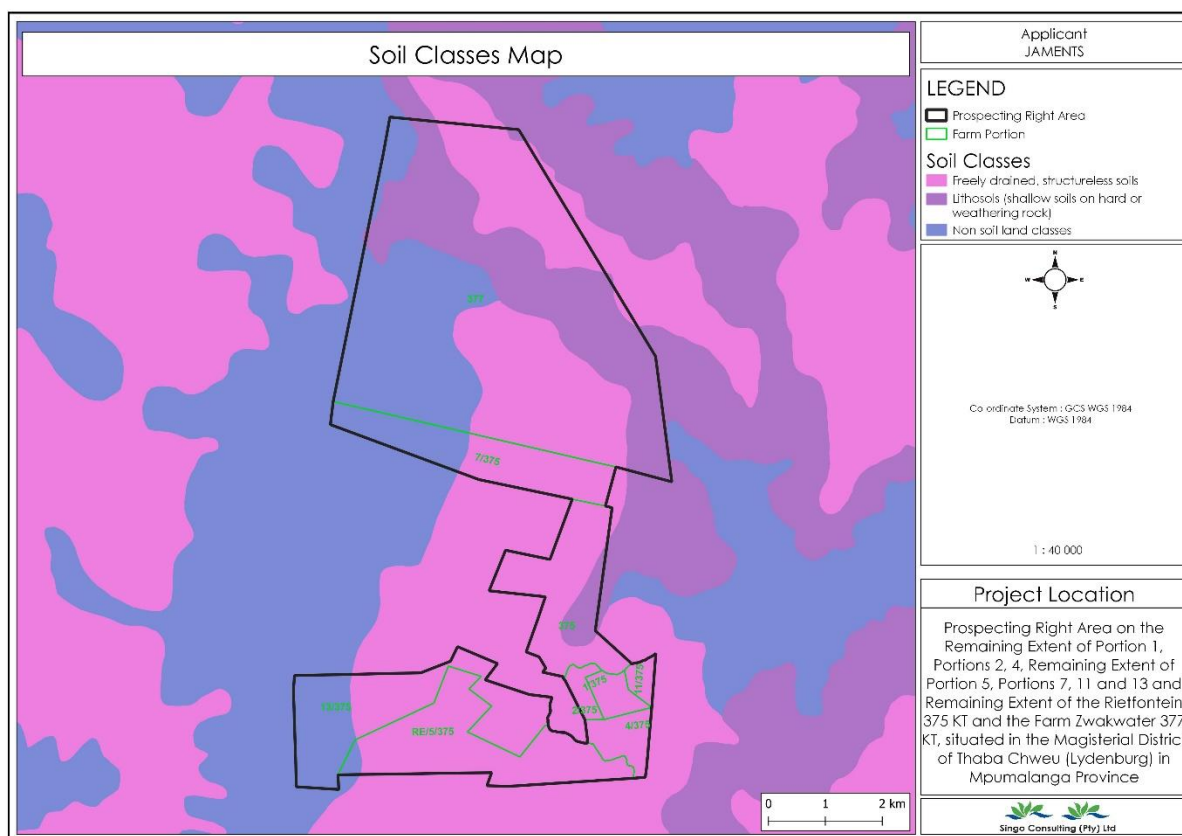
Farming type map



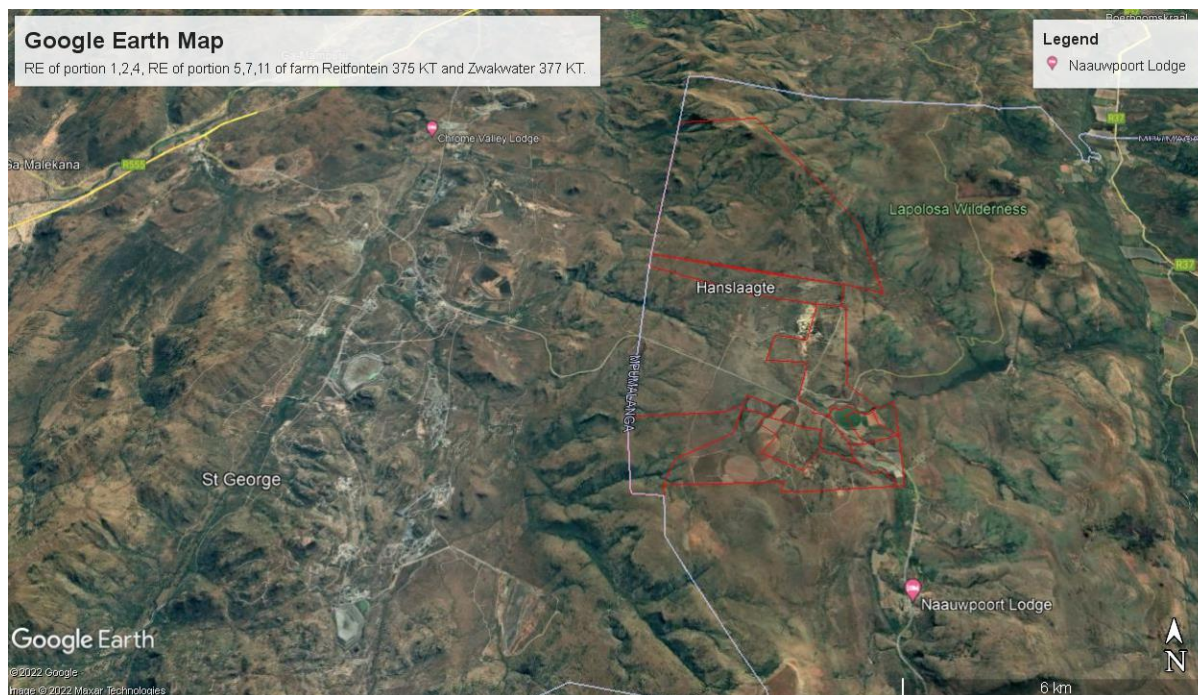
Land capability map



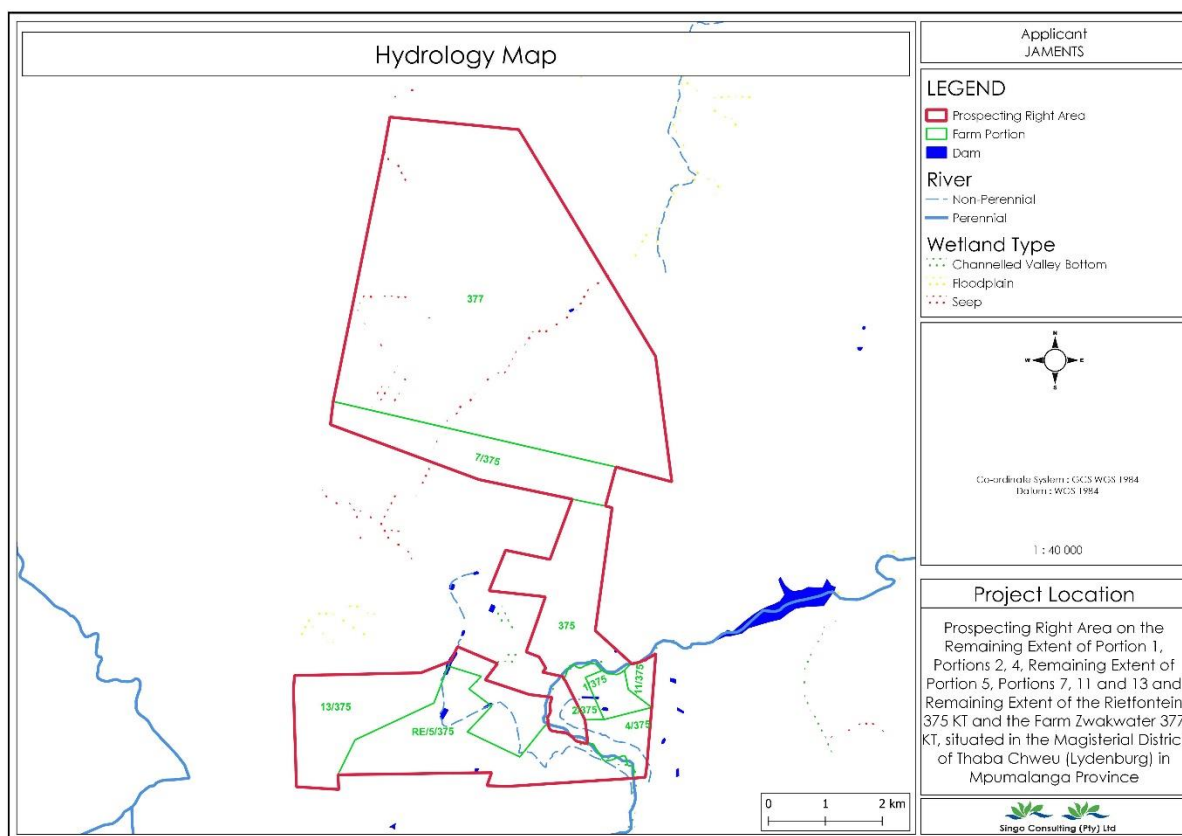
Infrastructure map



Soil classes map

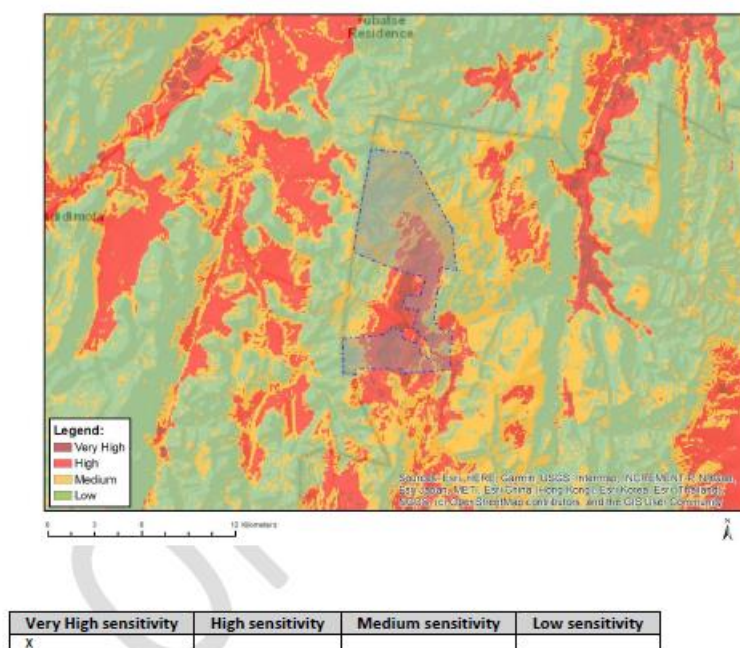


Google Earth map



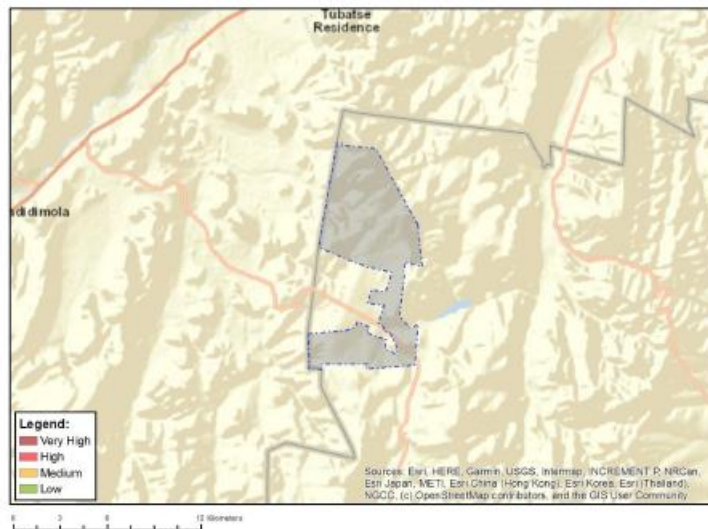
Hydrology map

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Map of relative agriculture theme sensitivity.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

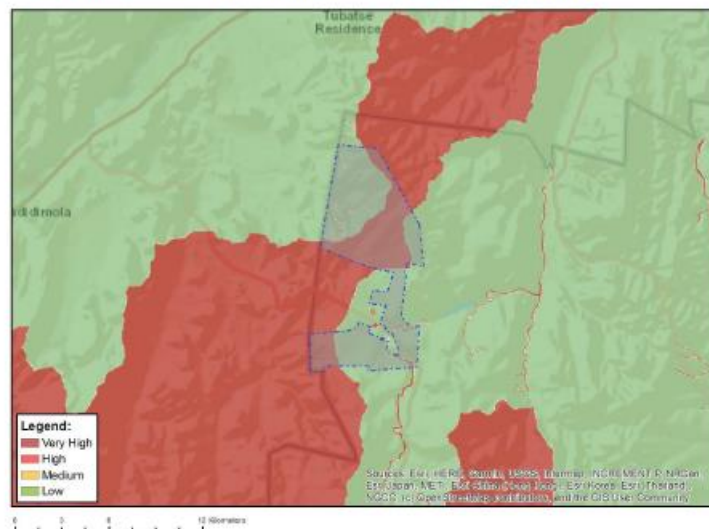


Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at biadatarequests@sanbi.org.za listing all sensitive species with their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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Map of relative animal species them sensitivity

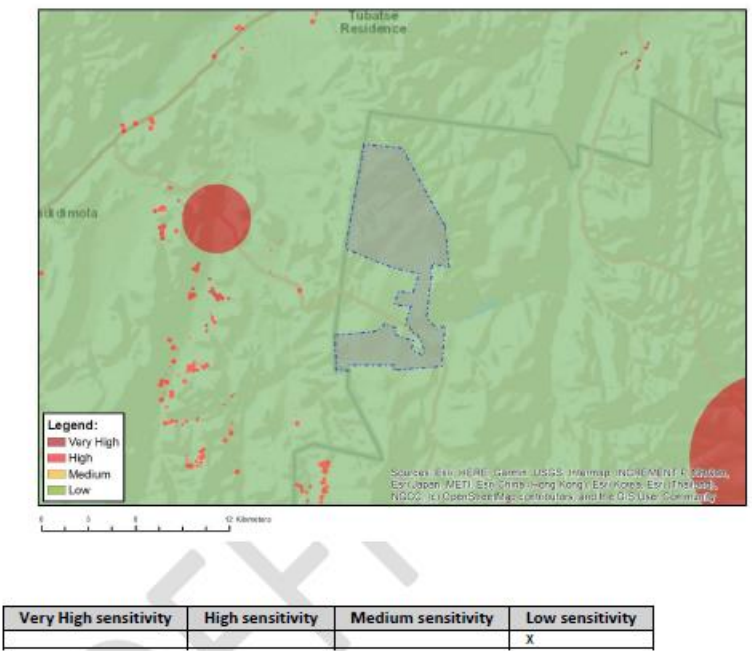
MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

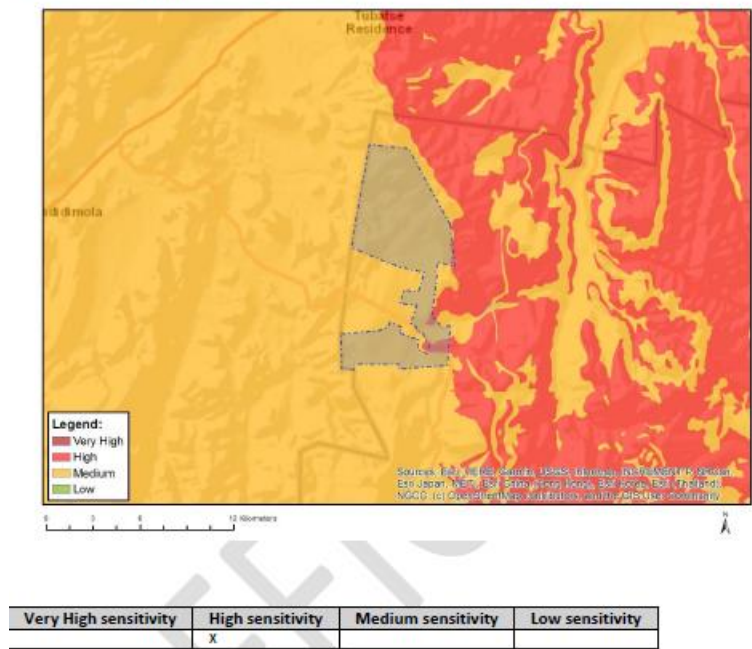
Map of relative aquatic biodiversity theme sensitivity.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



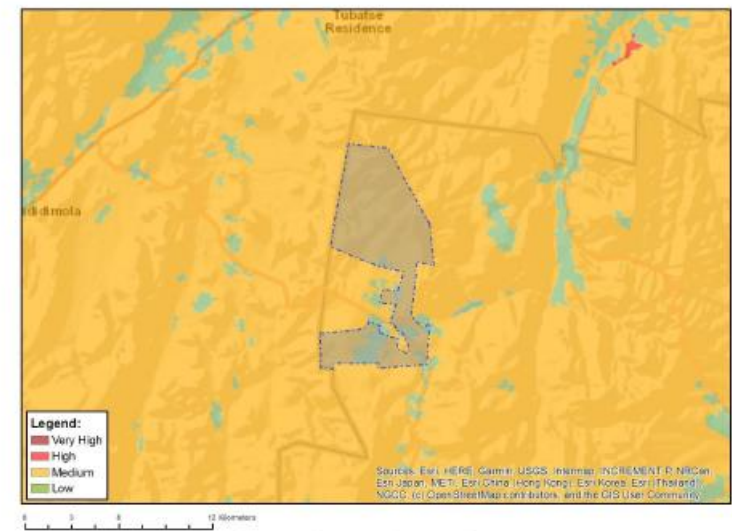
Map of relative archeological and cultural heritage theme sensitivity.

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



Map of relative paleontology them sensitivity.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY

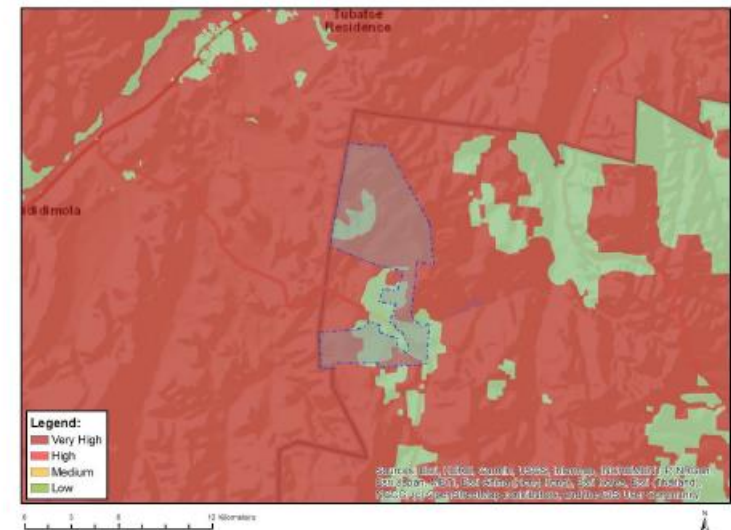


Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

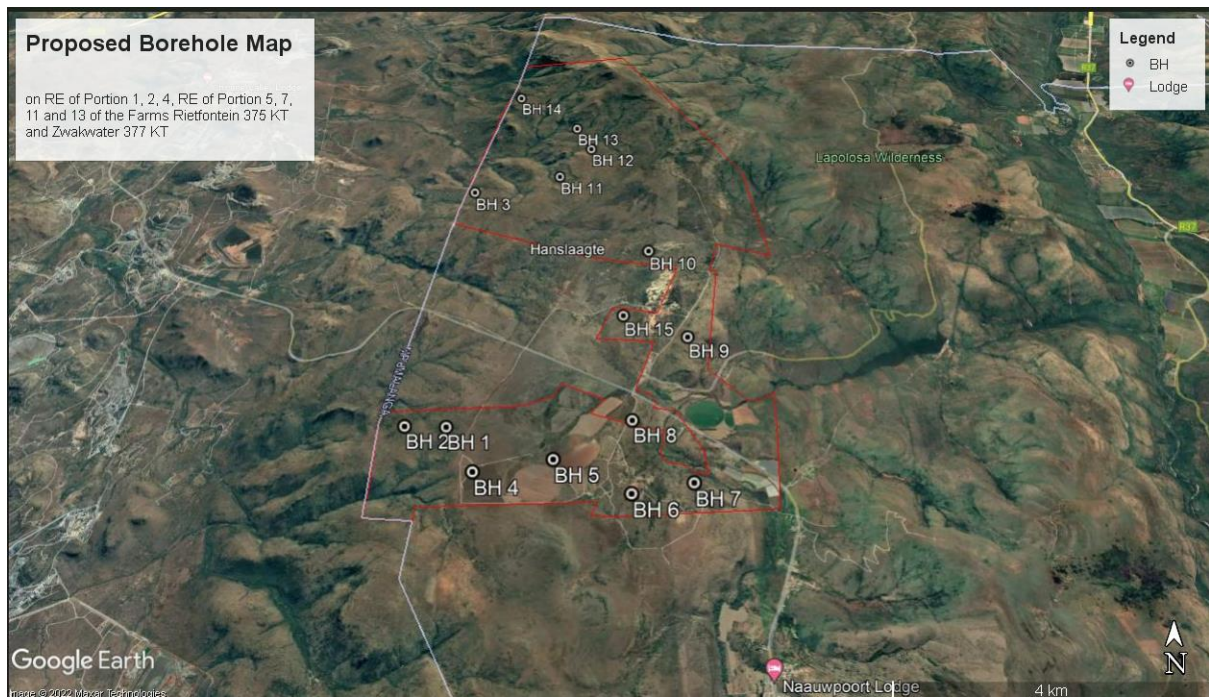
Map of relative plant species theme sensitivity.

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Map of relative terrestrial biodiversity them sensitivity.



Proposed Borehole Map

Appendix 3: Screening Report.

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

EIA Reference number: New Application


Project name: Remaining Extent, Remaining Extent of Portion 1, Portions 2, 4, Remaining Extent of Portion 5, Portions 7, 11 and 13 of the Rietfontein 375 KT and the Farm Zwakwater 377 KT

Project title: Remaining Extent, Remaining Extent of Portion 1, Portions 2, 4, Remaining Extent of Portion 5, Portions 7, 11 and 13 of the Rietfontein 375 KT and the Farm Zwakwater 377 KT

Date screening report generated: 07/03/2022 15:20:28

Applicant: JAMENTS

Compiler: Singo Consulting (Pty) Ltd

Compiler signature: 

Application Category: Mining | Prospecting rights



Singo Consulting (Pty) Ltd

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07/03/2022

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Proposed Project Location

Orientation map 1: General location

General Orientation: Remaining Extent, Remaining Extent of Portion 1, Portions 2, 4, Remaining Extent of Portion 5, Portions 7, 11 and 13 of the Rietfontein 375 KT and the Farm Zwakwater 377 KT



Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	FRISCHGEWAAGD	359	0	24°53'24.64S	30°10'1.27E	Farm
2	RIETFontein	375	0	24°57'30.03S	30°12'15.47E	Farm
3	ZWAKWATER	377	0	24°54'21.74S	30°12'23.2E	Farm
4	RIETFontein	375	2	24°58'18.55S	30°13'16.67E	Farm Portion
5	RIETFontein	375	3	24°58'32.32S	30°13'8.69E	Farm Portion
6	RIETFontein	375	11	24°58'9.42S	30°13'58.04E	Farm Portion
7	RIETFontein	375	0	24°57'13.45S	30°13'10.53E	Farm Portion
8	RIETFontein	375	1	24°58'15.89S	30°13'38.14E	Farm Portion
9	RIETFontein	375	6	24°56'57S	30°13'52.53E	Farm Portion
10	RIETFontein	375	5	24°58'49.42S	30°11'52.95E	Farm Portion
11	FRISCHGEWAAGD	359	0	24°54'8.62S	30°9'51.42E	Farm Portion
12	RIETFontein	375	7	24°55'47.45S	30°12'14.21E	Farm Portion
13	FRISCHGEWAAGD	359	1	24°52'53.76S	30°9'57.17E	Farm Portion
14	RIETFontein	375	4	24°58'46.67S	30°13'44.81E	Farm Portion
15	ZWAKWATER	377	0	24°54'17.03S	30°12'24.79E	Farm Portion
16	RIETFontein	375	6	24°56'57S	30°13'52.53E	Farm Portion
17	RIETFontein	375	9	24°56'34.56S	30°11'35.46E	Farm Portion
18	RIETFontein	375	15	24°57'8.22S	30°11'36.75E	Farm Portion
19	FRISCHGEWAAGD	359	2	24°52'6.67S	30°9'57.72E	Farm Portion
20	RIETFontein	375	13	24°58'23.25S	30°11'14.4E	Farm Portion
21	RIETFontein	375	6	24°56'57S	30°13'52.53E	Farm Portion

Development footprint¹ vertices:

Footprint	Latitude	Longitude
1	24°52'21.11S	30°11'18.09E
1	24°52'28.92S	30°12'38.95E
1	24°54'51.11S	30°14'4.8E
1	24°56'9.73S	30°14'15E
1	24°56'0.42S	30°13'39.95E
1	24°56'24.93S	30°13'33.32E
1	24°56'25.97S	30°13'37.53E
1	24°57'43.06S	30°13'26.97E
1	24°58'2.98S	30°13'48.98E
1	24°58'3.98S	30°13'49.61E
1	24°58'2.95S	30°13'54.71E
1	24°58'1.86S	30°13'56.81E
1	24°58'0.26S	30°14'0.15E
1	24°57'58.61S	30°14'3.39E
1	24°57'57.37S	30°14'4.97E
1	24°59'14.99S	30°13'58.35E
1	24°59'20.77S	30°12'31.43E
1	24°59'20.26S	30°12'18.99E
1	24°59'12.08S	30°12'21.91E
1	24°59'13.46S	30°10'45.45E
1	24°59'22.67S	30°10'46.05E
1	24°59'20.98S	30°10'19.44E
1	24°58'20.11S	30°10'17.56E
1	24°58'15.31S	30°10'17.92E
1	24°58'9.52S	30°11'37.48E
1	24°58'2.25S	30°11'56.12E
1	24°57'53.14S	30°12'0.55E
1	24°58'3.72S	30°12'25.64E
1	24°58'13.93S	30°12'17.86E
1	24°58'23.13S	30°12'45.56E
1	24°58'24.84S	30°12'59.72E
1	24°58'30.22S	30°12'58.46E
1	24°58'33.47S	30°12'58.88E
1	24°58'37.79S	30°12'56.97E
1	24°58'42.28S	30°12'57.37E
1	24°58'45.87S	30°12'59.59E
1	24°58'46.94S	30°13'7.75E
1	24°58'48.82S	30°13'11.59E
1	24°58'52.28S	30°13'15.09E
1	24°58'53.85S	30°13'21.84E
1	24°58'50.91S	30°13'22.02E
1	24°58'38.99S	30°13'20.49E
1	24°58'14.07S	30°13'7.95E
1	24°58'13.61S	30°13'7.31E
1	24°58'11.86S	30°13'6.52E
1	24°58'9.12S	30°12'53.87E
1	24°58'6.57S	30°12'55.91E
1	24°57'59.52S	30°12'51.72E
1	24°57'56.41S	30°12'43.58E
1	24°57'21.83S	30°12'55.66E
1	24°57'18.06S	30°12'20.35E

¹ "development footprint", means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

1	24°56'52.64S	30°12'30.68E
1	24°56'58.45	30°12'58.55E
1	24°56'20.61S	30°13'12.52E
1	24°56'8.35S	30°12'13.98E
1	24°55'33.87S	30°10'40.73E
1	24°55'19.42S	30°10'42.49E
1	24°52'21.11S	30°11'18.09E

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

No nearby wind or solar developments found.

Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Olifants EMF	https://screening.environment.gov.za/ScreeningDownloads/EMF/Zone_46,,_78,,_80,_92,_103,_122,_129.pdf

Environmental screening results and assessment outcomes

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

Mining|Prospecting rights.

Relevant development incentives, restrictions, exclusions or prohibitions

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

Incentive , restriction or prohibition	Implication
Strategic Transmission Corridor- International corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf

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

Project Location: Remaining Extent, Remaining Extent of Portion 1, Portions 2, 4, Remaining Extent of Portion 5, Portions 7, 11 and 13 of the Rietfontein 375 KT and the Farm Zwakwater 377 KT



Proposed Development Area Environmental Sensitivity

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

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

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

Specialist assessments identified

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

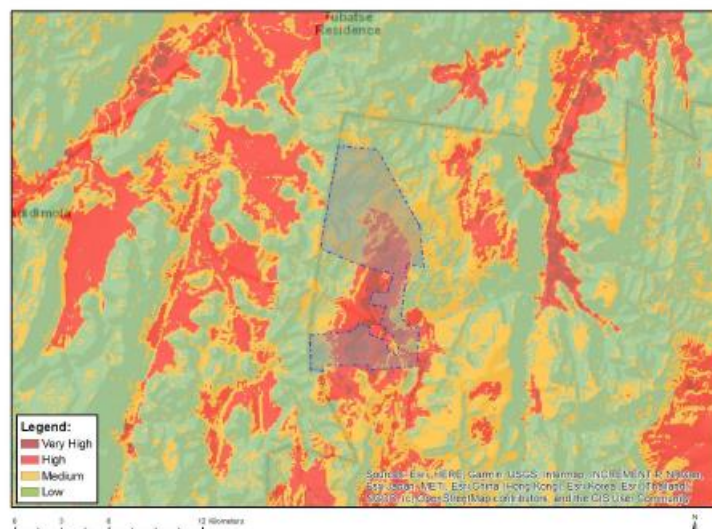
N o	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requi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

	ment	
6	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf
7	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

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

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

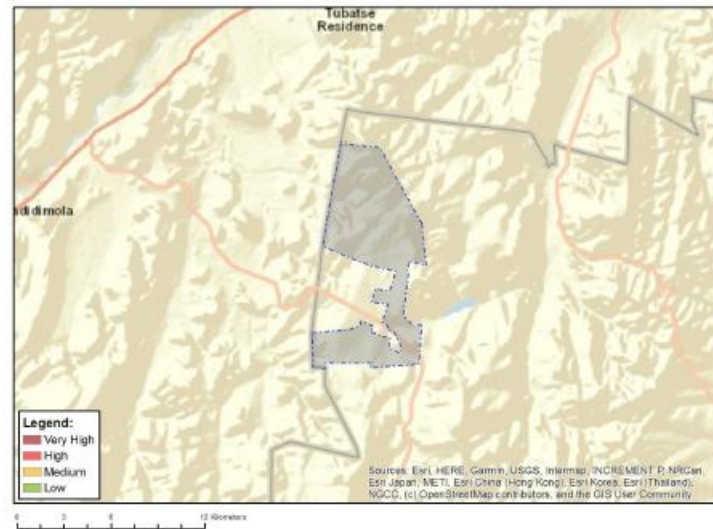
Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High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

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

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

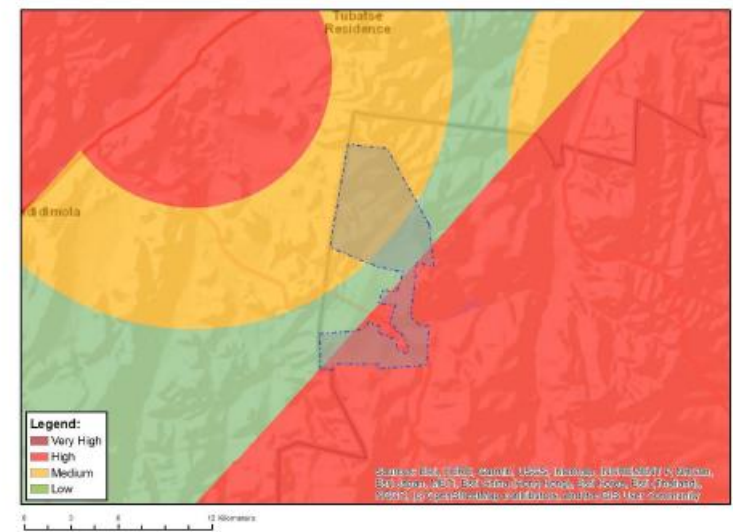
Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Circus ranivorus
High	Aves-Sagittarius serpentarius
Medium	Aves-Geronticus calvus
Medium	Mammalia-Amblysomus robustus
Medium	Mammalia-Chrysospalax villosus
Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Dzysymys robertsii
Medium	Mammalia-Hydrictris maculicollis

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MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Dangerous and restricted airspace as demarcated
Low	Low sensitivity
Medium	Between 8 and 15 km of other civil aviation aerodrome

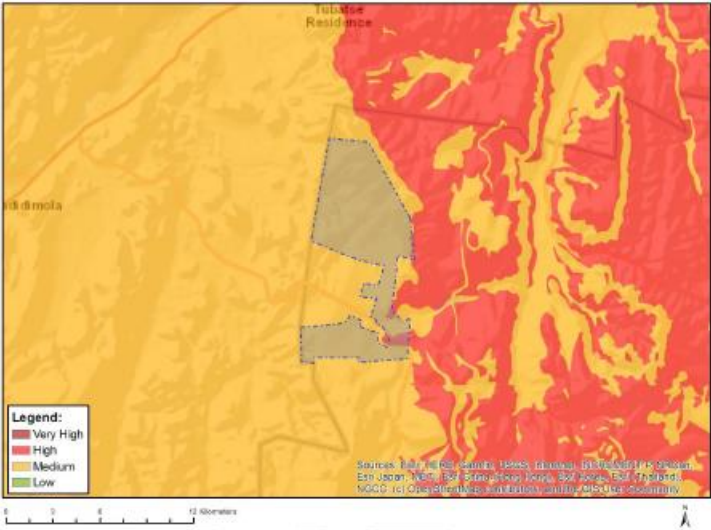
[illegible]

Sensitivity Features:

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MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

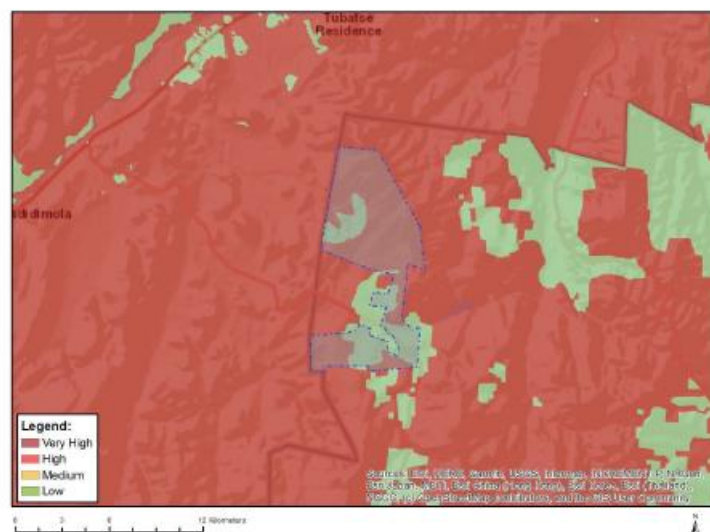
Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Low	Features with a Low paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity

[illegible]

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 587
Medium	<i>Polygala sekhukhuniensis</i>
Medium	Sensitive species 1167
Medium	<i>Searsia batophylla</i>
Medium	<i>Searsia sekhukhuniensis</i>
Medium	<i>Combretum petrophilum</i>
Medium	Sensitive species 691
Medium	Sensitive species 998

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY




Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Critical biodiversity area 1
Very High	Critical biodiversity area 2
Very High	FEPA Subcatchments
Very High	Endangered ecosystem
Very High	Protected Areas Expansion Strategy

Appendix 6: Financial Provision.

Applicant: Evaluator:		 JAMENTS CONSTRUCTION PROJECTS		CALCULATION OF THE QUANTUM <div> Ref No.: MP30/5/1/1/2/ 17297 PR Date: 02-Sep-22 </div>			
		Abel Mojabelo					
No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	9622,12	49	0,03	1	14144,5164
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,1	1	13512,42
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		27656,9364
1	Preliminary and General		3318,832368	weighting factor 2		1	3318,832368
2	Contingencies			2765,69364	Subtotal 2		2765,69364
					VAT (15%)		5061,22
					Grand Total		38803

Singed: Abel Mojabelo
Date: 02/09/2022

Appendix 4: Impact Management Outcomes.

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

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				compliance of the construction workers and employees on site with the EMPr and ensure their co-operation.	
	Permits and Permissions		Planning	Thaba Chweu Local Municipality must ensure that all licensing, permits or certificates required for the project are obtained and in place prior to the commencing of any construction activities on site.	MPRDA & NEMA
	Emergency Response Planning	Safety and health personnel on site	Planning	Plan all emergency responses including: <ul style="list-style-type: none"> • Response procedures to fires, explosions, or any accidents that will require rapid medical responses; and • Responses to community and stakeholder concerns and communication procedures with potentially affected parties (I&AP). 	MPRDA & NEMA
	Project Schedule	Undertaking the project in a timeous manner	Planning	Plan and develop a construction sequence to alleviate noise generation during the construction phase.	N/A
	Method statement	Project Management	Planning	Ensure that a method statement has been compiled and submitted to the Site/Construction manager.	N/A
	Grievances	Project Management	Planning	Develop grievance mechanisms for the recording and management of complaints	N/A

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				and grievances specifically including (but not limited to) grievances from those living in the area.	
	Records and Administration	Project Management	Planning	<p>Ensure the following are up to date and available on site:</p> <ul style="list-style-type: none"> • A complaint registers. • An approved method statements. • Copies of the EMPr. • Environmental Permits and authorizations. • Copies of weekly checklists, compliance reports, incidence reports and corrective action reports. • Photographs of areas of concern (photos of non-compliance areas as well corrective action). • Attendance registers of environmental awareness training. 	
	Recruitment of Labour	Project Management	Planning	<ul style="list-style-type: none"> • Where possible, the contractor must make use of local labour in support of the local economy. • Advertise employment opportunities adequately, so as not to limit application opportunities. • Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria. 	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
PRE-DRILLING/EXPLORATION					
	Site establishment	Project Management	Planning	<ul style="list-style-type: none"> The Contractor must, in agreement with the Construction Manager, decide upon an area for the location of a construction camp. The construction camp should be properly demarcated and fenced, and be adequately sized, with enough space for site offices, construction vehicles, equipment, material and waste storage areas The construction camp must be located in an area with minimal damage or disturbance to the environment. Establish 'NO-GO' areas- where no construction personnel, equipment/machinery or vehicles are permitted. Any identified Environmental Sensitive or important areas should be designated as 'NO-GO' areas. 	
	Site Housekeeping	Project Management	Planning	<ul style="list-style-type: none"> The construction camp should always be kept clean and orderly. 	
	Ablution Facilities	Project Management	Planning	<ul style="list-style-type: none"> Enough toilet facilities should be provided near construction camp. The toilets should be properly covered and ventilated and should contain hand 	

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

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				corrective action).	
	Visual	Visual intrusion	Construction/ set-up	<ul style="list-style-type: none"> Attendance registers of environmental awareness training. 	N/A
	Traffic	Increase in traffic volumes near the drilling site	Construction/ set-up	<ul style="list-style-type: none"> Traffic signs to be put around the site to notify motorist of the activities Construction vehicles to make trips on/off site only when necessary Construction vehicles to adhere to local speed limits as far as possible when driving in around site 	National Traffic Act Regulations
	Signage	Traffic volumes, safety	Construction/ set-up	<ul style="list-style-type: none"> The construction management needs to communicate the commencement and duration of construction activities to the community. Clear signage needs to be put up to make and keep the community awareness of construction activities to prevent any hazardous occurrences. Provide adequate safety warning signage on the roads. 	National Traffic Act Regulations
	Dust fall	Dust fall and nuisance from activities	Construction/ set-up	<ul style="list-style-type: none"> Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations; Separation of distance of minimum 100m, 	GN R. 827 (NEMAQA)

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>to be maintained between drill sites and dwellings; and</p> <ul style="list-style-type: none"> • Low vehicle speeds will be enforced on unpaved surfaces. 	
	Soil and vegetation	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.	Construction/ set-up	<ul style="list-style-type: none"> • The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. • Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and • Disturbed areas will be re-vegetated with locally indigenous species as soon as possible. 	NEMBA
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will	Construction/ set-up	<ul style="list-style-type: none"> • Environmental awareness training sessions should be part of the workers' induction and site workshops; and • If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of an animal specialist 	NEMBA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		keep the animal life away from the site while the prospecting is ongoing.			
	Social	Friction between local residents/land owners and construction personnel	Construction/ set-up	<ul style="list-style-type: none"> • All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution; • All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the • prospecting activities in the area; • There will always be a strict requirement to treat residents with respect and courtesy. 	NEMA
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	<ul style="list-style-type: none"> • No mitigation measures required. 	NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Storage and Disposal of Waste	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices	Construction/ set-up	<ul style="list-style-type: none"> Litter generated by construction workers must be collected in containers that are clearly labelled and disposed of weekly at registered waste disposal sites. Enough weather- and vermin- proof bins should be placed on site for the disposal of solid waste. Littering on site should be strictly prohibited. The burning of waste on site should also be prohibited. All waste generated from construction activities (building rubble, solid and liquid waste etc.), should be disposed of as frequently at an appropriately licensed refuse facility. Minimize waste generation, e.g. by providing re-usable items and refillable containers (e.g. for drinking water) and adopt a 'cradle to grave' responsibility for wastes. Comply with legal requirements for waste management and pollution control and employ "good housekeeping" and monitoring practices. 	National Waste Act
	Hazardous Waste	Safety and aesthetic/ visual aspects	Construction/ set-up	<ul style="list-style-type: none"> Any hazardous waste that may be generated should be separated from general waste and stored in clearly 	National Waste Act

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

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		of the receiving environment and ensuring that the ground is not susceptible to erosion beyond that which can be rehabilitated.	set-up & Operation	<p>sediment controls are strictly implemented from the beginning of site clearing activities.</p> <ul style="list-style-type: none"> All topsoil stockpiles (if any) must be protected against wind, erosion and seeds, i.e. by use of shade cloth or netting. Topsoil stockpiles should not exceed 2 m in height. 	
PRE-DRILLING/EXPLORATION					
Exploration drilling (ve) <ul style="list-style-type: none"> Drilling Drill maintenance and refueling Core sample collection and storage Vehicle movements Waste generation and management	Noise	Noise generation	Operations	<ul style="list-style-type: none"> Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays from 08h00 – 17h00 and no activities on Sundays and public holidays. Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition. If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, 	Heritage Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				or an acoustic barrier will be erected between the source and the recipient.	
	Visual	Visual intrusions	Operations	<ul style="list-style-type: none"> The drilling rig and other visually prominent items on the site will be in consultation with the landowner; Make use of existing vegetation as far as possible to screen the prospecting operations from view; and If necessary, the operations can be screened from view by erecting a shade cloth barrier. 	SANS 10103
	Traffic	Increase in traffic volumes near the drilling site	Operations	<ul style="list-style-type: none"> Traffic signs to be put around the site to notify motorists of the activities Construction vehicles to make trips on/off site only when necessary Construction vehicles to adhere to local speed limits as far as possible when driving in around site 	N/A
	Dust fall	Dust fall and nuisance from activities	Operations	<ul style="list-style-type: none"> Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations; Separation of distance of minimum 500m, to be maintained between drill sites and 100m from dwellings; and Low vehicle speeds will be enforced on 	National Traffic Act Regulations

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				unpaved surfaces.	
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	<ul style="list-style-type: none"> The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and Disturbed areas will be re vegetated with locally indigenous species as soon as possible. 	GN R. 827 (NEMAQA)
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the	Operations	<ul style="list-style-type: none"> Measures implemented during site establishment should apply in this phase as well. 	NEMBA

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

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

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<ul style="list-style-type: none"> Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner. Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment. Dispose of all visible remains of excess material when exiting the site. 	
	Erosion protection		Rehabilitation	<ul style="list-style-type: none"> Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site. Retain shrubbery and grass species wherever possible. Perform regular monitoring and maintenance of erosion control measures. 	NEMA