REPORT

DRAFT BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

PREPARED FOR: AFLI EXPLORATION 2 (PTY) LTD

PREPARED BY: JOAN CONSULTING (PTY) LTD

REFFERENCE NO: KZN30/5/1/1/2/11351

DATE: MAY 2023

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT And ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

Name of Applicant : **AFLI 2 Exploration (Pty) Ltd**

Contact Person : **Ian Timothy Harebottle**

Cell phone : **063 586 9109**

Email Address : **ian@sa-lithium.com**

Physical address : **1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town**

Reference number : **KZN30/5/1/1/2/11351**

1. IMPORTANT NOTICE

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

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

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

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.

2. 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.

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ACRONYMS

BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
IAPs	Interested and Affected Parties
NEMA	National Environmental Management Act
MPRDA	Mineral and Petroleum Resources Development
DAFF	Department of Agriculture Forestry and Fisheries
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
BA	Basic Assessment
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
I&APs	Interested and Affected Parties
Public Participation Process	PPP

PART A:

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. Contact person and correspondence address

1.1. Applicant details

Table 1 below contain contact details of the applicant

Table 1:Contact details of applicant

Project applicant:	AFLI Exploration 2 (Pty) Ltd
Contact person:	Ian Timothy Harebottle
Physical address:	1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town
Cell phone:	063 586 9109
E-mail:	ian@sa-lithium.com

1.2. Details of EAP

Table 2 below contains the contact details of the Environmental Assessment Practitioner (EAP) who prepared and the Principal Environmental Assessment Practitioner who reviewed and sign off this Basic Assessment Report and Environmental Management Programme respectively.

Table 2: Details of EAP

Consultant Name:	Joan Consulting (Pty) Ltd
Report compiled by:	Mukwevho meriam meriam@joanprojects.co.za
Report reviewed and approved by (Principal EAP):	Lufuno Mutshathama lufuno@Joanprojects.co.za 073 912 0800
Postal address:	P O Box 4147, Honeydew,2040
Physical address:	09 Lourie Road, Randpark Ridge, Randburg, Johannesburg
Telephone:	011 791 5032
Fax:	086235 5142

1.3. Expertise and qualifications of the EAP

Table 3 below contains the expertise, experience, and qualifications of the Environmental Assessment Practitioner (EAP) who prepared and the principal environmental Practitioner who reviewed and sign off this Basic Assessment Report and Environmental Management Programme respectively.

Table 3: Qualifications and experience of the EAP

Name of the EAP	Experience
Mukwevho Meriam (EAP in training)	
Lufuno Mutshathama	The EAP (Lufuno Mutshathama) holds a Bachelor of Environmental Science from the University of Venda. She is a certificated natural scientist with the South African Council of Natural Scientific Professionals (SACNASP Reg: 114437). She is also registered with the Environmental Assessment Practitioner Association of South Africa (EAPASA Reg.2019/1789). Lufuno Mutshathama has over 14 years of experience in the field of Environmental Management, having worked largely in South Africa's mining sector. She worked 3 years as an environmental officer at the Department of Mineral Resources, 2 years as a group Environmental Manager in the mining sector and just over 9 years in environmental consulting as Founder and Managing Director of Joan Consulting. Her field of expertise includes the compilation of Environmental Impact Assessments and EMPr, environmental auditing and stakeholder engagement.

2. Location of the overall activity

Table 4 below contains farm names and portions number. The project Farm portions are located within the Magisterial District of Port Shepstone, KwaZulu-Natal. The site is located approximately 76km South-West of Durban and approximately 42km North of Port Shepstone. A locality map is attached on the overleaf page as figure 1.

Table 4: Details of project farms

Farm name	Portion number
Farm Cyrilsford 4218	1
Farm Cyrilsford 4218	4
Farm Cyrilsford 4218	6
Farm Cyrilsford 4218	7
Farm Cyrilsford 4218	24
Farm Cyrilsford 4218	25
Farm Cyrilsford 4218	RE
Mgai 16801	14
Mgai 16801	15

Mgai 16801	17
Mgai 16801	18
Lot A Ifafa 3833	RE
Blake 4212	RE
Deverell's Peak 4214	RE

2.1. Property description

Table 5: Property Description

Application area (Ha)	1313 ha
Magisterial district:	Port Shepstone
Local Municipality	Umdoni Local Municipality
District Municipality	Ugu District Municipality
Distance and direction from the nearest town	Approximately 76km South-West of Durban and approximately 42km North of Port Shepstone

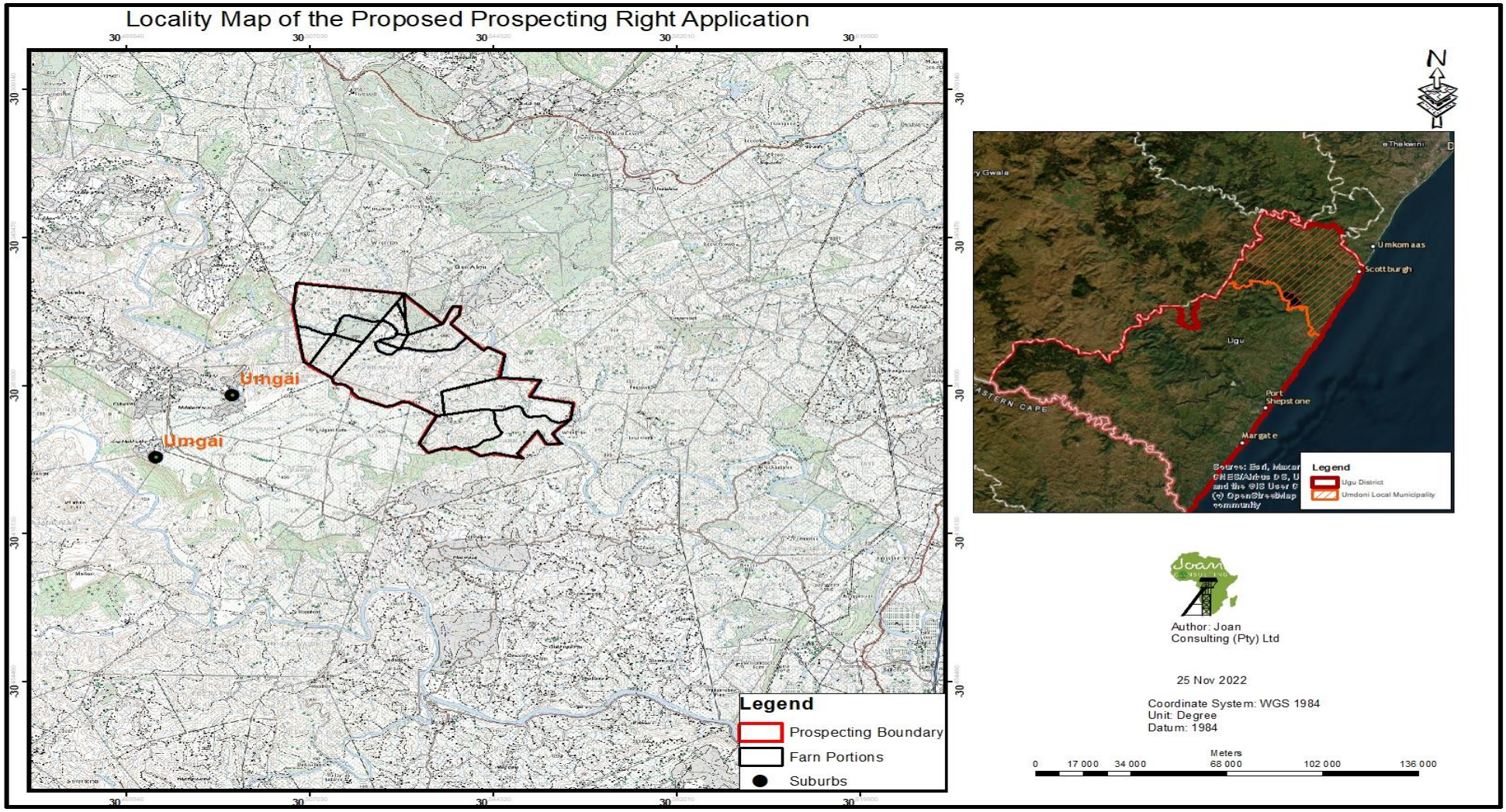


Figure 1: The locality map of project farms.

3. Description of the scope of the proposed overall activity.

AFLI Exploration 2 (Pty) Ltd is applying for a prospecting right with the competent authority, the Department of Mineral Resources and Energy (DMRE) KwaZulu-Natal region on the properties listed in **table 5**. The prospecting right is set to explore the following mineral reserves, Lithium, Feldspar, Tin, Tantalum, Zinc, and Dimension stones. The area has previously mined before, geophysical studies indicate the potential presence of the minerals, and an Environmental Authorisation (EA) is needed for the exploration process. The prospecting right application is conducted in terms of the Environmental Impact Assessment Regulations, 2014 (as amended) promulgated in terms of the National Environmental Management Act (Act No. 107 of 1998). Refer to **table 6** for proposed activities and associated legislature.

The following activities will be undertaken on site including associated infrastructure as part of the site establishment.

- Diesel power source vehicles and machineries will be used for the proposed activities.
- There are currently existing roads that give access to the proposed site. In areas where it's problematic or with no access at all, temporary roads will be established (through trucks moving through the bush, not bush clearing).
- It is mandatory under the health and safety act that ablution facilities are made available where people will be undertaking any activities. Chemical toilets will be erected on site for the sanitation purposes.
- Temporary contractor's yard will be erected on site and will entail site offices, ablution facilities as well as parking areas. No workers will stay on site.
- Storage and handling of hydrocarbons which is limited to fuel (diesel) and a minimum of less than $30m^2$ will be stored on site powering the machineries.
- Water for prospecting purposes will be brought to site. Portable water for contractors will be provided and will be stored on site in a tanker of 12 000 litres capacity.

It must be noted that the site plan is subjected to change depending on the findings of the desktop study, geophysical and geochemical surveys to be undertaken as part of the prospecting activities. Project maps are also attached as appendix B of this report.

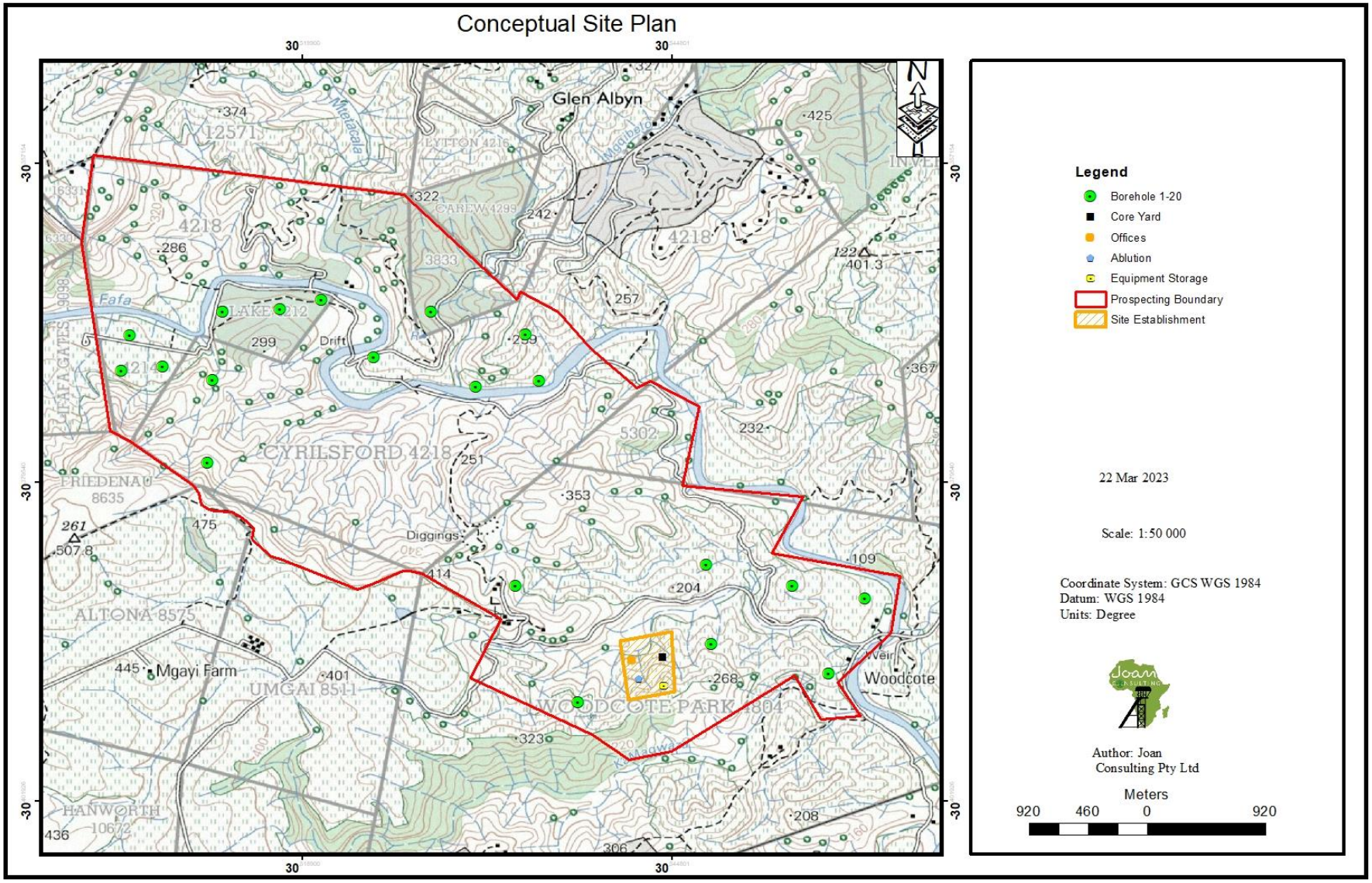


Figure 2: Conceptual Site Plan

4. Listed and specified activities

Section 24 of the NEMA requires that activities which may impact on the environment must obtain authorisation from the relevant authority before commencing with the activity. Such activities are listed under Regulations Listing Notice 1 Government Notice (GN) 327, Listing Notice 2 GN 325 and Listing Notice 3 GN 324 of NEMA- as amended in April 2017.

The project triggers notice Listing 1 hence basic Assessment Report and Environmental Management Programme is undertaken for the proposed development. Please refer to Table 6 for details of the listed activities triggered.

Table 6:NEMA triggered activities.

NAME OF ACTIVITY **E.g. For prospecting** - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc**.**	**Aerial extent of the Activity Ha or m²**		**LISTED ACTIVITY** Mark with an X where applicable or affected.	**APPLICABLE LISTING NOTICE** (GNR 544, GNR 545 or GNR 546)
• Establishment of Drill site (Drilling) 10m x 10m=100 m² • 100 m² X 20 Boreholes = 2000 m²	2000 m²	0.2ha	X	Activity 20 - GNR R327 of 2017
Site Establishment • Workshop Area • Storage Yard • Ablution facility	2000 m²	0.2ha	X	Activity 20- GNR R327 of 2017
Access road (Existing)	_	_		N/A
Water Sump	$8m^2$ x $8m^2$ x 20 holes	0.032ha		N/A
Total Vegetation removed	4032 m²	0.432ha		Activity 20 - GNR R327 of 2017

5. Description of the activities to be undertaken

5.1. Project overview

The project to be undertaken is for a prospecting right. The prospective minerals to be explored or prospected are Lithium, Feldspar, Tin, Tantalum, Zinc, and Dimension stones. The site is located approximately 50km South-West of Durban and approximately 70km North of Port Shepstone town. The extent of the prospecting area is approximately 1313 hectares. geologically, the significant mineralized quantities of spodumene on the pegmatoidal bodies form part of a suite of suite of the sub-concordant, predominantly aplitic sills which intruded high grade mafic gneisses.

5.2. Non-invasive activities: Desktop Studies

- Available reports and publications pertinent to the geology of the area will be reviewed.
- Geological field mapping to be conducted in areas identified by the desktop study.
- The results of the mapping will be used for geochemical survey and geophysical study.

5.3. Invasive activities to be Undertaken.

- Soil samples will be taken for laboratory analysis; quantity of the samples will depend on the exploration geologists. The soil samples will be assessed for Lithium, feldspars, Tin, Tantalum, dimension stone and Zinc.
- **Initial drilling:** This will comprise of about Twenty (20) boreholes up to 200m each to test the targets identified through mapping, geophysical and geochemical studies. An inferred resource may be calculated at this stage should the drilling results prove promising.
- **Infill drilling:** Should initial drilling show encouraging intersections, infill drilling of about Twenty (20) more boreholes will be drilled to bring the resource up to an indicated category. Resource modelling, and mineralogical studies may be undertaken at this stage, and these results may be incorporated into a pre-feasibility study.

5.4. Feasibility studies

- **Pre-Feasibility Study:** Should a significant resource be identified, and should mineralogical testing yield encouraging results, a Pre- feasibility study may be carried out.
- **Bankable Feasibility Study:** After the description of the general exploration process, they compile the results of other feasibility results and combine the information that is required for the permits, environmental impacts, and mine closure plans. This will be used as a full analysis to present the project to the Bank or investors for funding.

6. Policy and Legislative Context

Table 7: Legislature applicable for the project listed activities.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does the development comply and respond to the legislation and policy
National Environmental Management Act, Act 107 of 1998 (NEMA)	This act has been applied throughout the entire document as it applies to Environmental Authorisation Application	The prospecting right application requires a Basic Assessment to be Conducted in terms of the NEMA Regulations of 2014 as amended in April 2017. The NEMA regulations identify DMRE as the Competent Authority and details out the Basic Assessment process to be followed. The Environmental Authorisation application has been lodged and the Basic Assessment report requirement is fulfilled by this report.
Environmental Impact Assessment (EIA) Regulations, 2014	Environmental Authorisation Application and BAR	This regulation gives guidelines to be followed in terms of the requirement by NEMA and the content of the report thereof. This report forms part of the Basic Assessment report of the EIA being undertaken and the Environmental Application has been lodged.
Mineral and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA)	This act has been applied throughout the whole document for the Prospecting Right Application	The act provides details of the procedures to be followed in applying for or renewing mining and prospecting rights and permits and for the closure of mining operations as provided and described in the Mineral and Petroleum Resources Development Act (MPRDA). The applicant lodged a Prospecting right as per the legislation
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Prospecting Right Application	All activities covered by this application will avoid any identified heritage resource to prevent the destruction or unsympathetic alteration of heritage resources that have either Formal or General Protection.
National Water Act (NWA), Act 36 of 1998 as amended	Prospecting Right Application	Application for a water use licence for all water associated activities

Applicable legislation and guidelines used to compile the report	Reference where applied	How does the development comply and respond to the legislation and policy
National Environmental Management: Air Quality Act. Act 39 of 2004 (NEM: AQA) – National dust control regulations	Prospecting Right Application	No permitting or licensing is required for this legislation; however, the Dust Control Regulations describe the measures for control and monitoring of dust. These regulations will be adhered to during the operation.
National Environmental Management: Waste Act (NEM: WA), Act 59 of 2008	Prospecting Right Application	Generated waste will be disposed as guided by the environmental management programme.
The Mine Health and Safety Act, 1996 (No 26 of 1996)	Prospecting Right Application	The Mine Health and Safety Act, 1996 (No 26 of 1996) provides for the protection of health and safety of employees and other persons at mines and serves-

7. Need and desirability of the proposed activities.

The proposed activities for the prospecting right, permits surveying of the geographical location to identify actual or probable mineral deposit. Prospecting will confirm the presence/absence of the following minerals: Lithium, Feldspar, Tin, Tantalum, Dimension stones, and Zinc on the identified site. Prospecting will provide few job opportunities for the local community. The project has a potential for long term job security benefits.

Depending on the findings of prospecting activities and should the feasibility study prove to be positive, then ALFI Exploration 2 (Pty) Ltd project will potentially be converted (through appropriate processes and applications) to a mining right project which will in turn positively contribute to the socio-economic development of the nation through job creation and stimulating the growth of surrounding communities and local business expansion.

Brine (saline groundwater), pegmatites (hard rock), and sediments are three different forms of mineral formations that include lithium (Li), a light, soft silver-white metal. Only a few deposits can be economically extracted because the contained lithia concentration is typically low.

Due to an overreliance on fossil fuels for energy supply, the Earth is experiencing climate change, which is causing global warming. This shift is being brought on by the effects of human activity on the planet. Planning and implementation of the global switch from fossil fuels to renewable energy sources have started. To address the challenge of climate change, energy transition will require switching from fossil fuel power generation to renewable power installations and using lithium batteries.

Internal combustion engine (ICE) vehicles are being phased out in favour of battery-powered electric vehicles worldwide. Due to the need to transition from fossil fuels to renewable energy sources, the demand for lithium will rise in contemporary technological culture.

8. Motivation for the overall preferred site, activities, and technology alternative

The proposed site for ALFI Exploration 2 (Pty) Ltd was selected based on the underlaying geology of the area. The information on the geology of the area was gathered, and suggest possible deposits of the following minerals, Lithium, Feldspar, Tin, Tantalum, Dimension stones, and Zinc. The geology of the area contributed greatly to giving the insight of the preferred site.

An environmental authorisation will allow ALFI Exploration 2 (Pty) Ltd to survey or investigate the site and identify an actual or probable mineral deposit. Data obtained from prospecting activities be necessary for the determination and modelling of the resource viability, as well as planning of the mine. The diamond core drill is the preferred technology for this proposed project because it is cost efficiency as well as well as their limited environmental footprint.

9. Full description of the process followed to reach the proposed preferred alternatives within the site.

9.1. Details of the development footprint alternatives considered.

There are multiple properties on the proposed project site, please refer to **table 4** for details. The extent of the prospecting area is approximately 1313 ha. Site selection was based on suspected availability on mineral reserves. There are various land use activities taking place within the project site, such activities include farming, and heritage sites, quarry, and farmhouse.

9.2. The type of activity to be undertaken.

The prospective minerals to be prospected are Lithium, Feldspar, Tin, Tantalum, Zinc, and Dimension stones. Exploration will be conducted using a drill rig for digging pits, auger for collecting soil samples, pickup trucks for transporting the samples, core trays for storing and transporting of core samples, and safety apparels for protection.

9.3. The design or layout of the activity

The preliminary layout has been designed in such a manner to avoid any potential sensitive areas, to minimize access away from existing farm tracks and to minimize impacts on existing activities. The exact access routes required will only be available once the final locations of the boreholes have been established, however due to the availability of routes on site, minimal routes will be required.

9.4. The technology to be used in the activity.

A drilling method of prospecting will be used. This prospecting method is considered to have a low environmental impact if managed correctly. This method of prospecting is efficient and preferrable. The bulk sampling alternative/or additional method of prospecting was assessed and was found to be not cost effective and not very environmentally friendly and that if avoided, the desired results will still be obtained.

9.5. The operational aspects of the activity; and

The extent of the prospecting area is approximately 1313 ha; however, the prospecting site alternatives are limited to the potential location of the minerals. Therefore, the sites of the proposed drill holes are based on the potential for the high grade of minerals of interest. Alternatives sites may still be determined after the desktop studies and geo-physical surveys have been completed.

9.6. The option of not implementing the activity.

Should a prospecting right not be granted, this means that the site will remain in its current state and there will be no impacts on the social and biophysical environment. However, the option of not implementing the activity means the mineral reserves will not be exploited, thus economic stimulation of the community through job creation will be lost. Economic activities which promote social aspects such as improving of infrastructure

(roads) and improving lives of community members will not be realised as the chance of applying for a prospecting right will be lost.

10. Details of the Public Participation Process (PPP)

Public participation process is a process that is designed to provide project information to Interested & Affected Parties (I&APs) and to enable them to voice their opinions, concerns, comments, or objections.

10.1. Objectives of the PPP:

Public participation is undertaken for the following reasons.

- To provide Interested and Affected Parties (I&APs) with sufficient and correct information to assist them to raise comments and make recommendations which are included in the Environmental Impact assessment process.
- To provide I&APs with the opportunity of suggesting ways of reducing or mitigating negative impacts of an activity and for enhancing positive impacts.
- To provide I&APs with sufficient and accessible information to assist them to Contribute local/indigenous knowledge to the process.
- To advise I&APs of the outcome of the environmental authorisation (i.e., DMRE decision), and the appeals process and procedure.

10.2. Tasks to be undertaken for the PPP.

This section of the report provides an overview of the tasks undertaken for the PPP.

- Formal notification of the application to key I&Aps
  Notification letters were distributed to all available landowners on site and MdoniMunicipality also receive a notification letter.
- Consultation and correspondence with I&APs and Stakeholders and the addressing of their comments.
  See attached Appendix.
- Newspaper adverts.
  Newspaper advert was advertised on (Date). It was published in English and Izulu to accommodate all interested and affected parties**.**

10.2.1. Identification of key Interested and Affected Parties.

Possible I&APs were identified guided by EIA regulations, these stakeholders are informed and are significant contributors in project decision making. Title Deed Office database was used to gather information of the various landowners. I&APs are as follows:

- Landowners within the proposed project area
- National, Provincial, Local Government:

-Land Claims Commissioner, KwaZulu Natal

-Ward Councillor

-Umdoni Local Municipality

-Department of Economic Development, Environmental Affairs and Tourism

-Department of Agriculture, Forestry and Fisheries.

10.2.2. Stakeholder Database

All stakeholders that respond to the project notice or advert will be registered and communicated to about the project throughout the process. The compiled database will be used to ensure that all stakeholders are notified of any project progress and related changes.

A stakeholder database was compiled containing a list of Provincial Government officials, Umdoni Local Municipality, Ugu District Municipality, and interested and affected parties. All the parties in the stakeholder database are notified by email and a Draft Report was forwarded to allow interested and affected parties to put their comments.

10.2.3. Placement of site notices:

Site notices was placed in IsiZulu and English within the community of proposed project site on various visible locations such as roads and municipality. Pictures were taken as a proof. Site Notices are also attached as appendix C3.

Figure 3: Site Notice placed at Mdoni Local Municipality

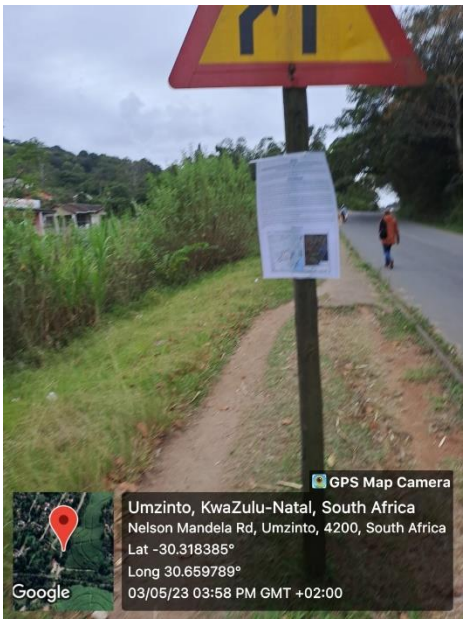


Figure 4: Site Notice Place by the Nelson Mandela Road, Umzinto

10.2.4. Media adverts

The project application was published in English and Isizulu and marketed in the local newspaper. Ugu eyethu was announced on the 10th of May 2023 in the Isizulu language, while the South Coast was advertised on the 11th of May 2023 in the English language. See Appendix C2.

10.2.5. Availability Draft Basic Assessment Report

Draft Basic Assessment Report will be sent to registered interested and affected parties for 30 days review period to raise their comments from 14 May 2023 to 12 June 2023. Comments received will be addressed on the comment and response sheet.

10.2.6. Background information document (BID)

BID with a registration and comment sheet summarising application process and impacts associated with the proposed project has been compiled. The BID contains the following:

- Share information about the proposed project
- Provide more details about the Public Participation Process (PPP) which will be followed
- Discuss the impacts and mitigation measures
- An overview of the legislative context and a description of how the BAR will be undertaken
- Contact details of the person to whom I&APs may submit their issues and concerns associated with the projects.

The background information document is attached as appendix C1 of this report.

10.2.7. South African Heritage Resources Authority (SAHRA) Consultation

AMAFA will be notified of the proposed prospecting right application

10.2.8. Meeting

A meeting that informs and engages with the landowners about the project was undertaken on 13 April 2023. The meeting was held at Kwamadlala Traditional Council Hall. Attendance registers and minutes of the meeting are attached as appendix C7 of this report.

10.2.9. Summary of issues raised by I&Aps

No comments have been received yet. Comments. Comments received from interested and affected parties has been addressed on the table below.

Table 8: I&APs summary of issues raised.

Interested and Affected Parties	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report.

11. The Environmental attributes associated with the alternatives.

11.1. Baseline Environment- Type of environment affected by the proposed activity.

This section provides environmental information which is interlinked with the proposed site. It will identify all environmental aspects within the site that will need special consideration during all the phases of the projects with the intent to minimize impacts.

11.1.1. Geology

The application area is covers rocks belonging to the Mzumbe Terrane and rocks from the Natal and Karoo Supergroups.

Margate Terrane

The oldest rocks within the Transkei terrane comprise of the Mzimkulu Group. A collection of interlayered pelitic, psammitic and minor calc-silicate gneisses (Leisure Bay Fm), dolomitic and calcitic marbles (Marble Delta Fm) and massive mafic hornblende gneisses (Macklebraes Fm). Super-crustal rocks of the Mapumulo Group comprise of the Ndonyane and Quha Formations. The former being a series of migmatitic quartzofeldspathic gneisses and the latter is a sequence of migmatitic biotite gneisses and rare amphibolites thought to be reworked volcanics and pelites. Collectively the two formations are referred to as the Mapumulo Group. The Mzimkulu Group rocks are intruded by a number of igneous suites, including early granitoid orthogneisses and later, less deformed granitoids. They are listed below from oldest to youngest:

- Sikombe granite Coarse-grained, granitic augen orthogneiss
- Vungu leucogranite Leucogranites and charnockites
- Turtle bay suite Sequence of mafic two pyroxene granulites interlayered with plagioclase-rich monzonoritic, enderbitic and charnockitic granulites
- Glenmore suite Megacrystic biotite-garnet granite/augen gneiss
- Munster Suite Mafic and intermediate granulitic orthogneiss
- Banana beach quartz diorite orthogenesis Quartz dioritic to granodioritic orthogeneiss
- Margate Suite Garnet leucogranite and charnockite
- Oribi Gorge Suite Several plutons of porphyritic granite and charnockite
- Mbizana microgranite post-orogenic biotite microgranite dykes
- Highbury pegmatite spodumene bearing pegmatite

Mzumbe Terrane

A complex association of pretectonic layered, medium to coarse grained grey gneissic tonalites, quartz diorites, trondhjemite and granodiorites that have undergone polyphase deformation, metamorphism and anatexis. The suite also includes several syntectectonic intrusive suites listed below:

- Mahlongwa Suite Porphyritic granite sheets
- Humberdale Granite Biotite granite
- Mzimlilo Suite Biotite granite
- Mkomazi Suite Garnet-biotite augen gneiss
- Equeefa Suite Metabasite

Natal Group

The Natal Group consists of two formations, each representing a tectonic cycle - a lower Durban Formation and an upper Mariannhill Formation. The former is subdivided into the Ulundi, Eshowe, Kranskloof, Situndu, Melmoth, and Dassenhoek Members, and the latter into the Tulini, Newspaper, and Westville Members. The sedimentary rocks comprising these units are greyish red, and consist of conglomerates, sandstones, siltstones, and shale.

Karoo Supergroup

The Karoo Supergroup is stratigraphically divided into five main groups, namely, Dwyka, Ecca, Beaufort, Stormberg, and Drakensberg groups, respectively. The stratigraphy of the main Karoo Basin is complex, and this complexity is related to its mode of origin and varied depositional environments such as deep-marine mudstone, shallow marine turbidite, and submarine fan deposit.

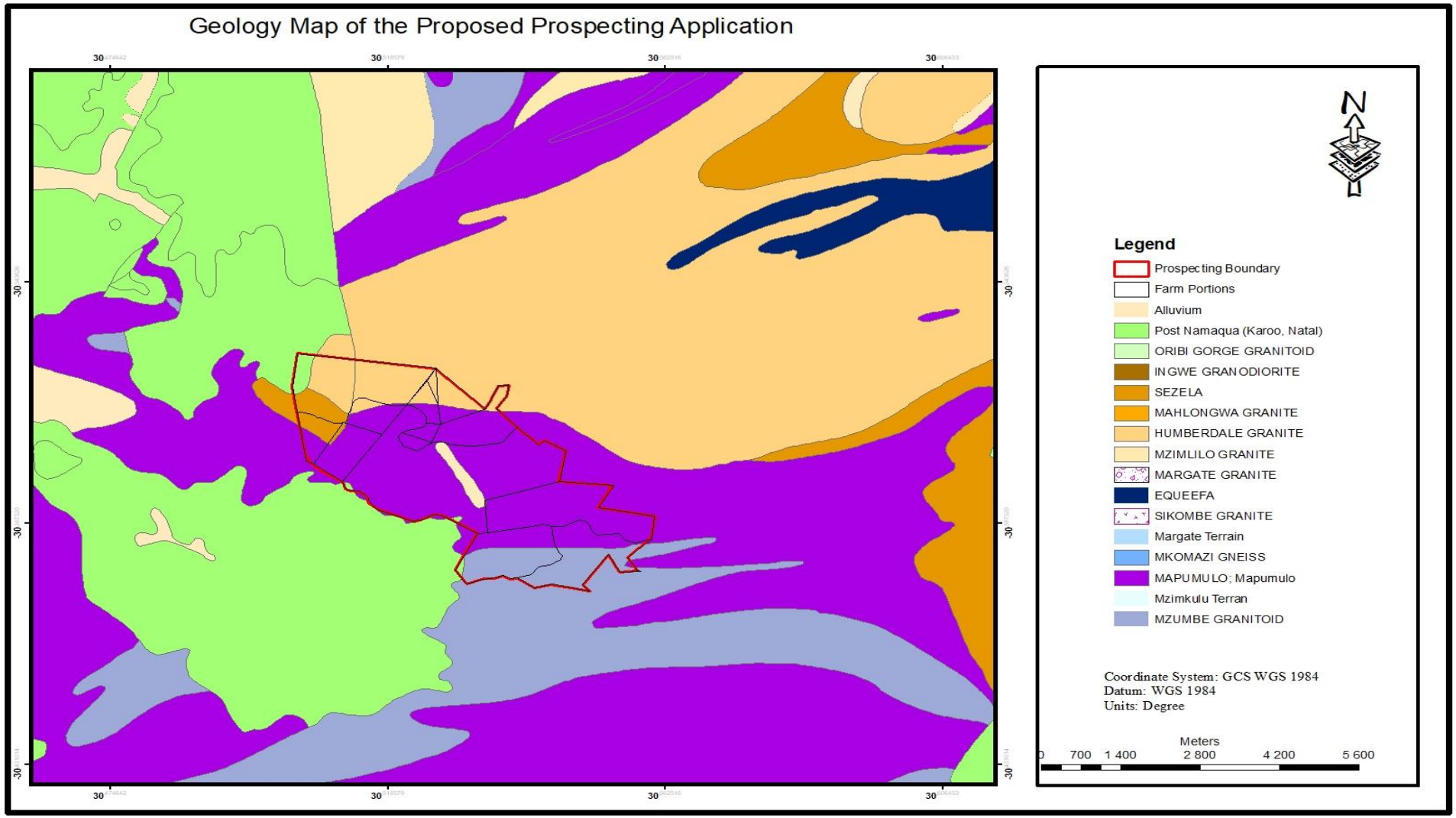


Figure 5: Geology map of the proposed prospecting application

11.1.2. Climate

The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Umdoni. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

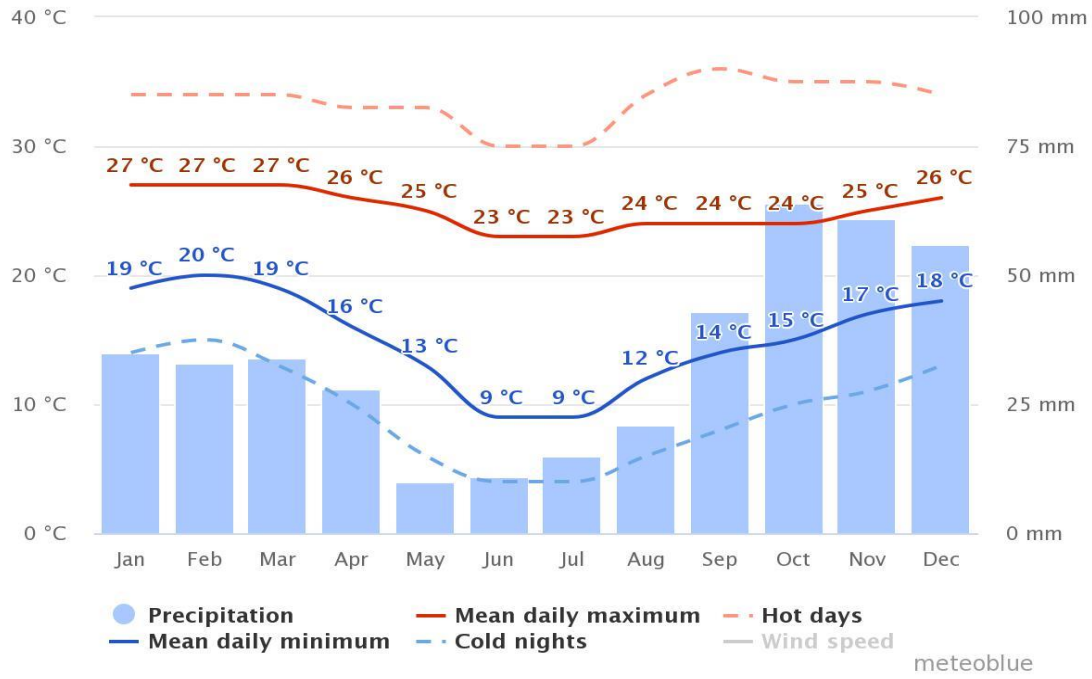


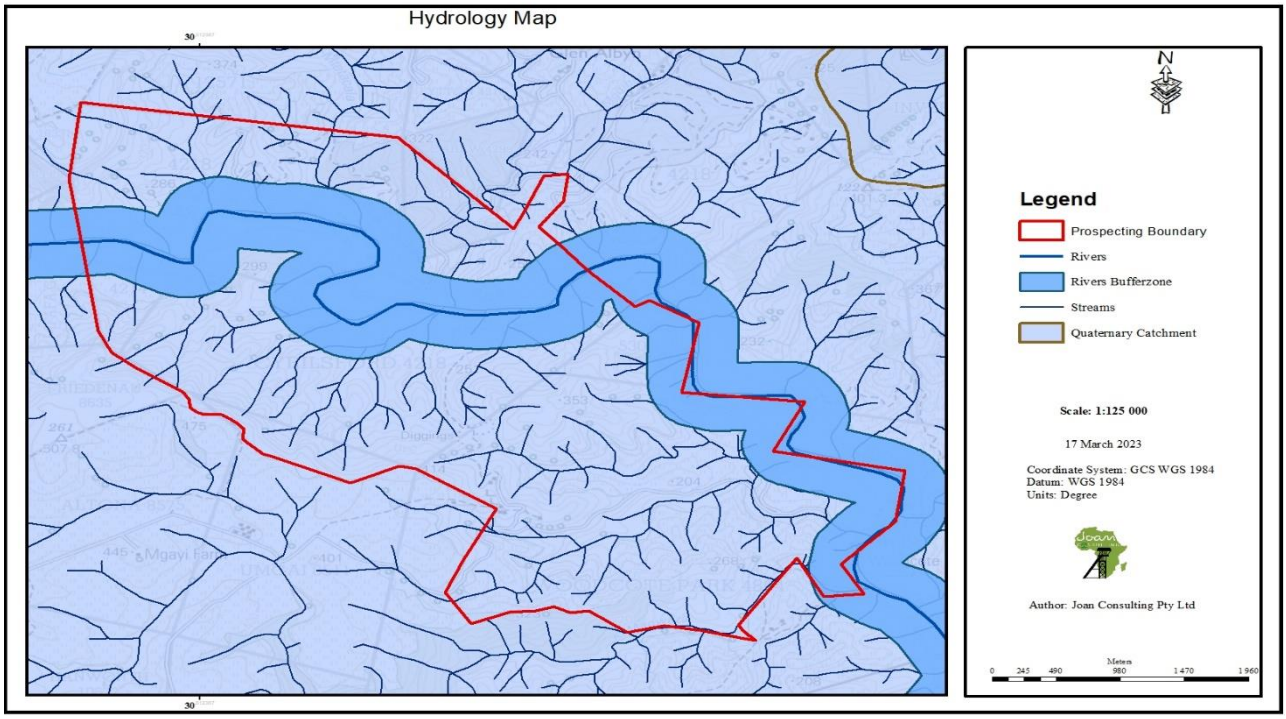
Figure 6:Average temperatures and precipitation of Umdoni, KwaZulu-Natal South Africa 30.62°S 30.54°E, 25m asl

11.1.3. Surface Water

This component of the municipality's natural environment is addressed in accordance with the catchments of the many rivers and streams that drain the area. There are either seven big surface water systems that occur in part or within the area, with the former being the more common case. There are also a handful of smaller systems that are completely confined within the municipality. The table below summarizes these systems as they go north to south. The data in this table were derived from the Ezemvelo KZN Wildlife Aquatic Conservation Plan (2007), (Umdoni Local Municipality,2021-2027).

Based on this information the project boundary area does not overlap with any true FEPA wetland areas. One FEPA River occurs within the project area, namely the Fafa River as shown in the figure 5 overleaf. The entire are is also categorised as the Fish Support Area and various non-perennial water courses which occur within the site which and ultimately feed into the Fafa River.

The FEPAs are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act



(NEM:BA) biodiversity goals (Nel et al. 2011).

Figure 7: Fafa stream and associated water bodies, Umdoni municipality

11.1.4. Biodiversity

11.1.4.1. Biome

Rutherford and Westfall (1994) described the project area as falling within the Grassland biome. The grassland biome is the second largest biome in South Africa, covering 28.4% of the country or more than 360 000 km2. The grassland biome is found in summer rainfall areas, from sea level to above 2000 m. The Grassland Biome is very rich in plants, with nearly 3800 plant species recorded. Because fires are frequent, there are very few woody plants like trees (mainly in river courses and on rocky slopes). C4 grasses dominate throughout the biome, except at the highest altitudes where C3 grasses become prominent.

In the past, grasslands were home to large herds of animals like the Black Wildebeest, Blesbok and Eland. Today these animals mainly survive in nature reserves and on game farms. Grasslands are rich in birds, many of which eat seeds, e.g. Black Korhaan, Blue Crane and Helmeted Guinea fowl. Nearly half of the original Grassland Biome has been ploughed up to plant maize,

sunflowers, sorghum and wheat. Grassland also supports livestock farming, including cattle and sheep. Most of Gauteng and the Mpumalanga highveld are found in the Grassland Biome. Much of this region has been developed for mining, industry and urban development.

The Grassland Biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome. Rare plants are often found in the grasslands, especially in the escarpment area. These rare species are often endangered, comprising mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered. The scenic splendour of the escarpment region attracts many tourists

11.1.4.2. Vegetation

The land cover in rural areas of Umdoni comprises predominantly sugar cane, bananas, and commercial forestry. Most of the remaining area is under formal and informal urban development. There are limited areas of indigenous vegetation interspersed in the commercial crop lands. Most of the rural areas of Umdoni Municipality appear to be under sugar cane production. There are relatively small areas of commercial forestry or plantation, particularly in the south of the Municipality. Banana production also occupies a relatively small area of the municipality, (Mdoni Municipality IDP,2021-2022)

The study area falls within three vegetation units which area the KwaZulu-Natal Coastal Belt Grassland (covering approximately 95% of the site), Moist Hinterland Grassland and the Dry Hinterland Grassland.

KwaZulu-Natal Coastal Belt Grassland

The KwaZulu-Natal Coastal Belt Grassland is distributed in KwaZulu-Natal Province: Long and in places broad coastal strip along the KwaZulu-Natal coast, from near Mtunzini in the north, via Durban to Margate and just short of Port Edward in the south. Altitude ranges from about 20–450 m. It highly dissects undulating coastal plains which presumably used to be covered to a great extent with various types of subtropical coastal forest (the remnants of one of which are described in Chapter 12 as Northern Coastal Forest). Some primary grassland dominated by Themeda triandra still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu-Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary Aristida grasslands, thickets and patches of coastal Thornveld.

This vegetation type is considered Endangered with a conservation target of 25%. Only very small part statutorily conserved in Ngoye, Mbumbazi and Vernon Crookes Nature Reserves. About 50% transformed for cultivation, by urban sprawl and for road-building.

Dry Coast Hinterland Grassland

The Dry Coast Hinterland Grassland is found in KwaZulu-Natal and the Eastern Cape Provinces, generally occurring above SVs 3 KwaZulu-Natal Hinterland Thornveld, SVs 7 Bisho Thornveld and the SVs 6 Eastern Valley Bushveld at an altitude of 450 - 900 m. It is found on undulating plains and hilly landscapes mainly associated with drier coast hinterland valleys in the rain-shadow of the rain-bearing frontal weather systems from the east coast.

This vegetation consists of sour sparse wiry grassland dominated by unpalatable Ngongoni grass (Aristida junciformis), with this monodominance associated with low species diversity. In good condition, it is dominated by Themeda triandra and Tristachya leucothrix. Wooded areas are found in valleys at lower altitudes, where, in this instance, it grades into SVs 3 KwaZulu-Natal Hinterland Thornveld. The herbaceous species richness is lower than in Moist Coast Hinterland Grassland. The conservation status of Dry Coast Hinterland Grassland is Vulnerable. It is 53.7 % transformed and only 0.7 % is statutorily conserved in the province in Oribi Gorge Nature Reserve. The conservation target is 25 %.

Moist Coast Hinterland Grassland (Gs 20) is found in KwaZulu-Natal and Eastern Cape Provinces, generally occurring below Gs 9 Midlands Mistbelt Grassland in a rolling and hilly landscape. The vegetation consists of dense tall sour grassland dominated by unpalatable Ngongoni grass (Aristida junciformis), with this mono-dominance associated with low species diversity. In good condition, it is dominated Themeda triandra and Tristachya leucothrix. The conservation status of Moist Coast Hinterland Grassland is Endangered. It is 63.4 % transformed and only 0.2 % conserved in Vernon Crookes and Entumeni Nature Reserves. The conservation target is 25%.

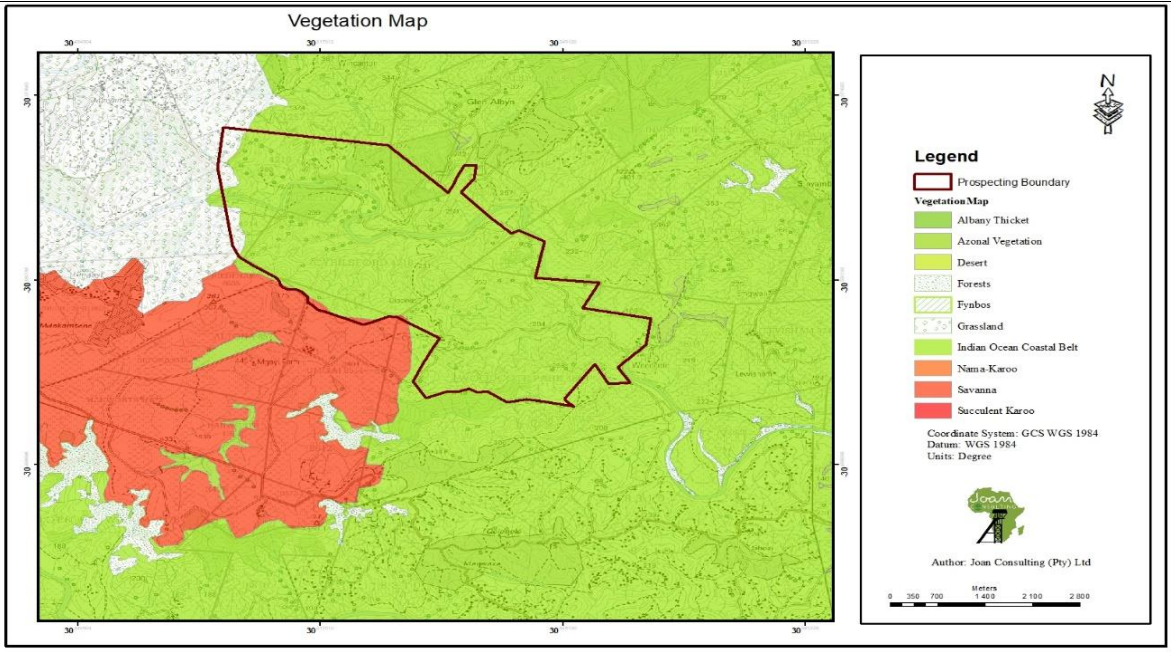


Figure 7:Vegetation types of the project site

11.1.5. Heritage

11.1.5.1. Archaeology

The Prospecting Right Application site was assessed for archaeological remains. The study confirmed that the KwaZulu-Natal coastal belt is heavily transformed by sugar cane, timber plantations and coastal resorts with interspersed secondary Aristida grasslands, thickets and patches of coastal Thornveld (Anderson 2018). The study did not identify any significant archaeological remains during the survey. Road cut sections and eroded sections were assessed for potential archaeological remains that may have been accidentally exposed by erosion and road construction. Based on the field study results and field observations, the receiving environment for the Prospecting Right Application site is low to medium potential to yield previously unidentified archaeological sites. Literature review also revealed that no Stone Age and LIA sites are shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

11.1.5.2. Burial grounds and Graves

The field survey observed that local people bury their deceased relatives within homesteads. In essence every homestead has at least one grave or more. At the time of the survey, permission to access burial sites located within homesteads was not yet granted. The study team concluded that graves mainly occur in built up residential areas. However, some unmarked graves may occur within cane fields, these are for people who were removed to make way for the cane fields during the colonial and apartheid eras. Concealed and isolated burial sites can only be identified with the help of local communities. Given the sensitivity of graves located within homesteads, we recommend that a walk down survey be conducted should the applicant proceed to apply for mining rights.

For the purpose of prospecting, local communities will be requested to declare family graves that may not be marked or occur in isolated places. This will be done during public consultation meetings. As such a professional archaeologist must be retained to document and map isolated graves and burial grounds that known by local communities. This process can be done with the help of informants from the local community.

11.1.5.3. Public Monuments and Memorials

The study recorded 3 landmarks within the proposed prospecting site. These are protected in terms of Section 27 of the NHRA and must not be tempered with without a permit from Amafa

aKwaZulu Natal and Research institute. In terms of SAHRA Regulations of 2020 a 100m buffer zone must be provided for each of the protected sites. In addition, the prospecting team must inform the traditional authorities about the potential impacts of their activities to the protected sites. In essence the prospecting team must seek the help of traditional leaders to delineate the protected heritage sites.

Table 9: Public Monuments and Memorials

Site	Coordinates	Description
Site 01	30°22′29.41’′S; 30°31′39.60’’E	Bhukele Msane Historical Settlement
Site 02	30°22′38.85’’S; 30°32′04.75′′E.	Msane Historical Settlement
Site 03	30°23′28.24’’S, 30°04.50′′E.	Msane Historical Settlement

11.1.5.4. Buildings and Structures

The study observed several buildings and structures that are likely to be older than 60 years. Further investigations of the buildings will be required if the applicant decides to apply for mining rights, For the purpose of prospecting the occupied buildings will not be affected. In terms of Section 34 of the NHRA the Prospecting Right Application may be approved without any further investigation and mitigation.

11.2. Municipality Demography

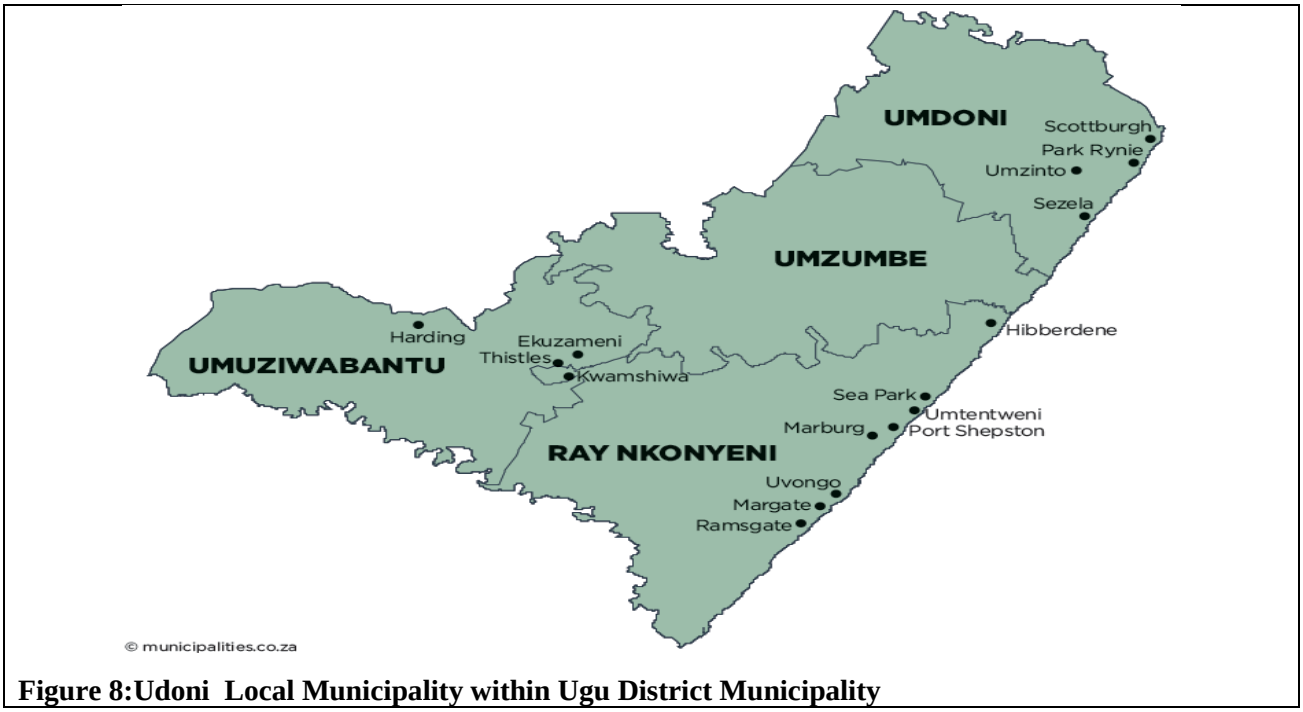


Figure 8:Udoni Local Municipality within Ugu District Municipality

11.2.1. Population

Umdoni Local Municipality has around 994 km^2, accounting for approximately 21% of the total area of the Ugu District Municipality.

According to the data in the table below, roughly 11.0 million people lived in KwaZulu-Natal in 2016, with just about 7% of them residing in the Ugu District Municipality. The figure also shows that the Umdoni Local Municipality had a population of less than 144 551 people in 2016 and experienced a significant increase in yearly growth between 2011 and 2016, with a growth rate of 16.6% when compared to national, provincial, and district growth rates. This is due to the re-demarcation of municipal boundaries in 2016 and the dissolution of Vulamehlo Local Municipality, from which Umdoni Municipality inherited the 6 and 7 districts, Umdoni Local Municipality IDP, (2020-2021).

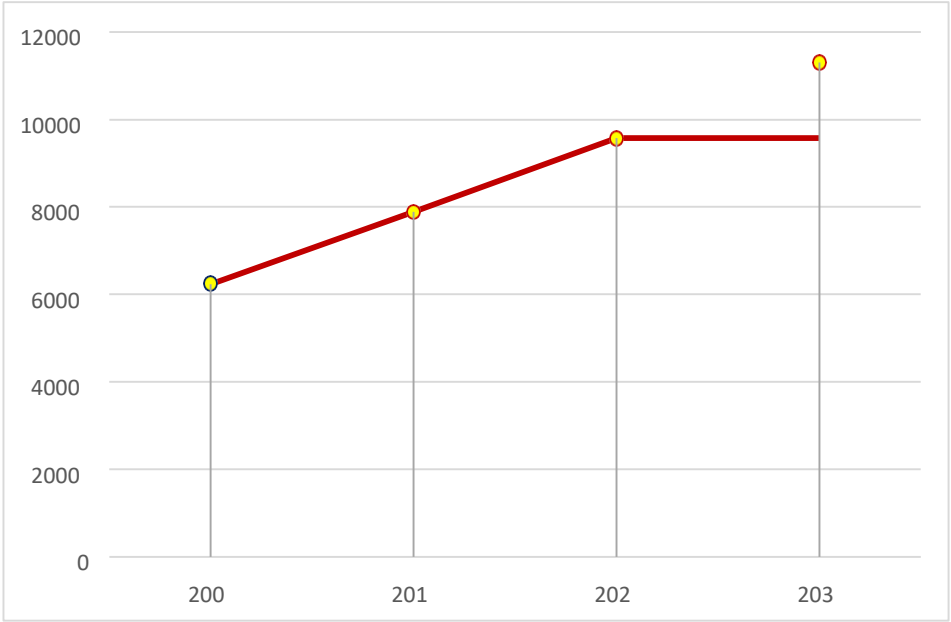


Figure 9: Umzumbe local Municipality Population

11.2.2. Gender Composition

Umdoni Local Municipality Integrated development plan (IDP) indicates that females outnumber males across the entire municipality. One major factor contributing to this phenomenon could be that traditionally, men tend to travel to major urban centre in search for economic opportunities to sustain their families whilst women remain behind looking after children and homesteads.

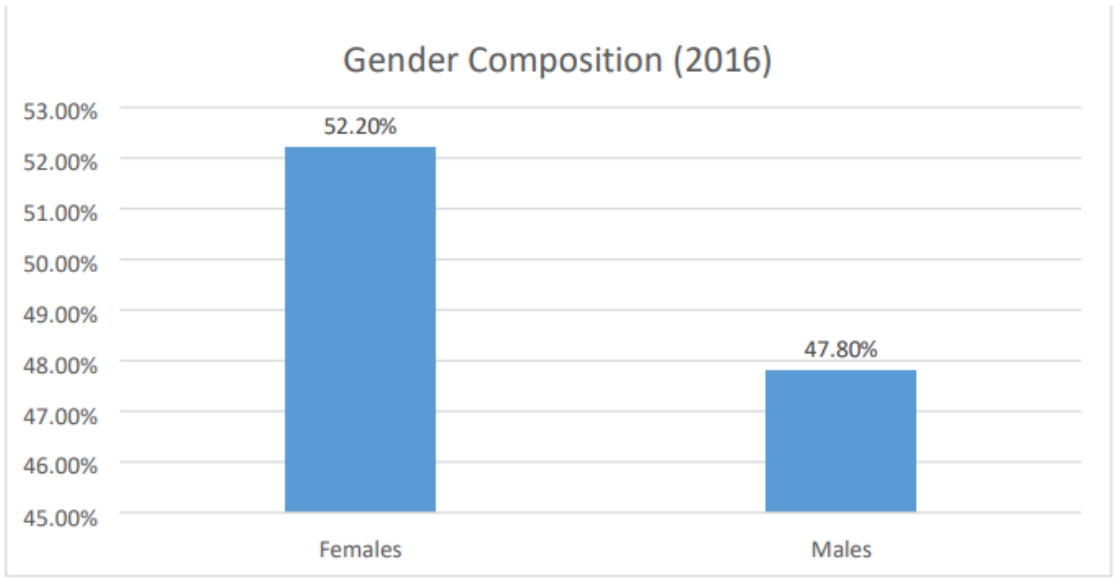


Figure 10: Gender Composition in the Municipality

11.2.3. Age Group

The below table indicates the different age groups against population. Evidently, Umzumbe is a growing population meaning that most of the people in the municipality are children aged form 0-14 followed by the age group of youth 15-34 then adults 35-64 and least population being that of the elderly group. The cause may be a wide range of factors such as rural – urban migration for the adults, looking for jobs to support their families and then mostly due to teenage pregnancy. It is a trend that women and girls from rural areas do not practice birth control measures mainly because there is a lack of health and information centres. Another reason may be that there are many child-headed households where parents or adults have passed on due to communicable diseases, leaving the children with no guardian.

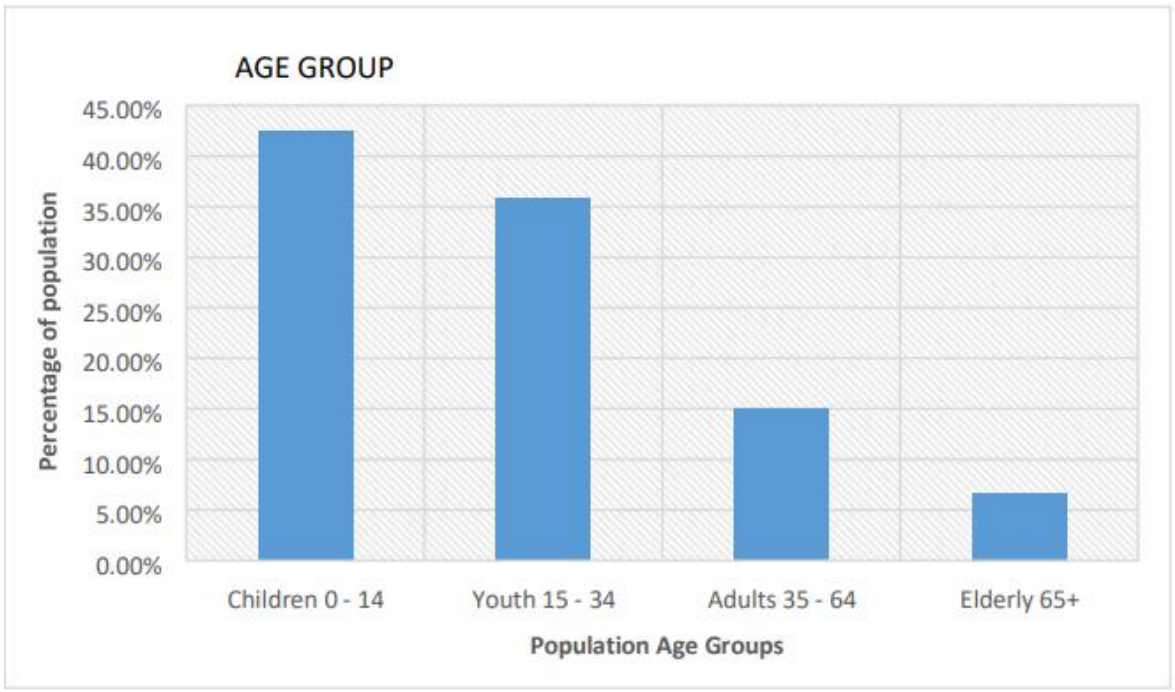


Figure 11: Age Group in the Municipality

11.2.4. Population Group

In terms of the population group, the demographics point to a situation whereby black majority makes up a huge percentage as opposed to the other races. This may be some of the apartheid regime's legacies of separate development or development across racial lines. Manifestation of apartheid spatial legacies that planned and placed people across racial lines: fragmented planning and segregation.

11.3. Economic Activities

11.3.1. Municipality Employment

Census 2011 revealed that of the people (90 603) who were eligible to work, only 14% were employed, 15% unemployed, 16% discouraged work-seekers and 87% not economically active. In this situation, women seem to be worse off than men.

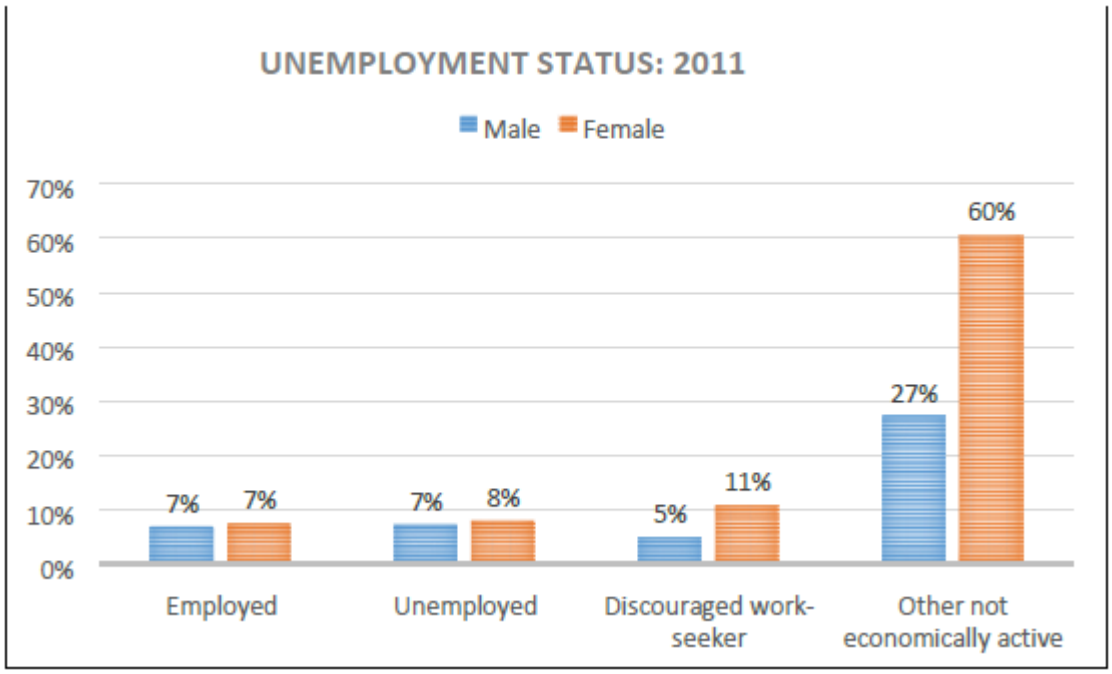


Figure 12:Population by employment status

11.3.2. Employment by sectors

It can also be eluded from the above graphs that employment levels from the various sectors have risen which is a positive gesture for the area.

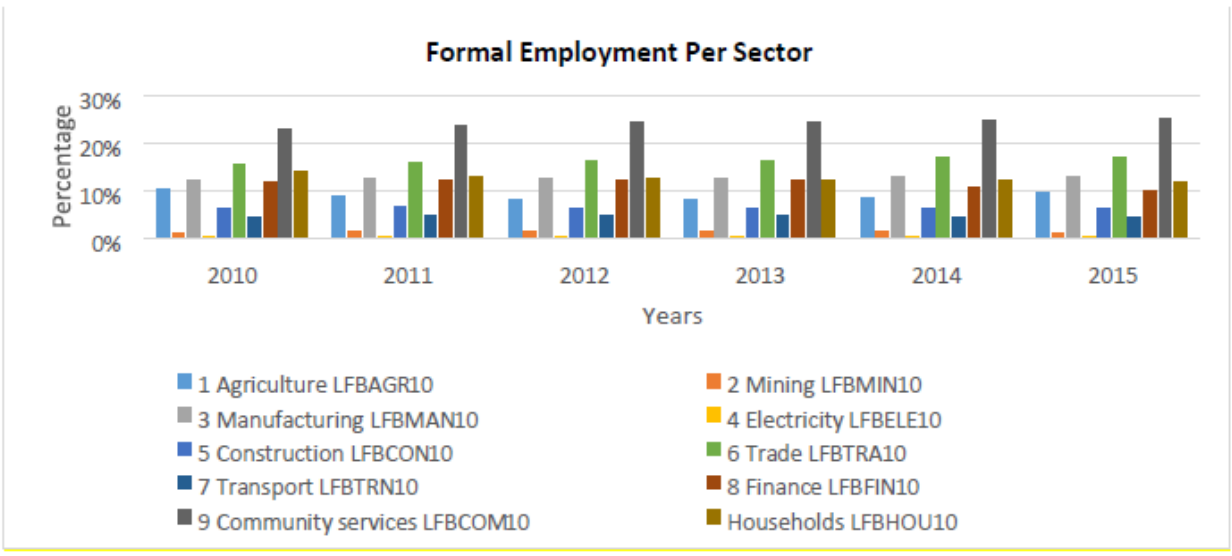


Figure 13:Formal Employment Sector

11.3.3. Economic Contribution Per Sector

The above graph shows the percentage of different economic contributors over a number of years. The graph shows that the mining sector has in the past and in the present been the lowest economic contributor whereas the manufacturing and agriculture sectors remain as the highest. The graph further sees the growth of the community services and construction sectors.

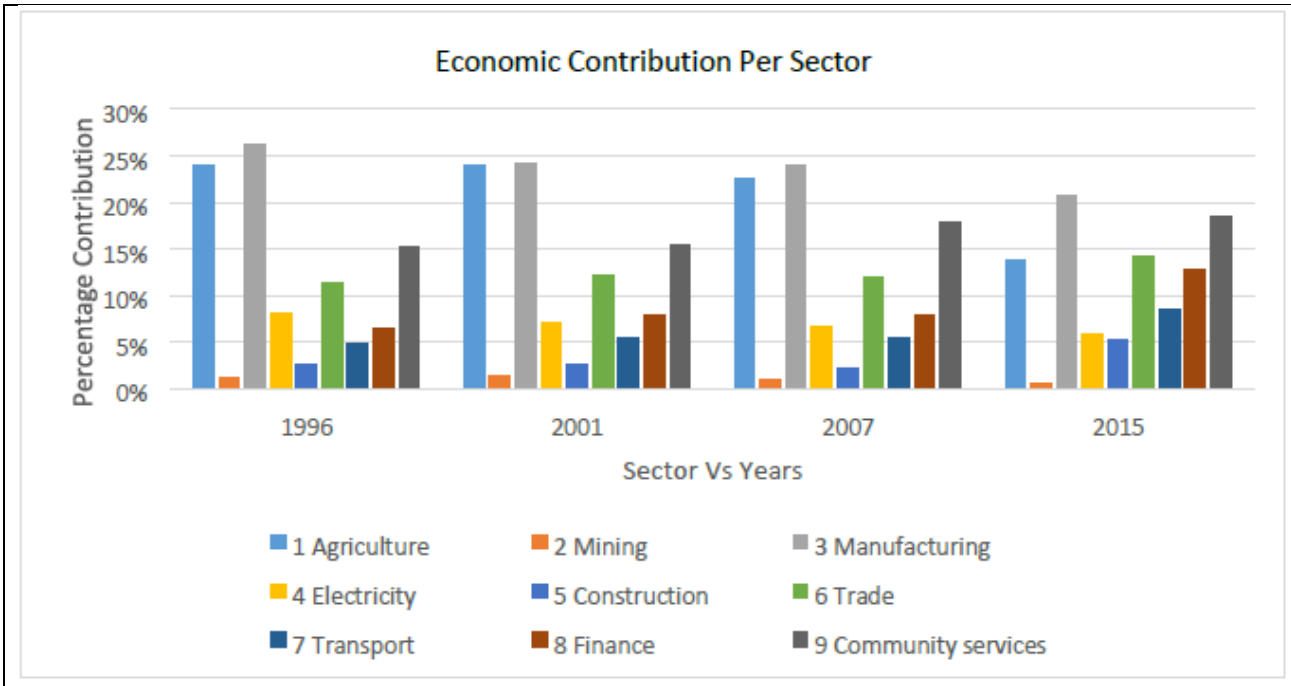


Figure 14:Economic Contribution Per Sector

12. Description of the current land uses.

The surrounding areas for the proposed prospecting site are comprised of cultivated land (sugar cane), forests, gravel road, and a river stream dissecting through the landscape. There are historical landmarks within the boundaries, which are the Msane Tribe Historical Landmarks and the Bhukele Msane Historical Settlement. quarry was identified during the site assessment.

13. Description of specific environmental features and infrastructure on the site.

The proposed site is disturbed and transformed due to farming. Land was transformed due to the following activities:

- Farming fields and associated infrastructure
- Infrastructure (roads)
- Electricity powerlines
- Natural forest
- River.
- Quarry.

Figure 15: During site inspection lithium quarry was discovered.

Figure 16: An overview of the vegetation within proposed site

Figure 17: Farming Fields and Associated Infrastructure

Figure 18: Ifafa River on site

14. Environmental and current land use map

The environmental land-use map is attached as figure 14 overleaf.

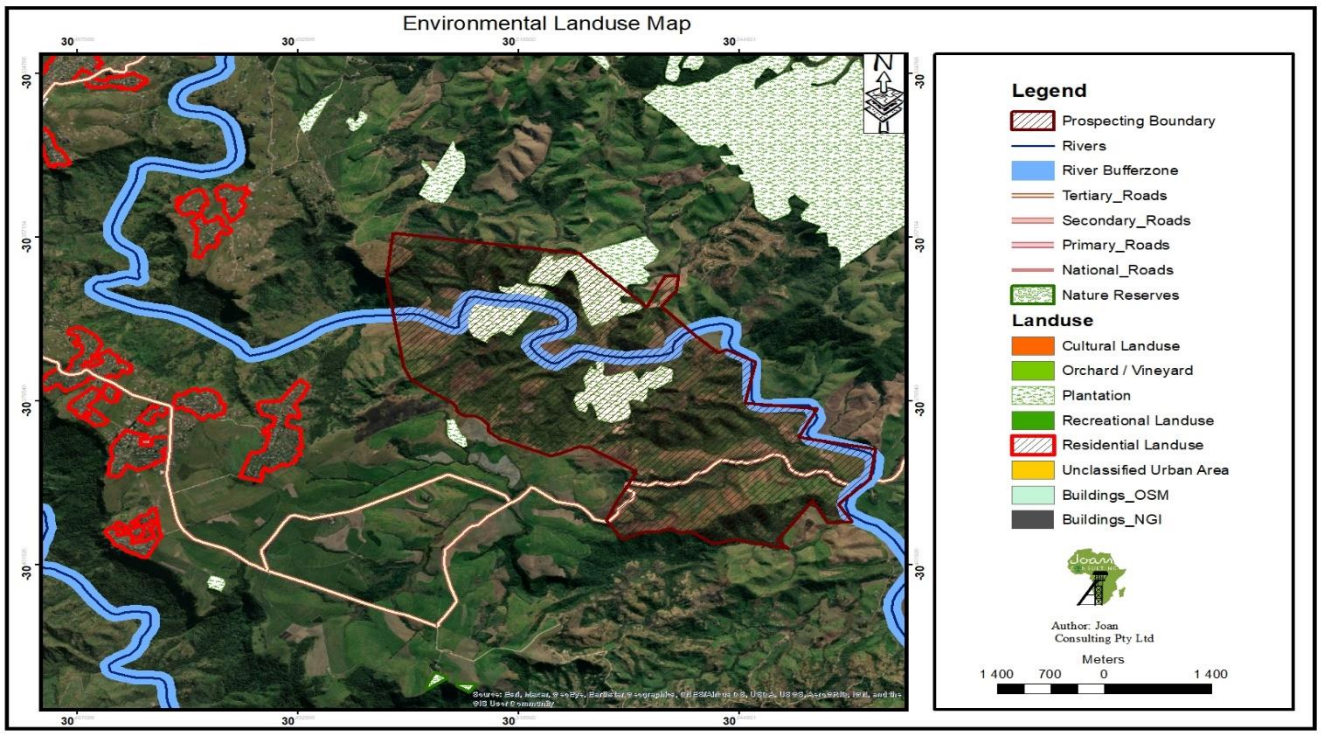


Figure 19: Land-use map

15. Impacts and risks identified including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts.

- Air Pollution
- Soil Erosion
- Surface water pollution
- Ground water pollution
- Heritage features destruction
- Vegetation clearance
- establishment of Alien and Invasive species (AIPs)
- Health and safety
- Increase in traffic.
- Soil and Land contamination
- Increase in noise levels.

16. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.

Table 10: Criteria used for rating of Impacts.

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.

Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

1. **Significance Points (SP) = (Magnitude + Duration + Extent) x Probability**

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30).

Table 11: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

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

Table 12: The positive and negative impacts that the proposed activity

Positive impacts (+ve)	Negative impacts (-ve)
Potential exploitation of mineral reserves	Possible generation of dust and noise through machinery operation
Economic stimulation of the local communities through employment	Vegetation clearance and habitat disturbance
Stimulating of local community social lives through building of infrastructure (e.g., roads)	Disturbance of land capabilities through soil erosion, soil compaction, and contamination
	Possible underground water contamination due to drilling
	Possible waste generation from the activities (e.g., littering)
	Potential health and safety related impacts to personnel

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

A summary of possible mitigation measures that could be applied and the level of risk associated with the prospecting right has been outlined in table 13.

Table 13: The possible mitigation measures that could be applied and the level of risk.

List of potential Impacts	Possible mitigation measures	Level of risk
Air & noise: Impact on access roads from vehicles	Maintain machinery to ensure minimum noise and air pollution	The level of risk is low before and after mitigation measures
Noise: noise pollution due to drilling of boreholes	Consult relevant local government legislature on noise levels. Working should be conducted within the provided working hours.	The level of risk is low before and after mitigation measures.
Air: generation of dust due to drilling and movement of vehicles	Consult relevant local government legislature on dust pollution levels. Work within relevant provided working hours	The level of risk is low before and after mitigation measures.
Vegetation: vegetation clearance results in loss of vegetation	Vegetation clearing only applicable to designated areas. Consultation with relevant legislature on removal floral species. Rehabilitation of exposed areas with indigenous flora.	The level of risk is low before and after mitigation measures.
Vegetation: establishment of Alien and Invasive species (AIPs)	Removal of AIPs as they emerge	The level of risk is low before and after medium mitigation measures.
Land and soil: possible soil erosion, contamination, and compaction of soils	Erosion measures should be implemented and monitoring established	The level of risk is low before and after mitigation measures.
Socio-economic: Job creation and improvement of community lives	Engagement with Interested and Affected Parties on the proceedings of the project.	N/A
Heritage resources: disturbance of natural resources such as graves	Heritage specialists should be consulted, should such structures be uncovered.	The level of risk is low before and after mitigation measures.

19. Motivation where no alternative sites were considered.

The activity or project is entirely dependent on the underlying geology, no alternates have been researched.

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

The site was chosen after an analysis of the region's underlying geology, no alternatives were taken into consideration. The prospecting activities will be carried out to confirm the availability of the minerals and the viability of mining them in the future because the area may be underlain by reserves of lithium and other minerals.

21. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.

The proposed activities with their associated impacts and risks were identified. There are no impacts or risks associated with non-invasive desktop studies. Desktop pre-site visit encompass consultation with relevant government legislature, scientific papers, landowners, and relevant specialist. The potential impacts and risks are described and assessed for significance, please refer to **table 14** for variables used to determine significance of the proposed activities. Significant impacts that arise from the proposed activities are associated with invasive methods. Invasive drilling results in vegetation clearance, air & noise generation, compromise of land & soil capability, and heritage resources disturbance. The significance of possible impacts will have influence project decision making and mitigation measures.

22. Assessment of each identified potentially significant impact and risk.

This chapter comprises the depiction of the potential impacts of the proposed exercises on the biophysical, socio-economic, and legacy and social environment. These depictions are taken after by the affect tables which contain the appraisal of the noteworthiness of each distinguished affect without, at that point with moderation measures.

Table 14:Impact Assessment for Construction, Operational and Decommissioning phases of the project

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
CONSTRUCTION PHASE														
Vegetation	Clearing of vegetation and movement of vehicles	Loss of vegetation	**- (ve)**	6	2	4	5	60	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. • No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a license to do so has been granted and removal is undertaken by a specialist. • Prohibit the collection of plant material for medicinal purposes and firewood. • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity	2	1	2	5	25
Noise **Air Quality**	Clearing of vegetation and movement of vehicles	Dust and Noise Generation	**- (ve)**	8	3	2	4	52	• Dust generation activities such as excessive clearing of vegetation and over 40km/h driving speed and etc should be limited. • Best access route that will not generate dust and	6	1	2	2	18

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									noise must be discussed with the landowner prior any construction activities may commence on site. • Drill rig and Cars must be services regularly to reduce noise levels. • Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level					
Socio-Economic	Clearing of vegetation and movement of vehicles for site establishment	Settlement and residential area. Negatively impacting on their livelihoods	**- (ve)**	8	2	2	5	60	• The applicant must consult with the affected parties on which times are favourable for them before undertaking activities which could negatively impact on their livelihoods	4	1	1	3	18
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil contamination by oil spills from vehicles and machinery	**- (ve)**	6	2	2	3	30	• Any equipment that is leaking must be temporarily decommissioned and removed from the site to a surface which is impermeable and has a wastewater collection system. • Spill kits will be provided for onsite spill cleaning. Clean any oil spillages on site within 24 hours.	2	1	2	2	10

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									• Construct a concrete slab where any oil storage will be placed to avoid soil contamination by hydrocarbon leakage. • Make all staff aware of the need to prevent spills, leaks, and disposal of contaminated water onto the ground and ensure that they are adequately trained to take corrective action should an accidental spill occur. • Provide drip trays for all parked vehicles					
Soil	Clearing of vegetation and movement of vehicles for site establishment	Habitat destruction by vegetation removal	**- (ve)**	6	2	4	5	60	• Areas to be cleared must be clearly marked in the field to eliminate unnecessary clearing. Vegetation clearing should be restricted within the demarcated areas (operation footprint) • A field survey must be undertaken before drilling activities commence on site to demarcate ecologically sensitive area near the stream and ensure that no disruption is caused in the sensitive area. • No listed and/or protected plant species are to be destroyed. The assistance of an ecologist is	4	2	2	3	24

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									required to identify such species on site. • Use already available farm roads and trails to avoid trampling red listed plant species. • Do not disturb nests, breeding sites of animals. • Do not attempt to kill or capture snakes unless directly threatening the safety of employees. • Employees and contractors must be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. • Keep to the speed limit of 40 km/h on all roads running through and accessing the site to avoid driving over any fauna					
		Soil erosion as the results of exposed surface	**- (ve)**	6	3	4	3	39	• Sensitive landscapes must be marked as NO-GO areas. • Immediately rehabilitate areas that have of been stripped of vegetation. • Restrict impacts to prospecting activities footprint.	4	2	2	2	16

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									• Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has been established. • Topsoil should be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water					
Noise	Clearing of vegetation and movement of vehicles for site establishment	• Disruption of neighbouring landowners. • Noise will be generated from the operation of drilling vehicles and machinery.	**- (ve)**	2	2	1	5	25	• Service equipment, machineries, and vehicles regularly to minimise noise. Where necessary, if possible, install silencers on equipment/machinery. • Provide ear plugs to the employees and ensure they wear them for the protection of their ears. • Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level.	2	1	1	5	20
Soil and Groundwater	Clearing of vegetation and	Ground & surface water	**- (ve)**	6	3	3	3	36	• Vehicles must be restricted to travel on the designated roadways at the recommended times	4	2	2	2	16

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	movement of vehicles for site establishment	contamination and soil contamination from hydrocarbon spillages from machinery or vehicles.							to avoid contamination. • Topsoil should be retained and replaced where possible, this will help reduce soil contamination as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water. • Place drip trays under parked vehicles and machinery to avoid soil contamination by hydrocarbon leakage.					
Vegetation (Weeds)	Clearing of vegetation and movement of vehicles for site establishment	The proposed activities may introduce or encourage establishment of alien vegetation in the area	**- (ve)**	6	2	2	3	30	• Implement early detection and eradication of the alien invasive species through a monitoring programme. • An alien invasive management programme must be implemented to control alien invasive species. • All alien invasive tree & weed species growing in the areas disturbed by prospecting activities must be removed from the cleared area, and continuous monitoring must be conducted for three	4	1	2	2	14

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									consecutive years after closure of each site.					
Land Capability	Clearing of vegetation and movement of vehicles for site establishment	Land degradation and land use change due to potential topsoil/fertile soil loss	**- (ve)**	8	2	3	3	39	• Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity. • Landowners must be consulted on where the different infrastructures can be placed. • Avoid as far as possible areas of important farmland activities, by selecting areas with a low veld condition and diversity. • Topsoil and sub soil must be kept separately throughout drilling activities and rehabilitation. • Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area. • Where soil nutrients and/or fertility has been lost, the soil must be fertilised to recover cultivation capacity	4	1	2	3	21
Fauna	Clearing of vegetation and	• Loss of faunal diversity may	**- (ve)**	6	2	2	4	32	• Do not disturb nests, breeding sites of young animals unnecessarily.	4	1	2	2	14

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	movement of vehicles for site establishment	occur because of faunal dispersion • Disturbance of the biodiversity ecosystem of the area by operational vehicles							• Do not attempt to kill or capture snakes unless directly threatening the safety of employees. • Vehicles must be restricted to travel on the designated roadways to minimize the ecological footprint of the proposed development. • Keep to the speed limit of 40 km/h on all roads running through and accessing the site to avoid driving over any fauna					
Safety and security	Clearing of vegetation and movement of vehicles for site establishment	• Personnel injuries from safety hazards on site; • Accidents resulted from moving vehicles; • Exposure to snakes and	**- (ve)**	6	2	2	4	40	• Ensure that workers and any persons accessing the site always wear the correct PPE. • Compile a health and safety risk assessment of the site to identify all safety related hazards and risks. • Educate all employees working on site, in the form of inductions/training or toolbox talks of the health and safety risks on site	2	1	1	2	08

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		other wild animals on site.												
Safety and Security	Clearing of vegetation and movement of vehicles for site establishment	Working on site can pose safety hazards to landowners and people living in the farms causing • Fear of lives • Increased Criminal activities.	**- (ve)**	6	2	2	3	30	• Notify the locals of the Prospecting team to before accessing the site. • People accessing the site must be known before accessing the site though sending the pictures of themselves. • Registration numbers of the vehicles (Make of the vehicles) on site must be known before accessing site. • All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms.	4	2	2	2	16
Traffic	Clearing of vegetation and movement of vehicles for site establishment	Increased in Traffic	**- (ve)**	2	1	2	4	16	• Traffic will not necessarily increase as the access route is not used by the public and there will be a maximum of 5 vehicles on a normal day – going in and out of the site. • Speed limit should be kept 40km/h and below.	2	1	2	3	13

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Visual Impact	Clearing of vegetation and movement of vehicles for site establishment	Limitation of visibility through dust caused by moving vehicles	**- (ve)**	6	1	1	4	32	• Dust generation activities such as excessive clearing of vegetation and over 40km/h driving speed should be limited. • Best access route that will not generate dust and noise should be discussed with the landowner prior any construction activities may commence on site	4	1	1	2	12
Socio-economic Impact	Site establishment: ablution and temporal admin facilities	Job Creation	+ **(ve)**	8	3	2	5	65	• This is a positive impact; no mitigation measures are required.					
Socio-economic Impact	Site establishment: ablution and temporal admin facilities	Impacts on livelihoods and loss of income	- **(ve)**	8	2	2	5	60	• The applicant must consult with the affected parties on which times are favourable for them before undertaking the activities which could negatively impact their livelihood	4	1	1	3	18
Heritage Resources	Site establishment: ablution and	Impact on Heritage Resources	**- (ve)**	6	1	2	3	27	• Should artefacts or archaeological items or sites be observed, activity on the area must cease immediately, area marked off and a specialist	4	1	1	1	6

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	temporal admin facilities								consulted prior to any further activity. • Keep a 50m distance from graves if encountered.					
OPERATIONAL PHASE – DRILLING														
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Vegetation removal	**- (ve)**	6	1	2	5	45	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. • Sensitive or endangered plant species must be marked avoided. • Prohibit the collection of plant material for medicinal purposes and fire wood. • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity.	4	1	1	5	30
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Destruction of protected plant species	**- (ve)**	4	1	4	5	45	• Supervision by an ecologist to ensure success of the rescue operation. • Place drilling holes away from any red listed and/or protected plant species • Use already available farm roads to avoid	4	1	4	3	27

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									trampling red listed plant species					
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Removal of the natural vegetation	**- (ve)**	4	1	4	5	45	• Due to the sensitivity of the areas, it is advised that areas designated for vegetation clearing should be identified and visibly marked off and approved as part of final drilling map. • Avoid drilling on the Falls area as it provides habitat for Vultures as well as Blue Cranes. • Use already available farm roads and avoid creating new ones. • Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites. • Exposed areas must be rehabilitated with indigenous plants to the project area as soon as construction is completed.	4	1	4	3	27
Vegetation	Borehole drilling, Operation of water sump and	Disturbance to animals on site	**- (ve)**	6	2	3	4	44	• Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.	6	2	3	2	22

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	movement of vehicles								• A low-speed of 40km/h limit must be enforced on site to reduce wild animal-vehicle collisions. • No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. • Hunting weapons are prohibited on site. • Contract employees must be educated about the value of wild animals and the importance of their conservation. • The ECO must conduct regular site inspections of removing any snares or traps that have been erected. • Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage.					
Vegetation	Borehole drilling, Operation of water sump and	Increased soil erosion, increase in silt loads and sedimentation	**- (ve)**	4	2	4	5	50	• Following prospecting, rehabilitation of disturbed areas is required. • Avoid areas with sensitive soils, steep slopes	2	4	4	3	30

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	movement of vehicles								during rain or windy season. • Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration					
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Establishment and spread of declared weeds	**- (ve)**	6	1	4	5	55	• The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. • An alien invasive management programme must be developed and implemented in order to control alien invasive species	6	1	4	3	33
Noise	Borehole drilling, operation of water sump and movement of vehicles	Noise will be generated due to the operation of drilling machinery and vehicle as well as people's movement around the site	**- (ve)**	6	2	1	5	45	• All equipment to be adequately maintained and kept in good working order to reduce noise. • Workers and personnel will wear hearing protection (ear plugs) when required. • Use equipment or machinery that complies with the manufacture's specifications acceptable noise levels. • Employees loitering around the site is prohibited.	2	1	1	5	20

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Noise **Air Quality**	Borehole drilling, operation of water sump and movement of vehicles	Dust and Noise Generation	**- (ve)**	8	3	2	4	52	• Dust suppression using water must be undertaken to manage dust. • Drill rig and Cars must be services regularly to reduce noise levels. • Work during the daytime only to minimise disruption of neighbours and animal life. • Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level	6	1	2	2	18
Soil	Removal of soil during drilling.	Exposure of soils stripped of vegetation during the construction phase and operational phase (drilling) may lead to erosion of such soils. This will	**- (ve)**	8	2	2	4	48	• Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established. • Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion. • Vehicles should be restricted to travel on the designated roadways at the recommended speed. • Topsoil must be stockpiled properly to retain fertility of the soil post closure.	4	1	2	4	28

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		result in loss of soil nutrients.							• Topsoil stockpiles must be covered/protected to prevent erosion by wind and/or water					
Health and safety	Borehole drilling, Operation of water sump and movement of vehicles	Increased risk to public and worker safety:	**- (ve)**	8	1	2	4	44	• Comply with all the relevant requirements of Mine Health and Safety Act (Act 29 of 1996)	4	1	2	2	14
Safety and Security	Borehole drilling, operation of water sump and movement of vehicles	Working on site can pose safety hazards to landowners and people living in the farms. Increased Criminal activities.	**- (ve)**	6	2	2	3	30	• Notify the locals of the Prospecting team to before accessing the site. • People accessing the site must be known before accessing the site though sending the pictures of themselves. • All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms.	4	2	2	2	16
Land	Borehole drilling, construction of	Change in land capability due to topsoil loss,	**- (ve)**	8	2	3	4	52	• Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity.	4	1	2	3	21

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	water sump and movement of vehicles								• Landowners must be consulted on where the different infrastructures can be placed. • Avoid as far as possible areas of important farmland activities, by selecting areas with a low veld condition and diversity. • Topsoil and sub soil must be kept separately throughout prospecting activities and rehabilitation. • Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area. • Where soil nutrients and/or fertility has been lost, the soil should be fertilised to recover cultivation capacity					
Soil and Groundwater	Borehole drilling, construction of water sump and movement of vehicles	Contamination of soil and underground water by spills from mobile ablution	**- (ve)**	6	2	2	4	40	• Vehicles and drill equipment must be regularly serviced and maintained. • Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages.	2	1	1	3	12

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		facilities and oil from drill rig							• Dip trays must be placed under parked vehicles and machinery. • A spill kit will be available on each site where operation activities are in progress; and • Any spillages must be cleaned up immediately to prevent further contamination.					
Ground water	Borehole drilling, construction of water sump and movement of vehicles	Material used for backfilling boreholes may leach pollutants that will result in the pollution of the surrounding groundwater	**- (ve)**	6	2	2	4	40	• Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated.	2	1	1	3	12
Waste Management	Waste generation and storage	Solid waste such as debris and litter may be generated and deposited in and around the site.	**- (ve)**	8	2	3	5	65	• Littering must be prohibited, and all waste generated from the site must be cleared. • A 'no waste dumping' sign must also be placed on site. • Waste generated by workers must be collected and disposed of timeously at the nearest	4	1	1	3	18

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		This could potentially attract nuisance and affect the natural scenery/aesthetic quality of the site.							registered landfill. • Store waste in labelled containers, indicating clearly whether the waste is hazardous or non-hazardous (general waste). • Burning of waste material is not permitted. • Hazardous waste must be cleaned up using absorbent material provided in spill kits on site and must be disposed of accordingly at a hazardous waste landfill.					
Fire control	Borehole drilling, construction of water sump and movement of vehicles	Increase veld fires potential	**- (ve)**	4	1	1	2	12	• Vegetation around proposed site must be kept short to create a fire management zone. • Open fire is prohibited on the site. • No burning cigarettes or matches may be thrown down within exploration area. • Rubbish or vegetation may under no circumstances be burnt on site. • Training of staff will include awareness regarding rules of the site	4	1	1	1	6
Surface	Borehole	Surface water	**- (ve)**	6	1	2	3	27	• Vehicles and equipment must be regularly	4	1	1	2	12

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
water	drilling, construction of water sump and movement of vehicles	Pollution though oil spills							serviced and maintained. • Refuelling of vehicles and equipment will be done with care to minimise chance of spillages. • Drip trays must be placed under parked vehicles and machinery.					
Heritage Resources	Borehole drilling, construction of water sump and movement of vehicles	Discovery of graves and other heritage resources	**- (ve)**	6	1	2	3	27	• Should artefacts or archaeological items be observed, activity on the specific site must cease immediately, the area marked off and a specialist consulted prior to any further activity. • Keep 50m distance from graves and demarcate them as no-go areas.	4	1	1	1	6
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	**- (ve)**	6	1	4	5	55	• LIA site must be mapped and documented. • A management plan for the site must be drawn. • Section where scatters of potsherds were recorded must be avoided where possible. • An archaeologist must be appointed to monitor during prospecting. • Use chance find procedure to cater for accidental finds	6	2	4	3	36

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Cultural heritage	Clearing and prospecting	Disturbance of graves	**- (ve)**	6	5	4	4	60	• Maintain 50m buffer zones for all burial sites. • Burial sites must be mapped. • Consult Landowners and farm workers to identify burial sites before prospecting	6	2	4	2	24
Cultural heritage	Disturbance of buildings and structures older than 60 years old	Operational	**- (ve)**	4	1	2	2	14	• None required	4	1	2	2	14
Cultural heritage	Destruction public monuments and plaques	Operational	**- (ve)**	2	1	1	1	4	• Mitigation is not required because there are no public monuments within the prospecting right application site	2	1	1	4	8
Air Quality	Borehole drilling, construction of water sump and movement of vehicles	During operation, activities may result in dust generation and the release of particulates into	**- (ve)**	6	3	2	5	55	• Dust suppression measures such as spraying of water on site access route and around site must be implemented. • Topsoil stockpiles or soil heaps must be watered to reduce dust emission or place protective nets over the stockpile.	2	2	2	2	12

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		the area. Potential dust generation activities may include drilling, movement of vehicles and topsoil clearing							• Keep to the speed limit of 40 km/h on all roads running through and accessing the site. • Minimize the extent of cleared vegetation and exposed soil. Where possible, place protective nets over exposed soil.					
Fauna	Borehole drilling, construction of water sump and movement of vehicles	• Depletion of wild animals • Hunting and killing of wild Animals	**- (ve)**	10	3	2	4	60	• The rehabilitation of the disturbed areas must be conducted such that the rehabilitated areas will encourage the migration of animals back into the rehabilitated areas. • Poaching of wild animals and livestock is prohibited.	4	3	2	3	27
Fauna	Borehole drilling, construction of water sump and movement of vehicles	Migration of animal life due to disturbance	**- (ve)**	8	3	2	4	52	• Sites will be operated according to the approved prospecting works programme. • As much as possible sites with degraded environment will be used for the drilling purposes. • Poaching is prohibited at the prospecting site.	6	3	2	4	45

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Visual Impact	Borehole drilling, operational of water sump and movement of vehicles	Visual Impact on the farm	**- (ve)**	6	1	1	5	35	• Ensure that the period used for the drill rigs is optimised to ensure that the drill rigs are moved from one site to another over short periods.	6	1	1	3	21
Socio-Economic	Clearing of vegetation and movement of vehicles for site establishment	Prospecting activities negatively impacting on their livelihoods	**- (ve)**	8	2	2	5	60	• The applicant must consult with the affected parties on which times are favourable for them before undertaking activities which could negatively impact on their livelihoods.	4	1	1	3	18
Socio-Economic	Borehole drilling, construction of water sump and movement of vehicles	Safety and livelihood impact on the landowners and occupiers.	**- ve**	6	1	1	4	32	• Landowners must be informed on the type of machinery and equipment to be used during drilling phase of the project. • Lighting must be conducted in manner that will reduce the impacts on visual aspects at night times	6	1	1	2	16
Socio-Economic	Borehole drilling, construction of	Safety and Security.	**+ Ve**	6	1	1	5	35	• Ensure that safety measures in the EMPR are implemented to prevent the impacts on the property owners.	6	2	2	5	50

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	water sump and movement of vehicles								• Negotiations on compensation and accessing the site to be undertaken before the drilling programme can commence.					
DECOMMISIONING AND CLOSURE PHASE														
Rehabilitation	Rehabilitating of the disturbed and contaminated areas	• Revegetation of areas where vegetation was disturbed to restore ecosystem function and integrity. • Removal of all infrastructures onsite.	**+ ve**	6	1	2	3	27	• All areas that have been damaged by prospecting activities and vehicles should be stabilized immediately after activities ceases to prevent and control erosion. Undertake concurrent rehabilitation throughout the operations. • Remove all vehicles, equipment, waste, and surplus materials from the site. • Clean up and remove any spills and contaminated soil on site. • Ensure that actions identified in site closure checklist have been completed and that the ECO is satisfied with the state of the site. • Ensure that aftercare is provided, and the natural environment recovers and stabilizes after closure.	8	2	3	5	65
Soil, land use	Rehabilitation	Soil and Land	+	8	1	4	4	52	• Protect vegetation and soil by avoiding	8	1	4	4	52

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
and land capabilities	Activities	contamination from Hydrocarbon's spillages	(ve)						hydrocarbon spillages. • Vehicles must make use of existing roads to avoid destruction of vegetation. • Car tracks created by movement of vehicles must be rehabilitated					

23. Summary of specialist reports

This proposed project will entail drilling of 20 boreholes and the placement of drilling activities will be more that 500m from sensitive environment such as rivers, wetlands, and other critical biodiversity and 5m from the heritage sites.

Table 15: Summary of specialist reports

Specialist undertaken	Recommendations of the specialist report	Specialist recommendations that have been included in the basic assessment report	Reference to a section of report where specialist recommendations have been included.
Heritage Impact Assessment	1. It is recommended that SAHRA decide in terms of Section 38 (4) of the NHRA and Section 41(2) of Amafa aKwaZulu Natal and Research Institute Act of 2018 to approve the Prospecting Right Application on condition that all graves are identified, documented, and mapped. 2. The planners for the mine must provide 100m buffer zone from each burial and historical of the three known historical settlements recorded in this report. 3. Documentation of graves located within homesteads must only be done if full permission is granted by the custodian families. 4. Landowners and homeowners must be requested to declare graves located in their properties to ensure that all graves that occur in the project area are documented and mapped before prospecting commences.	X	

Specialist undertaken	Recommendations of the specialist report	Specialist recommendations that have been included in the basic assessment report	Reference to a section of report where specialist recommendations have been included.
	A walk down survey to record graves is required once permission is obtained from the residents and property owners. 6. From a heritage perspective supported by the findings of this study, the Proposed Prospecting Right Application is supported. However, the Prospecting Right Application should be approved under observation that the proposed prospecting does not extend beyond the area considered in this report/affect the identified heritage sites. 7. Should any of the identified historical buildings be on the direct footprint of the proposed mine footprint, a heritage practitioner must be appointed to assess the buildings in detail and apply for demolition permits f 8. Mitigation on graves must not be done without the involvement and consent from the custodian families. 9. Should chance archaeological materials or human remains be exposed during work to be conducted on		

Specialist undertaken	Recommendations of the specialist report	Specialist recommendations that have been included in the basic assessment report	Reference to a section of report where specialist recommendations have been included.
	any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in the prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations. 10. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the Prospecting Right Application. The Heritage authority may approve the Prospecting Right Application as planned with special commendations to implement the recommendations made herein. rom Amafa a KwaZulu Natal and Research Institute.		

Specialist undertaken	Recommendations of the specialist report	Specialist recommendations that have been included in the basic assessment report	Reference to a section of report where specialist recommendations have been included.
Biodiversity Impact Assessment	Considering the nature of the project, it is the opinion of the specialists it is unlikely that prospecting project may cause great impact on the environment. To ensure that the project has minimal impacts on the sensitive environment, it is proposed that drilling sites be placed outside an area highlighted as highly sensitive as per Appendix C of the attached Ecological and Wetland Baseline Impact Assessment Report	X	Section 9.3 and table 15

24. Environmental Impact Statement

24.1. Summary of the key findings of the environmental impact

The environmental Impacts associated with the prospecting process are significantly low, the footprint of the project activities is site specific only. Mitigation measures have been recommended to eliminate and/or reduce environmental impacts. These mitigation measures and monitoring programmes have been included as a commitment in the Environmental Management Programme. The Environmental Management Programme aims to present management measures that will eliminate, offset, or reduce adverse environmental impacts, as well as to provide the framework for environmental monitoring. The purpose of the Environmental Management Programme is to ensure that negative environmental impacts of the proposed project are effectively managed within acceptable limits and that the positive impacts are enhanced.

25. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.

The proposed project positive and negative impacts have been discussed on section 17 of this Basic Assessment report.

26. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr.

The objective of the identified mitigation measures is to ensure that the impacts are minimised or avoided. The EMPr addresses the environmental impacts associated with the project during Construction, Operation, Decommissioning and Post Closure Phases. The objectives of the EMPr will be to provide detailed information that will advise the planning and operation of the prospecting activities for the minerals of interest to avoid and/or reduce impacts that may be detrimental to the environment.

27. Aspects for inclusion as conditions of Authorisation.

- The access routes should be maintained, if necessary to ensure that other users are not affected using routes for the development.
- Ensure roads are well maintained and sprayed with water when necessary to suppress dust emissions.
- Engage with I&APs on the prospecting process.
- Comply with 100m buffer zones or 1:100-year flood of water bodies, and 50m heritage site buffer zone.
- Disturbed areas must be rehabilitated to a quality that matches or replicates the surrounding area.
- Fence off the mining operation site and regulate trucks and vehicles' speed to 30km/hr for the safety of neighbours and trucks utilise the access road off-peak traffic hours only (08:30-15:30).

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

- It is assumed that the conclusions made from the observation made during the site assessment and the desktop-sourced information is correct.

- It is assumed that the information obtained from the existing literature regarding environmental sensitivity, biodiversity, climatic conditions, heritage, and any related information is a true reflection of the conditions existing of the site.
- This report has been compiled according to the requirements stipulated or outlined in the NEMA regulations.

29. Reasoned opinion as to whether the proposed activity should or should not be authorised.

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

- The environmental impacts associated with the drilling activities are minimal provided that the proposed mitigations are implemented.
- With appropriate care and consideration, the impacts resulting from drilling can be suitably avoided, minimised, or mitigated. According to the impact assessment undertaken for the proposed project, the resultant impacts are of medium and low significance. The significance of the impacts can be reduced to low and very low when the mitigation measures are implemented.
- With implementing the appropriate rehabilitation activities, the impacts associated with the exploration activities can be reversed.
- The project will yield positive impacts in that it will create jobs should the exploration studies indicate a positive mining potential.

29.2. Conditions that must be included in the authorisation.

- SANBI National Freshwater Ecosystem Priority Areas (NFEPA) regulation should be complied with. The 100m buffer zone / 1:100-year flood line should not be encroached; authorization will be needed to conduct activities should such sensitive areas be prone to impacts.
- SAHRA permits should be obtained were heritage sites and the 50m buffer zones are potentially impacted.
- Undertake Environmental Performance Assessments against the EMP to ensure the correct implementation of all EMP measures.
- Record must be kept of the implementation of the EMP measures and monitoring of the efficiency of the implemented measures.
- Provide financial provision for the rehabilitation of the disturbed areas.
- The right holder should be held liable for reimbursing any losses incurred by landowners as a result of the proposed exploration activities.
- The rehabilitation plan should be considered as the first draft and a living document. All measures on the report should be implemented through the life of the operation; and
- All recommendations made in the report should be implemented and considered in the finalisation of the site layout plan and operational design of the proposed exploration activity.

30. Period for which the Environmental Authorisation (EA) is required.

Based on the prospecting works programme, the environmental authorisation is required for the duration of 5 years. The validity of the prospecting right may be extended annually for a period of not exceeding 3 years.

31. Undertaking

An undertaking that meets 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.

32. Financial provision

The financial provision estimated for rehabilitation is R 92 016,02 (Ninety-Two Thousand and Sixteen Rand and two cents) and will be provided upon request by the DMRE.

32.1. Explain how the aforesaid amount was derived.

The amount was derived from using the 2023 DMRE provided master rates on the quantum of financial provision table.

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

It is confirmed that this amount can be provided for, from the operating expenditure.

33. Specific Information required by the Competent Authority

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

Desktop studies are non-invasive and will not affect landowner or lawful occupier. The invasive drilling of the 20 boreholes is short term and restricted to the site, it was noted the proposed area is disturbed due to agriculture. Relevant legislature will be consulted on navigating buffer zones and sensitive areas, and groundwater resources pollution potential is low. The socio-economic aspects are positive, jobs will potentially be created.

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

Desktop studies are non-invasive and do not encroach on the prospecting area, thus no impact on any national heritage estate. Mitigation measures are proposed in **table 14** should such heritage resources be encountered.

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

This report consists of assessments of each identified activity with their associated potential impacts, risks, and alternatives. The significance of potentials impacts was assessed, including the option of not implementing the activities.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

35. Draft Environmental Management Programme

36. Details of the EAP

It is confirmed that the requirements for the provision of the qualifications and expertise of the EAPs are provided in Part A section (1).

37. Description of the Aspects of the Activity

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

38. Composite map

The project composite map is attached on the overleaf page

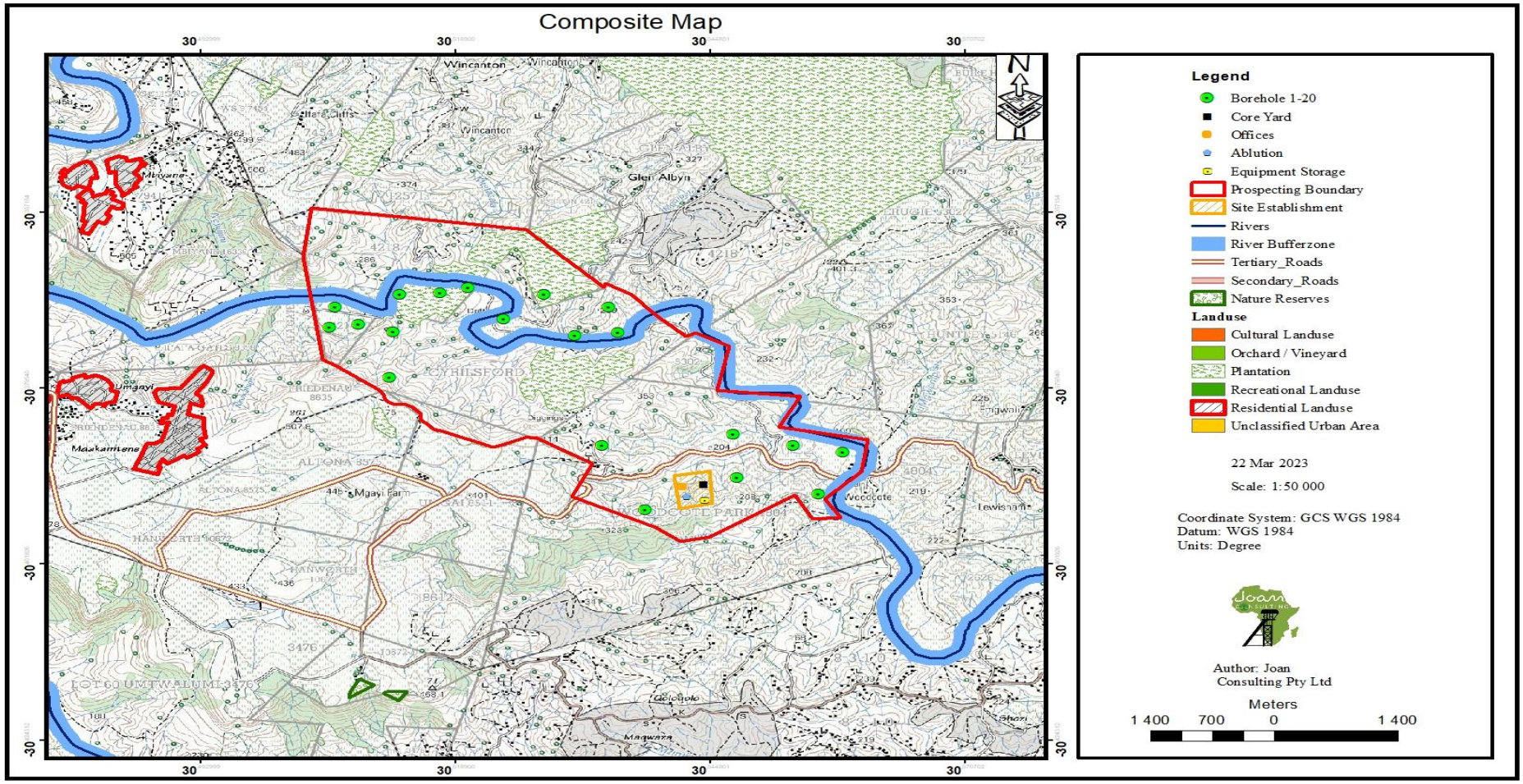


Figure 20:Composite Map

39. Description of Impact management objectives including management statements

39.1. Determination of closure objectives

Closure of each exploration site will entail rehabilitation of the disturbed areas to as close to their pre-exploration condition as possible. The closure-related objectives are as follows:

Fauna/flora

- Encourage revegetation and establishment of indigenous vegetation.
- Prevent proliferation of alien and invasive species
- Ensure the protection of species.

Land and soil

- Leave no open borehole on site (close the drill holes with concrete caps)
- Promote vegetation proliferation and cover exposed soil to prevent erosion.
- Revegetation to prevent dust emissions.

Waste material

- Remove all waste types and disposed of properly.
- Leave no residual impacts on the neighbouring farmers.
- Remove all machinery and equipment from site.

Water systems

- Protect surface and groundwater systems, prevent contamination, maintain their ecological status, and associated buffer zones.

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

The operation requires approximately 250 litres of water per day. However, water will be purchased form the local municipality and trucked in with a mini truck with a tanker 10 000 capacity. This quantity is for dust suppression and cooling down the rig.

40. Has a water use license has been applied for?

The proposed exploration activities do not trigger any water uses as per Section 21 of the National Water Act.

41. Impacts to be mitigated in their respective phases.

The Environmental Management Programme (EMPr) is the over-arching administrative and institutional document from which other documents take their authority. It is intended to be an overview document that specifies the on-site environmental management philosophy of the entire prospecting activities and the organisational structure necessary to achieve that vision. In addition, it specifies common environmental management and monitoring principles that will be applied to all aspects of the project. The EMPr provides mitigation and management measures for the following phases of the project:

- Construction
- Operational
- Decommissioning Phase

41.1. Construction phase

This section of the EMPr provides management principles for the construction phase of the project. Environmental actions, procedures and responsibilities as required within the construction phase are specified. These specifications will form part of the contract documentation and, therefore, the Contractor will be required to comply with the specifications to the satisfaction of the Project Manager in terms of the contract.

41.2. Operational Phase

The operational phase of the proposed project will continue to generate impacts that require attention. If proper management strategies are not implemented the impacts would accumulate and create environmental risks. This section will outline the measures to be implemented during the operational phase of the project.

41.3. Decommissioning Phase

The decommissioning phase of the exploration activities will see the decrease in negative impacts as the site will be under rehabilitation. Once rehabilitation is completed, the post operation impacts will be very minimal. It is to be noted that the decommission and rehabilitation process also have negative impacts, however such impacts are not of the magnitude of the operational phase. This section outlines mitigation measures that must implemented during the decommissioning phase of the project.

Table 16:Mitigation measures for Construction, Operational and Decommissioning phase of the project

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
CONSTRUCTION PHASE								
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Vegetation will be removed for site establishment purposes destroying environmental-natural habitat	0.432 ha	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) • No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a Prospecting to do so is has been granted and removal is undertaken by a specialist. • Prohibit the collection of plant material for medicinal purposes and firewood. • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity	12 - 24 Months	Good Environmental Practice	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil erosion as the results of exposed surface	0.432 ha	• Sensitive landscapes must be marked as NO-GO areas. • Immediately rehabilitate areas that have of been stripped of vegetation by rehabilitating. • Restrict impacts to prospecting activities footprint. • Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has been established. • Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water • Spill kits must be provided for onsite spill cleaning. Clean any oil spillages on site within 24 hours	12 - 24 Months	Good Environmental Practice	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil contamination by oil spills from vehicles and machinery	0.432 ha	• Any equipment that is leaking must be temporarily decommissioned and removed from the site, to a surface with an impermeable surface and waste water collection system. • Construct a concrete slab where any oil storage will be placed to avoid soil contamination by hydrocarbon leakage • Make all staff aware of the need to prevent spills, leaks and disposal of contaminated water onto the ground and ensure that they are adequately trained to take corrective action should an accidental spill occur • Provide drip trays for all parked vehicles	12 - 24 Months	Good Environmental Practice	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Air Quality	Clearing of vegetation and movement of vehicles for site establishment	Dust generation by movement of large vehicles delivering mobile facilities.	0.432 ha	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) • No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a license to do so is has been granted and removal is undertaken by a specialist • Prohibit the collection of plant material for medicinal purposes and fire wood • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity	Throughout Operational Phase	Minimal or no gaseous emissions to neighbouring farms and atmosphere	Contractor	Daily
Noise	Clearing of vegetation and movement of vehicles for site establishment	Noise will be generated from the operation of construction vehicles and machinery.	0.432 ha	• Working during the day time only minimise disruption of neighbours and animal life. • Service equipment, machineries, trucks and other vehicles regularly to minimise noise and where possibly place silencers on equipment / machinery • Provide ear plugs to the employee and ensure they wear them for the protection of their ears	Throughout Construction Phase	SANS 10103 Acceptable Ambient Levels and SANS 10210 of 2004, Noise Control Regulations -	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
				• Use equipment or machinery that complies with the manufacture's specifications acceptable noise level		General Notice R154 of 10 January 1992		
Soil and Groundwater	Clearing of vegetation and movement of vehicles for site establishment	Hydrocarbon spillages from the operations (machinery or vehicles) may seep into groundwater and contaminate the groundwater reserves in and around the area.	0.432 ha	• Vehicles must be restricted to travel on the designated roadways at the recommended times. • Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water • Provide drip trays for all parked vehicles • Place drip trays under parked vehicle to avoid soil contamination by hydrocarbon leakage by equipment/machinery	Throughout construction phase	Prevention of groundwater pollution in line with National Water Act (36 of 1998)	Contractor	Daily
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	The proposed activities may introduce or encourage (through disturbance) the	0.432 ha	• The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. • An alien invasive management programme must be implemented in order to control alien invasive	Throughout Construction Phase	Biodiversity and Mining Guideline 2013	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
	of declared weeds	establishment of alien vegetation in the area		species. All alien invasive tree & weed species growing in the areas disturbed by prospecting activities must be removed from the cleared area, and continuous monitoring should be conducted for three consecutive years after closure of each site. • Monitor the establishment of any foreign/alien invasive species on site and remove.				
Land Capability	Clearing of vegetation and movement of vehicles for site establishment	Should topsoil/fertile soil be lost, these activities may further reduce land capability of the area	0.432 ha	• Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity • Landowners must be consulted on where the different infrastructures can be placed. • Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity. • Topsoil and sub soil must be kept separately throughout drilling activities and rehabilitation • Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area. • Where soil nutrients and/or fertility has been lost,	Throughout Construction Phase	Soil Conservation	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
				the soil should be fertilised to recover cultivation capacity • Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity.				
Fauna	Clearing of vegetation and movement of vehicles for site establishment	Loss of faunal diversity may occur because of faunal collisions	0.432 ha	• Work during daytime to minimise the disruption animal life. Do not disturb nests, breeding sites or young animals. • Do not attempt to kill or capture snakes unless directly threatening the safety of employees. • Vehicles must be restricted to travel on the designated roadways to minimize the ecological footprint of the proposed development • Keep to the speed limit of 40 km/h on all roads running through and accessing the site to avoid driving over any fauna	Throughout Construction Phase	Biodiversity and Mining Guideline 2013	Contractor	Monthly
Safety	Clearing of vegetation and movement of vehicles for site establishment	• Personnel injuries from safety hazards on site; • Accidents	0.432 ha	• Ensure that workers and any persons accessing the site wear the correct PPE at all times • Compile a health and safety risk assessment of the site to identify all safety related hazards and risks • Educate all employees working on site, in the	Throughout Construction Phase	Occupational Health and Safety Standards	Contractor	Daily

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		because of moving vehicles; • Exposure to snakes and other wild animals on site		form of inductions/training or toolbox talks of the health and safety risks on site				
Heritage Resources	Clearing of vegetation and movement of vehicles for site establishment	• Impact on Heritage Resources	0.432 ha	• Should artefacts or archaeological items be observed, then all activity should cease immediately, the area marked off and a specialist consulted prior to any further activity • Should graves be observed on site during activity progress then all activity should cease and the area demarcated as a no-go zone	Throughout Construction Phase	Protection of archaeological materials	Client Contractor	Once-off
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	0.432 ha	• Use chance find procedure to cater for accidental finds	Throughout Operational Phase	Protection of archaeological materials	Client	Once off
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	0.432 ha	• Maintain 50m buffer zones for all burial sites • Burial sites must be mapped • Consult Landowners and farm workers to identify burial sites before prospecting	Throughout Operational Phase	Protection of archaeological materials	Client	Once off

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Cultural heritage	Clearing and prospecting	Destruction public monuments and plaques	0.432 ha	• Recorded landmarks are NO GO areas. • A 100m buffer zone to me provided for from the recorded monuments. • Engage traditional authorities to understand the extent of each protected historical site	Throughout Operational Phase	Protection of archaeological materials	Client	Once off
Traffic	Clearing of vegetation and movement of vehicles for site establishment	• Increased traffic	0.432 ha	• Speed limits must be established and limited to 40KM/h on site to minimise accidents • Traffic signs to be put around the site to notify motorists and drivers about the activities	Throughout Construction Phase	Smooth traffic flow	Contractor	Weekly Daily
Waste Management	Clearing of vegetation and movement of vehicles for site establishment	Generated Solid waste	0.432 ha	• Solid waste must be stored in a designated area for collection and disposal. These materials maybe sold to appropriate recycling traders or taken to recycling plant. • Ensure that there are suitable storage and collection facilities in place for general waste, recyclable and special wastes.	Throughout Construction Phase	Good House Keeping	Contractor	Daily
Air Quality and Noise	Clearing of vegetation and movement of vehicles for	• Dust Generation • Noise Generation	0.432 ha	• Dust suppression using water will be under taken to manage dust emitting from vegetation removal • Footprint earmarked for vegetation removal must be clearly marked	Throughout Construction Phase	Compliance with Ambient air and noise	Contractor	Throughout the life cycle of the prospecting

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
	site establishment			• Trucks, machinery, and equipment must be regularly serviced to reduce noise levels • Work should be conducted during day time only to minimise disruption of neighbours and animal life		quality Standards		work
Fauna	Clearing of vegetation and movement of vehicles for site establishment	Dispersing and disruption of animals	0.432 ha	• No wild animal may under any circumstance be handled, removed or be interfered with • No wild animal may be fed on site • No wild animal may under any circumstance be hunted, snared, captured, injured or killed • No wild animal may under any circumstance be hunted, snared, captured, injured or killed • Remove and dispose of any snares or traps found on or adjacent to the site	Throughout Construction Phase	Compliance with conservation of wild life Standards	Contractor	Throughout the life cycle of the prospecting work
Social	Clearing of vegetation and movement of vehicles for site establishment	Negatively impacting on Farmers livelihoods	0.432 ha	• The applicant must consult with the affected parties on which times are favourable for them before undertaking the activities which could negatively impact their livelihood. • The applicant must ensure that there is an insurance policy in place readily available to compensate for any loss on the farm caused by the proposed activities;	Throughout Construction Phase	Compliance with standards within the IDP	Contractor	Throughout the life cycle of the prospecting work

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Safety and Security	Clearing of vegetation and movement of vehicles for site establishment	Fear of farm attacks by farmers due to strangers in the area	0.432 ha	• All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms.	Throughout Construction Phase	Compliance with health and safety standards	Contractor and Applicant	Throughout the life cycle of the prospecting work
OPERATIONAL PHASE - DRILLING								
Clearing of Vegetation	Drilling Activities	Creating site offices, parking lots, ablution block which causes the clearing of vegetation.	0.432 ha	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) • Any sensitive or endangered tree species that is cleared should be kept for re-planting after operational phase • Prohibit the collection of plant material for medicinal purposes and fire wood • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity	6 - 12 Months During Operational Phase	Good Environmental Practice	Contractor	Weekly
Vegetation	Drilling Activities	Removal of the natural	0.432 ha	• It is advised that areas designated for vegetation clearing should be identified and visibly marked	During Operational	Biodiversity Act	Contractor	Weekly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		vegetation		off and also approved as part of final drilling map • Use already available farm roads and avoid creating new ones • Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites. • Exposed areas should be rehabilitated with indigenous plants to the project area as soon as construction is finished	Phase			
Vegetation	Drilling Activities	Disturbance to animals on site	0.432 ha	• Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. • Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal • A low speed of 40km/h limit must be enforced on site to reduce wild animal-vehicle collisions • No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. • Severe contractual fines must be imposed and	During Prospecting Activities	Biodiversity Act	Contractor	Weekly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
				immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. • Hunting weapons are prohibited on site. • Contract employees must be educated about the value of wild animals and the importance of their conservation. • The ECO must conduct regular site inspections of removing any snares or traps that have been erected. • Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage.				
Vegetation	Drilling Activities	Increased soil erosion, increase in silt loads and sedimentation	0.432 ha	• Following prospecting, rehabilitation of disturbed areas is required • Avoid areas with sensitive soils, steep slopes during rain or windy season. • Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration	During Prospecting Activities	Biodiversity Act	Contractor	Weekly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Vegetation	Drilling Activities	Establishment and spread of declared weeds	0.432 ha	• The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. • An alien invasive management programme should be developed and implemented in order to control alien invasive species	During Prospecting Activities	Biodiversity Act	Contractor	Weekly
Fire	Drilling Activities Drilling Activities	There is a potential for fire to occur on the site. Veld fires can occur across the vegetated areas of the property	0.432 ha	• Vegetation around proposed site must be kept short to create a fire management zone. • Open fire is prohibited to people involved in prospecting. • No burning cigarettes or matches may be thrown down within prospecting area. • Collection of fire wood is not allowed. • Rubbish or vegetation may under no circumstances be burnt • Training of staff will include awareness regarded the rules of the site.	During Prospecting Activities	National Forest Act (Act No. 84 of 1998)	Contractor	Monthly
Noise	Drilling Activities	Noise will be generated due to the operation of drilling	0.432 ha	• All equipment to be adequately maintained and kept in good working order to reduce noise. • Workers and personnel will wear hearing protection (ear plugs) when required.	During Prospecting Activities	SANS 10103 Acceptable Ambient Levels and	Contractor	Daily

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		machinery, trucks movement around the site and people on site		• Use equipment or machinery that complies with the manufacture's specifications acceptable noise levels • All vehicles and activities will only operate during daytime hours		SANS 10210 of 2004, Noise Control Regulations - General Notice R154 of 10 January 1992		
Soil	Drilling Activities	Exposure of soils stripped of vegetation during operational phase (drilling) will lead to soil erosion.	0.432 ha	• Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established. • Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion • Vehicles must travel on the designated roadways at the recommended. • Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles must be covered /protected to prevent erosion by wind and/or water	During Prospecting Activities	Prevention of groundwater pollution in line with National Water Act (Act No. 36 of 1998)	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Land Capability	Drilling Activities	Should topsoil/fertile soil be lost, these activities may further reduce land capability of the area	0.432 ha	• Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity • Landowners must be consulted on where the different infrastructures can be placed. • Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity • Topsoil and sub soil must be kept separately throughout prospecting activities and rehabilitation • Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area	During Prospecting Activities	Soil Conservation	Contractor	Monthly
Top Soil	Top soil Stockpiling during drilling	Dust generation from stockpiles	0.432 ha	• Prior prospecting, all topsoil must be stockpiled for use during the Rehabilitation Phase. • Stockpiled topsoil must be used as the final cover for all disturbed areas where re-vegetation is required. • Stockpiled soil must be protected by erosion-control berms if exposed for a period of greater than 14 days during the wet season.	During Prospecting Activities	Soil Conservation	Contractor	Daily

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
				• Soil stockpiles must be located away from drainage lines and areas of temporary inundation during the wet season. • If possible, seeding of the stockpiles with suitable local vegetation is recommended.				
Soil and Groundwater	Drilling activities	Hydrocarbon spillages from the operations (machinery or vehicles) may seep into groundwater and contaminate the groundwater reserves in the area.	0.432 ha	• Vehicles and equipment must be regularly serviced and maintained. • Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages; • Dip trays must be placed under parked vehicles and machinery • A spill kit must be available on each site where operation activities are in progress; and • Any spillages must be cleaned up immediately to prevent further contamination.	During Prospecting Activities	Prevention of Groundwater Pollution in line with National Water Act (Act No. 36 of 1998)	Contractor ECO	Monthly
Waste Management	Waste generation and storage during drilling	Solid waste such as debris and litter can be potentially generated and deposited in and	0.432 ha	• Littering must be prohibited, and all waste generated from the site should be cleared. A 'no waste dumping' sign must be placed on site. • Waste generated by workers must be collected and disposed of weekly at the nearest registered landfill.	During Prospecting Activities	Waste Management Regulation standards	ECO	Daily

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		around the site. This could potentially attract nuisance and affect the natural scenery/aesthetic quality of the site.		• Store waste in labelled containers, indicating clearly whether the waste is hazardous or non-hazardous (general waste). • Burning of waste material is not permitted. • Hazardous materials will be generated if there are spillages during operation and maintenance periods. This waste should be cleaned up using absorbent material provided in spill kits on site and must be disposed of accordingly at a hazardous waste landfill. • Absorbent materials used to clean up spillages must be disposed of in a separate hazardous waste bin.				
Heritage Resources	Discovery of graves and other heritage resources during drilling	Destruction of heritage resources	0.432 ha	• Should artefacts or archaeological items be observed, then all activity ought to cease immediately, the area marked off and a specialist consulted prior to any further activity. • Should graves be observed on site during activity progress then all activity must cease, and the area demarcated as a no-go zone	Throughout Operational Phase	Protection of archaeological materials	Client	Once off
Cultural heritage	Clearing and prospecting	Destruction of archaeological	0.432 ha	• A management plan for the site must be drawn. • Section where scatters of potsherds were	Throughout Operational	Protection of archaeologica	Client	Once off

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		remains		recorded must be avoided where possible. • An archaeologist must be appointed to monitor during prospecting. • Use chance find procedure to cater for accidental finds	Phase	l materials		
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	0.432 ha	• Maintain 50m buffer zones for all burial sites. • Burial sites must be mapped. • Consult Landowners and farm workers to identify burial sites before prospecting	Throughout Operational Phase	Protection of archaeological materials	Client	Once off
Air Quality	Drilling	During operation, activities may result in dust generation and the release of particulates into the area. Potential dust generation activities may include drilling,	0.432 ha	• Dust suppression measures such as spraying of water on site access route and around site must be implemented. • Limiting the number of vehicles driving on and offsite • Topsoil stockpiles or soil heaps must be watered to reduce dust emission • Keep to the speed limit of 40 km/h on all roads running through and accessing the site • Minimize the extent of cleared vegetation and exposed soil. Where possible, place protective nets over exposed soil.	Throughout Operational Phase	NEMA: Air Quality Act, 2004 (Act No. 39 of 2004)	ECO Contractor	Daily

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
		movement of vehicles and topsoil clearing						
Soil	Drilling Activities	Soil Erosion	0.432 ha	• Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established. • Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion. • Vehicles should be restricted to travel on the designated roadways at the recommended. • Topsoil should be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning.	Throughout Operational Phase	Soil Conservation	Contractor	Monthly
Soil	Drilling Activities	Soil Contamination	0.432 ha	• Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas • Vehicles must be restricted to travel on the designated roadways Provide drip trays for all parked vehicles	Throughout Operational Phase	Soil Conservation	Contractor	Monthly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
Emergency Procedures	Drilling Activities	Hydrocarbon spills	0.432 ha	• The source of the spill must be isolated and the spillage contained using sand berms, sandbags, sawdust, absorbent material and/or other materials approved by the Site Agent. • The area must be cordoned off and secured. • The Client and ECO must ensure that there is always a supply of absorbent material readily available to absorb/breakdown the spill. • The ECO must notify the relevant authorities of any spills that occurs. • The ECO shall assemble and clearly list the relevant emergency telephone contact numbers for staff and brief staff on the required procedures.	Throughout Operational Phase	Good House Keeping	Client ECO	Daily
Traffic	Drilling Activities	Increased in Traffic	0.432 ha	• Speed limits must be established and limited to 40KM/h on site to minimise accidents. • Traffic signs to be put around the site to notify motorists and drivers about the activities.	Throughout operational Phase	Smooth Traffic Flow	Contractor	Weekly Daily
DECOMMISIONING AND CLOSURE PHASE								
Rehabilitation	Rehabilitating of the disturbed and	• Revegetation of areas where	0.432 ha	• All areas that have been damaged by Prospecting activities and vehicles must be stabilized immediately after activities ceases to prevent and	After Decommission of	Good house keeping	ECO Contractor	Weekly

Aspect/Activity	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Responsibility	Monitoring frequency
	contaminated areas	vegetation was disturbed to restore ecosystem function and integrity. • Removal of all infrastructures onsite.		control erosion. Undertake concurrent rehabilitation throughout the operations. • Remove all vehicles, equipment, waste and surplus materials from the site • Clean up and remove any spills and contaminated soil on site. • Ensure that all actions identified in the site closure checklist have been completed and that the ECO is satisfied with the state of the site • Ensure that aftercare is provided, and the natural environment recovers and stabilizes after closure.	Prospecting Activities			
Soil, land use and land capabilities	Rehabilitation Activities	Soil and Land contamination from Hydrocarbon's spillages	0.432 ha	• Protect vegetation and soil by avoiding hydrocarbon spillages; • Vehicles must make use of existing roads to avoid destruction of vegetation; • Car tracks created by movement of vehicles must be rehabilitated	After Decommission of Prospecting Activities	Good house keeping	ECO Contractor	Weekly

42. Impact Management Outcomes

Refer to **table 16** on information regarding this section.

43. Impact Management Actions

Refer to **table 16** on information regarding this section.

44. Financial Provision

44.1. Determination of the amount of Financial Provision

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

Rehabilitation will be done with reference to the closure objectives.

- To remove all material used during the exploration process, this includes demarcation equipment, health and safety equipment, and drilling machines.
- To revegetate the disturbed area with indigenous vegetation, this prevents soil erosion.
- To prevent establishment of alien and invasive vegetation
- To limit and manage the visual impact of the exploration activities.
- To manage and limit the impact to the surface and groundwater resources.
- To leave no open borehole or trench on site. Close the drill holes with caps.
- To remove all waste types and disposed properly.

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

The Environmental Impact Assessment (EIA) process outlines the participation of I&APs. The EIA process states that the draft BAR and EMPr are subject to a 30-day review period by I&APs. Comments and responses from I&APs will be included in the final BAR and will be distributed to the municipality, district, and Landowners.

44.4. 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.

A total of 0.432 ha of land will be affected by the process of the proposed project. The table below outlines all activities involved in the application and their aerial extent relative to impact on land.

Table 17:Rehabilitation measures

Activity	**Aerial extent of the Activity Ha or m²**
Drill Site (borehole, sump, water cart, core tray & toilet)	0.2ha
Removal of vegetation	0.2ha
• Parking Bay	
• Site Office	
• Mobile Ablution	
• Equipment Storage	
Water Sump	0.032ha
Total Area to be cleared	**0.432ha**

The following rehabilitation plan will be implemented for the above -mentioned activities;

- All mobile ablution/toilets will be taken away from site and the area disturbed will be revegetated.
- Drill holes shall be capped by placing a steel casing to a suitable depth and concrete cap on top of the borehole.
- The equipment storage area will be decommissioned and removed from site. The disturbed area will be cleaned and ripped to aid revegetation.
- All infrastructure and machinery on the site camp shall be removed and area shall be ripped to promote revegetation.
- The temporary access road, single track or formal shall be ripped or ploughed, and where necessary fertilizer (based on soil analysis) applied to ensure the regrowth of vegetation;
- The areas shall be cleared of any contaminated soil.
- The site will be mulched using locally obtained grass; this is to stimulate the long-term establishment of indigenous vegetation and to reduce erosion during early plant growth
- Rehabilitation of the new topographical landscape will be conducted in such a way that it would blend in with the surrounding landscape and allow normal (controlled) surface drainage to continue.
- All illegal invader plants and weeds shall be eradicated as required in terms of Regulation 15 & 16 of the Act on Conservation of Agricultural Resources, 1983 (Act no. 43 of 1983) which list the plants.

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

It can be confirmed that the rehabilitation plan is compatible with the closure objectives. The rehabilitation plan ensures the site will be returned to its pre-activity state.

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

Financial provision required to rehabilitate the environmental has been calculated in table 15 above of this report.

Table 18: Financial Provision Calculation

Applicant:	**Afli Exploration 2 (Pty) Ltd**				**Ref: KZN30/5/1/1/2/11351**		
Evaluators:	**Lufuno Mutshathama**				**Date: May 2023**		
No.	**Description**	**Unit**	**A**	**B**	**C**	**D**	**E=A*B*C*D**
			Quantity	**Master**	**Multiplication**	**Weighting**	**Amount**
				Rate 2023	**factor**	**factor 1**	**(Rands)**
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	M^3	0	19.27	1	1	0.00
2 (A)	Demolition of steel buildings and structures	M^2	0	268.39	1	1	0.00
2(B)	Demolition of reinforced concrete buildings and structures	M^2	0	395.52	1	1	0.00
3	Rehabilitation of access roads	M^2	0	48.03	1	1	0.00
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	466.15	1	1	0.00
4 (B)	Demolition and rehabilitation of non-electrified railway lines	m	0	254.26	1	1	0.00
5	Demolition of housing and/or administration facilities	M^2	0	536.78	1	1	0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	281,385.87	1	1	0.00
7	Sealing of shafts adits and inclines	M^3	0	144, 08	1	1	0.00
8 (A)	Rehabilitation of overburden and spoils	ha	0	187,590.58	1	1	0.00
8 (B)	Rehabilitation of processing waste	ha	0	233,640.68	1	1	0.00

	deposits and evaporation ponds (basic salt producing waste)						
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic metal-rich waste)	ha	0	678,603.27	1	1	0.00
9	Rehabilitation of subsided areas	ha	0	157,078.86	1	1	0.00
10	General surface rehabilitation	ha	0.432	148,603.38	1	1	64 196,66
11	River diversions	ha	0	148,603.38	1	1	0.00
12	Fencing	m	0	169,51	1	1	0.00
13	Water management	ha	0	105,220.16	1	1	0,00
14	2 to 3 years of maintenance and aftercare	ha	0.432	19,776.12	1	1	8 543,28
15 (A)	Specialist study	Sum	1	0.00	1	1	0.00
15 (B)	Specialist study	Sum	1	0.00	1	1	0.00
					sum		**72 739,94**
			subtotal 1	**weighting factor 2**	1		72 739,94
1	Preliminary & General		10%				7 273,99
1	Contingencies		10%				7 273,99
			Subtotal 2				80 013,93
			VAT (15%)		15%		12 002,09
					Grand Total		**92 016,02**

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

The financial provision will be provided as determined upon request by the competent authority.

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

45.1. Monitoring of Impact Management Actions

Monitoring of the impact management actions will be done by the Environmental Control Officer and the project manager. It is therefore the responsibility of the contractor to ensure that all relevant measures are taken to rectify such damage, at the contractor's expense. It is the duty of the ECO to monitor compliance with the EMP, and report and notify the contractor of any non-compliance, highlighting the following:

- Details of the nature of the non-conformance.
- The actions to be taken to correct the situation; and
- The date by which each corrective action should be executed.

45.2. Monitoring and reporting frequency

Prospecting right Monitoring will be done monthly and the reporting to the competent authority will be done annually. Any non-compliances will be recorded, and plans of actions documented.

45.3. Responsible persons

All role players involved in this project must comply with the directives set out. A concise description of impacts and their mitigation/management measures will be provided and understood by all role players responsible for the implementation and monitoring of the mitigation measures. This project will comprise of the following responsible role players:

- Competent Authority (DMRE- KwaZulu Natal Regional Office)
- The Environmental Control Officer.
- The Contractor.
- The project manager and
- Prospecting Right Holder.

45.4. Time period for implementing impact management actions

The impact management actions must be implemented immediately or within a day of the approval of the Basic Assessment Report.

45.5. Mechanism for monitoring compliance

The mechanisms for monitoring compliance are outlined on the table below.

Table 19: Mechanisms for monitoring compliance

Activity	Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
Construction and operation	Noise generation (-ve)	• Maintain a complaint register that is made accessible to the locals. • Safety inspection to ensure all workers are wearing protective ear plugs during blasting operations	ECO and Project/Site Manager	• Monitor Monthly • Weekly reporting on any complaints
Construction and operation	Soil contamination by oil spills from vehicles (-ve)	• Daily inspection of operational equipment • Service vehicles timeously	ECO& Project Manager	• Daily inspection • Weekly reporting • Services vehicles within prescribed services periods • Immediate implementation of management actions
Construction and operation	Noise generation (-ve)	Maintain a complaint register that is made accessible to the locals	ECO& Project manager	Weekly reporting on any complaints
Construction and operation	• Solid waste such as debris and litter can be potentially generated and deposited in and around the site. This could potentially attract	Inspection of waste storage and ablution facilities and the general site inspection for any oil spillages	ECO & Project Manager	• Weekly monitoring • Monthly reporting • Immediate implementation of management actions

Activity	Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
	nuisance and affect the natural scenery / aesthetic quality of the site. • Contamination of soil and underground water by spills from mobile ablution facilities			
Construction and operation	Dust	• Safety inspections to ensure all workers are wearing protective gears during operation. • Inspection to ensure that roads and site are sprayed. Maintain a complaint register that is made accessible to the locals	ECO & Project Manager	• Monthly monitoring • Monthly reporting • Immediate implementation of management actions • Monthly reporting on any non-compliances • Daily monitoring
Construction and operation	Soil erosion and change in land capability	• Ensure concurrent rehabilitation is implemented throughout the life of the mine	• ECO& project Manager	Monthly reporting
Construction and operation	Safety and hazards	• Maintain an incidence register for any accidents or safety incidences	• ECO & Project Manager	Monthly reporting

Activity	Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
• Rehabilitating the camp site, rehabilitation of the disturbed and contaminated areas • Re-vegetation • Removal of all mobile infrastructure on site	• Recovery/ restoration of natural habitat • Dust dispersal	Inspection of rehabilitation on site and comparison of rehabilitation progress against rehabilitation plan	• ECO & Competent Authority • Safety officer /Occupational hygienist	• Annual inspection and reporting • Monthly

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

Performance Assessment audits are to be conducted as a requirement of EIA Regulations 2014 (as amended). An independent EAP should be appointed to audit the performance on activities proposed in the BAR and EMPr monthly.

47. Environmental Awareness Plan

An environmental control officer will undertake awareness of different environmental aspect and will train the employees on how to deal with emergency situations and how to remediate such emergencies.

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

An environmental awareness training course will be detailed to all the involved employees, this included the following:

- Informing workers and contractors on compliance with the EMPr
- Inform personnel on possible mitigation measures.
- Perform an induction on the following: project risks, health and safety, environmental protection, waste management, veld fires, faunal and floral protection, buffer zones, sensitive areas, and overall project practices.
- Awareness of mitigation measures on each proposed activity.
- Draw up an awareness plan and a frequency at which the plan will be communicated with personnel.

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

The applicant and or appointed environmental control officer must develop a guideline policy addressing all risks which must be adhered to every employee and everyone coming to site.

48. Specific information required by the Competent Authority

The financial provision will be reviewed and updated annually for submission to the DMRE. In addition, formal monitoring and performance assessment reviews of compliance will be undertaken annually.

49. Undertaking

The EAP herewith confirms.

- The correctness of the information provided in the reports ☒
- The inclusion of comments and inputs from stakeholders and I&APs ☒
- The inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
- 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 EAP

Joan Consulting (Pty) Ltd

Name of the Company

May 2023

Date

50. References

(https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/umzumbe_south-africa_946003)

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