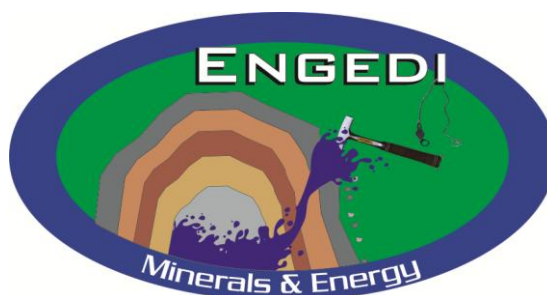


**SCOPING REPORT FOR THE APPLICATION
OF A MINING RIGHT SITUATED ON PORTION 15 OF THE
FARM LA RIVIERA 289 IN THE MAGISTERIAL DISTRICT
OF VIRGINIA, FREE STATE**

FOR

BUTI ENOCH PHAKOE

DMR REF. NO. FS 10043 EM



PREPARED BY: ENGEDI MINERALS AND ENERGY (PTY) LTD

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT SCOPING REPORT

PROPOSED PORTION OF PORTION 15 OF THE FARM LA RIVIERA 289

DMR REFERENCE NO: FS 10043 EM

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT INCLUDING TRENCHING IN CASES OF SAND

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: BUTI ENOCH PHAKOE

TEL NO: 076 228 6133

FAX NO: 086 725 9134

POSTAL ADDRESS: 2601 GELUKWAARTS, KROONSTAD, 9499

PHYSICAL ADDRESS: 2601 GELUKWAARTS, KROONSTAD, 9499

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1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a mining 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 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 SCOPING PROCESS

- 1) The objective of the scoping process is to, through a consultative process—
 - (a) identify the relevant policies and legislation relevant to the activity;
 - (b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
 - (c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
 - (d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
 - (e) identify the key issues to be addressed in the assessment phase;
 - (f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
 - (g) Identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

PROJECT DETAILS

Name of Project: Portion 15 of the farm La Riviera 289
Reference NO: FS 10043 EM
Name of Applicant: Buti Enoch Phakoe
Responsible person: Buti Enoch Phakoe
Physical Address: 2601 Gelukwaarts, Kroonstad, 9499
Postal Address: 2601 Gelukwaarts, Kroonstad, 9499
Telephone: 076 228 6133
E-mail: butiphakoe@gmail.com

Environmental Consultant (EAP): Tshimangadzo Mulaudzi
Responsible Person: Tshimangadzo Mulaudzi
Physical Address: 15 Barnes Street, Langebaan building,
Bloemfontein 9301
Postal Address: P.O. Box 22372, Extonweg, 9313
Telephone: 079 362 6046
Facsimile: 086 556 2568
E-mail: info@engedime.com
Expertise of EAP: Refer to Appendix 1 on the expertise of EAP

SCOPING REPORT

3. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of:

i. The Environmental Assessment Practitioner (EAP) who prepared the report

Name of the Practitioner:	Tshimangadzo Mulaudzi
Tel No.:	079 362 6046 / 051 430 1748
Fax No.:	086 556 2568
e-mail address:	info@engedime.com

ii. Expertise of the EAP

(1) The qualifications of the EAP

Honours Degree in Mining and Environmental Geology

(2) Summary of the EAP's past experience.

(Attach the EAP's curriculum vitae as **Appendix 1**)

Tshimangadzo hold an Honours Degree in Mining and Environmental Geology from the University of Venda. He has since been working as an environmental geologist and environmental practitioner. He has 5 years' experience in Environmental Science, 3 years' experience in Geology, and 5 years' experience in public participation.

Tshimangadzo has been carrying out Environmental Impact Assessment Procedure since 2012, managing a construction company called Tshedza Concrete Art in Limpopo Province, Makhado Town.

In 2014, he joined a large mining consulting company in Kimberly called Breeze Court Investments 47 (Pty) Ltd (Geologist and Mining Consulting firm). This is where Mr Mulaudzi acquired in-depth experience and know how in the mining consulting business by assisting the large to small scale mining companies to obtain mining right, mining rights, mining permits, technical co-operate permits, reconnaissance permits, exploration rights, production rights, integrated water use license, environmental authorisation among other licenses.

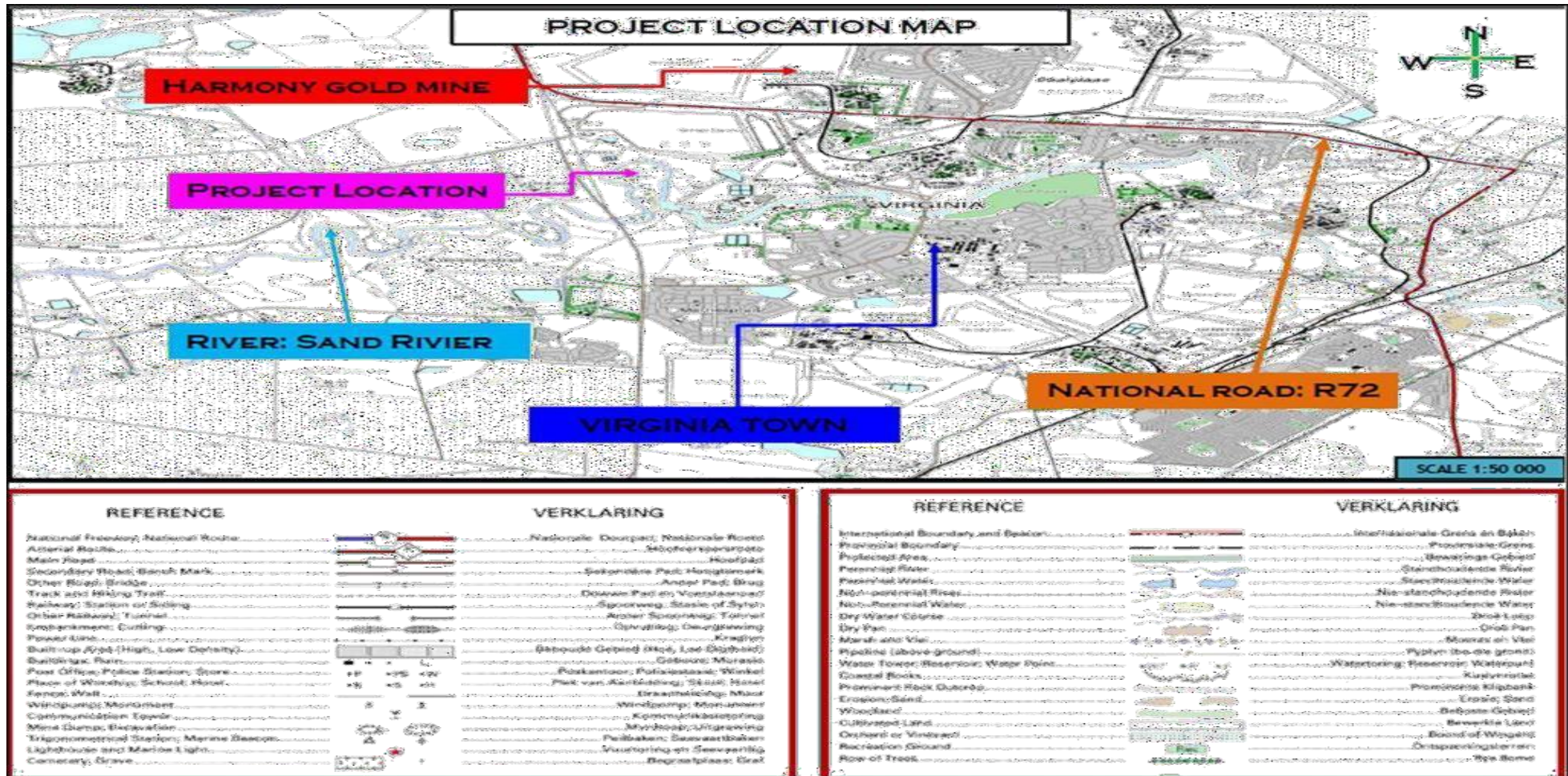
Tshimangadzo has five years working experience in environmental, geology and public participation.

b) Description of the property

Farm Name:	Portion 15 of the Farm La Riviera 289
Application area (Ha)	127 Ha
Magisterial district:	Virginia, Free State Province
Distance and direction from nearest town	± 6 km South of the town of Virginia (respectively)
21 digit Surveyor General Code for each farm portion	F03500000000028900015

c) Locality map

(Shows nearest town, scale not smaller than 1:250000 attached as Appendix 4).



d) Description of the scope of the proposed overall activity

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

Mining Right

- The proposed mining activity for sand will be through pumping from the river to the washing area which will be 300 meters away. Where it will then be washed and stockpiled.
- Sand varying in coarseness to be loaded into a screening and washing plant.
- At the plant site, the raw material will be screened from where it will be stockpiled, from the stockpiling transported as product to the relevant industry
- The waste accumulated after the washing of the sand will be pumped into the slum-dam which will be situated 20 meters from the washing area, where it will be stored until the clean water to be pumped back into the river.
- The screened and washed sand will be stockpiled at its designated area where it will be ready for the front end-loader and transportation trucks.
- All waste and unscreened sand will be used for rehabilitation purposes or for the construction of protective berms, settling dams etc.
- Slime, as a result of the wash plant, is pumped to the settling dams and access water discharged into the sand river.
- The front end-loader will load the sand to the screening/crushing plant which is fed at a rate of 10m³ an hour, 100m³ a day and 2 000m³ a month.
- All the overburden/waste from the screening/crushing plant will be first placed back into the bottom of the existing dongas erosion that occur periodically, hereafter the topsoil will be placed back as growth medium.
- Already established gravel roads by the previous mining company will be used off ramping on R730.

The following equipment will be used: pumping machine, front end-loader, dumper and 1xChieftan screening/crushing plant

Figure 1: The proposed layout map.



i. Listed and specified activities

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

<p>NAME OF ACTIVITY (E.g. For mining - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. for mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stored, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>Aerial extent of the Activity Ha or m²</p>	<p>LISTED ACTIVITY (Mark with an X where applicable or affected).</p>	<p>APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)</p>	<p>WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)</p>
<p>The development of infrastructure exceeding 1 000 meters in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 meters or more; or (ii) with a peak throughput of 120 liters per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.</p>	<p>0.05 Ha</p>	<p>X</p>	<p>Listing Notice 1 Activity No. 9</p>	
<p>The development of— f1f1 □ dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square meters; or f1f1 □ infrastructure or structures with a physical footprint of 100 square meters or more; where such development occurs— a) within a watercourse;</p>	<p>0.08 Ha</p>	<p>X</p>	<p>Listing Notice 1 Activity No. 12</p>	

<p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 meters of a watercourse, measured from the edge of a watercourse; — excluding—</p> <p>(aa) the development of infrastructure or structures within existing ports or harbors that will not increase the development footprint of the port or harbor;</p> <p>(bb) where such development activities are related to the development of a port or harbor, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>				
<p>The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic meters or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.</p>	0.02 Ha	X	Listing Notice 1 Activity No. 13	
<p>The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse; but excluding where such infilling, depositing,</p>	0.04 Ha	X	Listing Notice 1 Activity No. 19	

<p>dredging, excavation, removal or moving—</p> <ul style="list-style-type: none"> fi <input type="checkbox"/> will occur behind a development setback; fi <input type="checkbox"/> is for maintenance purposes undertaken in accordance with a maintenance management plan; fi <input type="checkbox"/> falls within the ambit of activity 21 in this Notice, in which case that activity applies; fi <input type="checkbox"/> occurs within existing ports or harbors that will not increase the development footprint of the port or harbor; or fi <input type="checkbox"/> where such development is related to the development of a port or harbor, in which case activity 26 in Listing Notice 2 of 2014 applies 				
<p>Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the MPRDA, including</p> <ul style="list-style-type: none"> (a) associated infrastructure, structures and earthworks, directly relate to prospecting of a mineral resources; (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing, but excluding the secondary processing of a mineral resource, including smelting, beneficiation, reduction, refining, calcining or gasification of a mineral resource in which case activity 6 in Listing Notice 2 applies 	0.02 Ha	X	Listing Notice 1 Activity No. 21	
<p>The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2 000 cubic meters but less than 15 000 cubic meters.</p>	0.02 Ha	X	Listing Notice 1 Activity No. 25	X
<p>The clearance of more than 1 hectare of indigenous vegetation</p>		X	Listing Notice 1	

			Activity No. 27	
The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic meters.		X	Listing Notice 2 Activity No. 4	X
The development of facilities or infrastructure for any process or activity which requires a permit or license or an amended permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding— (i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic meters or less; or (iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic meters per day.	0.08 Ha	X	Listing Notice 2 Activity No. 6	X
The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous		X	Listing Notice 2 Activity No. 15	

vegetation is required for- (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan				
The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of 15 000 cubic meters or more.		X	Listing Notice 2 Activity No. 25	X

ii. Description of the activities to be undertaken

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity)

The proposed mining activity for sand will be through pumping from the river to the washing area which will be 300 meters away. Where it will then be washed and stockpiled. Sand varying in coarseness will be loaded into a screening and washing plant. At the plant site, the raw material will be screened from where it will be stockpiled, from the stockpiling transported as product to the relevant industry. The waste accumulated after the washing of the sand will be pumped into the slum-dam which will be situated 20 meters from the washing area, where it will be stored until the clean water to be pumped back into the river. The screened and washed sand will be stockpiled at its designated area where it will be ready for the front end-loader and transportation trucks. All waste and unscreened sand will be used for rehabilitation purposes or for the construction of protective berms, settling dams etc. Slime, as a result of the wash plant, is pumped to the settling dams and access water discharged into the sand river. The front end-loader will load the sand to the screening/crushing plant which is fed at a rate of 10m^3 an hour, 100m^3 a day and $2\ 000\text{m}^3$ a month. All the overburden/waste from the screening/crushing plant will be first placed back into the bottom of the existing dongas erosion that occur periodically, hereafter the topsoil will be placed back as growth medium. Already established gravel roads by the previous mining company will be used off ramping on R730.

The following equipment will be used: pumping machine, front end-loader, dumper and 1xChieftan screening/crushing plant

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT <small>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</small>	REFERENCE WHERE APPLIED
MPRDA (Act no. 28 of 2002, as amended by Act No. 49 of 2008)	All phases
NEMA (Act No. 107 of 1998), EIA regulations, 2014	All phases
National Water Act (Act No. 36 of 1998)	All phases
Mine Health and Safety Act, Act No. 29 of 1996	All phases
National Environmental Management: Biodiversity Act (Act No.10 of 2004)	All phases
National Heritage Resources Act (Act No. 25 of 1999)	All phases
National Forests Act (Act No. 84 of 1998)	All phases
National Environmental Management: Waste Act (Act No.59 of 2008)	All phases
Water Services Act, (Act No. 108 of 1997)	All phases
Subdivision of Agricultural Land Act, (Act No. 70 of 1970)	All phases
Spatial Planning and Land Use Management Act, (Act No. 16 of 2013)	All phases
Regulations on the Use of Water for Mining and Related Activities aimed at the Protection of Water Resources (Regulation 704)	All phases

f) Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Project need and desirability

Mining is of great importance to the South African economy. With the increasing demand in construction, sand mining has become one of the lucrative small scale mining opportunities. Not only does it meet market demand but the economic contribution to the local economy is significant. The local market includes local hardware and brick manufacturing companies together with local construction companies. Potential impact on the social, social, cultural and environmental aspects was identified. These impacts were assessed for their effect on the social, cultural and environmental aspects. The significance of the impacts was also determined.

Mitigation measures are aimed at lessening negative consequences of the proposed mining operation. The mitigation measures include designs and management practices that will be embarked on, to prevent the identified impacts on the social, cultural and environmental aspects. For each significance identified, mitigation measures were specified. These mitigation measures are described in more detail in the environmental management programme.

Opportunities that exist within mining are as follows:

- Constant demand on the market for commodities;
- Establishment of a permanent working group between the Municipality and the mine managers responsible from developing local economic development initiative;
- Encourage local SMME's and entrepreneurs to take advantage of procurement;
- Develop a database of available labour and skills to encourage the employment of local people;
- Provide skills training and support programmes;
- Instigate mining procurement opportunities in consultation with the mines, develop a database of such opportunities and ensure that this information is made available to local businesses and communities.

For these to be achievable, investment and skills development, technology and infrastructure, as well as broadening of the supplier base, will need to be addressed. Due to the increased mechanization of mining activities, there has been an overall jobless growth within this sector. Rand volatility of late has not made things easier. The lack of diversification within the industry has led to a mainly commodity export driven industry.

Benefits of the project

Benefits of the project may include increased employment of local residents in the area, greater economic input into the area allowing better development of the towns and surrounding area, and greater socio-economic stability.

g) Period for which the environmental authorisation is required

The required period is 30 years.

h) Description of the process followed to reach the proposed preferred site

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration:

- The comparison of the originally proposed site plan,
- The comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and
- The consideration of alternatives to the initially proposed site layout as a result.

i) Details of all alternatives considered.

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

- (a) The property on which or location where it is proposed to undertake the activity;
- (b) The type of activity to be undertaken;
- (c) The design or layout of the activity;
- (d) The technology to be used in the activity;
- (e) The operational aspects of the activity; and
- (f) The option of not implementing the activity.

If the project were not to proceed, the additional economic activity, skills development and available jobs would not be created, the reserves would remain unutilised, the current land uses and economic activities would continue as at present, with little or no economic growth developing in the region. There are currently no foreseeable significant environmental impacts that will outweigh the economic benefits that would be generated by the project; however this will be further assessed during the Environmental Impact Assessment (EIA).

If the proposed mining activities were not to proceed, mining activities would not necessarily be avoided, as another application in terms of the MPRDA (Act no. 28 of 2002) can be made by another company. Unless the government declares the area “off limits” to mining, mining houses will continue to attempt to mine the resources found on the property.

ii) Details of the Public Participation Process Followed

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

Engedi Minerals and Energy was appointed by **Buti Enoch Phakoe** as the independent consultant to conduct the Public Participation process as part of the EIA as stipulated in Sections 56 - 59 of the NEMA (Act no. 107 of 1998) as well as in Section 22 of the MPRDA (Act No. 28 of 2002).

As stipulated in the MPRDA (Act no. 28 of 2002) and in Regulation 49(1) (f) (MPRDA Regulation GN R527), Interested and Affected Parties (I&APs) need to be notified and consulted with, as part of an application for a Mining Right.

i) Identification of Interested and Affected Parties

The following categories of stakeholders will be identified:

- The landowner/s of Portion 15 of the farm La Riviera 289 (the area included in the Mining Right Application i.e. the site).

In addition other potential stakeholders will be identified and invited to register themselves as I&APs. This invitation will also be extended to the public by means of site notices and newspaper notices.

Landowner/s & lawful occupiers of the site

The title deed owners of the application area will be listed in the table below. According to the title deed ownership records, the landowner of the application area is a private landowner.

FARM NAME	PORTION	EXTENT (Ha)	OWNER	TITLE DEED NUMBER
La Riviera 289	15	127.8208	IAN TRUST	T5316/2014

The landowner of the application area has been informed of the proposed mining activities and the process to follow.

j) Summary of issues raised by I&APs

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

The public participation report is attached as **appendix 5**.

THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE SITES

3.1 BASELINE ENVIRONMENT

(a) Type of environment affected by the proposed activity

(Its current geographical, physical, biological, socio- economic and cultural character)

3.1 .1 Physical Environment

Location

Lejweleputswa District Municipality has been established in terms of section 14 of the Local Government: Municipal Structures Act, Act No 117 of 1998 and was published in the Provincial Gazette No 109 dated 28 September 2000 and came into being on 06 December 2000.

The district is one of the four district municipalities in the Free State. The area of jurisdiction of Lejweleputswa District Municipality includes the following five municipalities: Masilonyana; Tokologo; Tswelopele; Matjhabeng; and Nala.

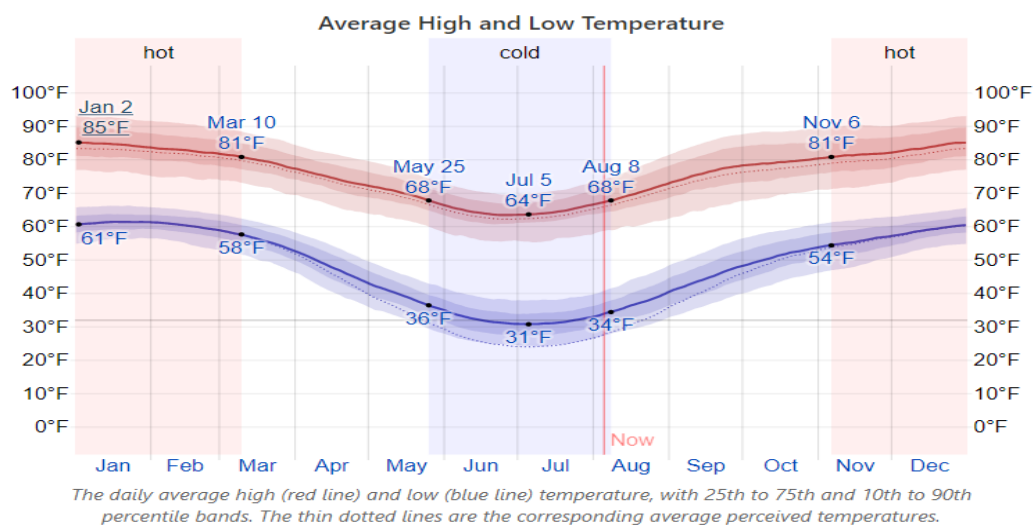


Figure 2: The location of the Matjhabeng local Municipality within the Lejweleputswa District Municipality.

Climate

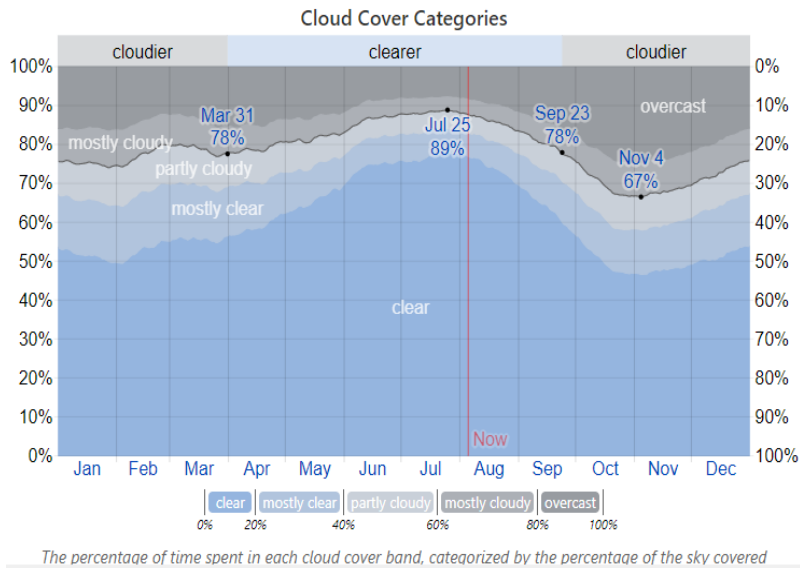
Temperature

The hot season lasts for 4.1 months, from November 6 to March 10, with an average daily high temperature above 81°F. The hottest day of the year is January 2, with an average high of 85°F and low of 61°F. The cold season lasts for 2.5 months, from May 25 to August 8, with an average daily high temperature below 68°F. The coldest day of the year is July 5, with an average low of 31°F and high of 64°F.



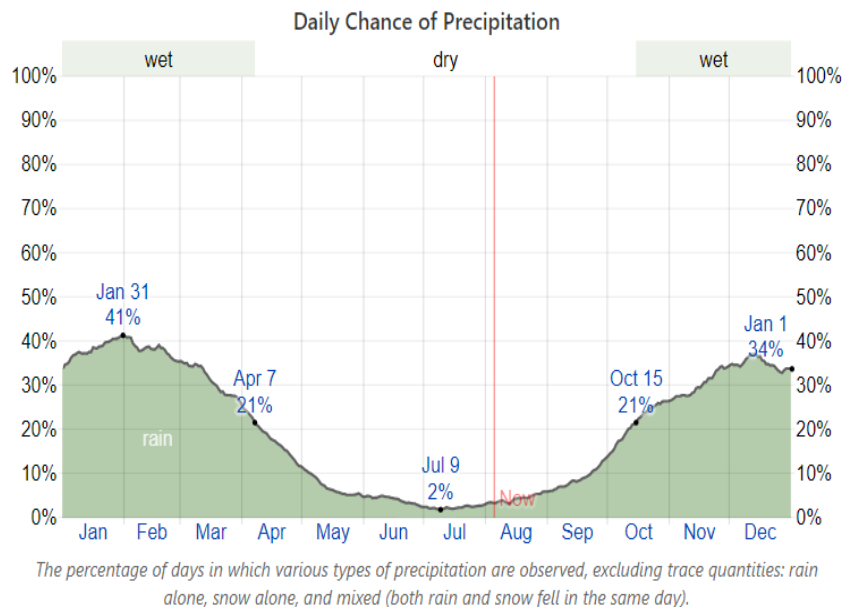
Clouds

In Virginia, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Virginia begins around March 31 and lasts for 5.8 months, ending around September 23. On July 25, the clearest day of the year, the sky is clear, mostly clear, or partly cloudy 89% of the time, and overcast or mostly cloudy 11% of the time. The cloudier part of the year begins around September 23 and lasts for 6.2 months, ending around March 31. On November 4, the cloudiest day of the year, the sky is overcast or mostly cloudy 33% of the time, and clear, mostly clear, or partly cloudy 67% of the time.



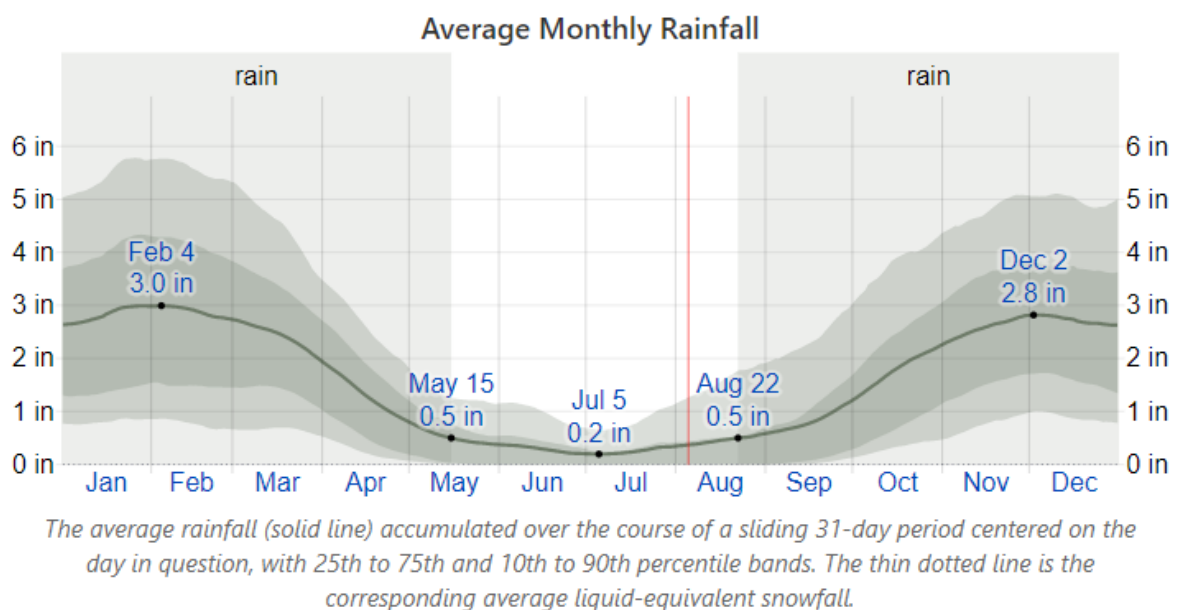
Precipitation

A wet day is one with at least 0.04 inches of liquid or liquid-equivalent precipitation. The chance of wet days in Virginia varies significantly throughout the year. The wetter season lasts 5.8 months, from October 15 to April 7, with a greater than 21% chance of a given day being a wet day. The chance of a wet day peaks at 41% on January 31. The drier season lasts 6.2 months, from April 7 to October 15. The smallest chance of a wet day is 2% on July 9. Among wet days, we distinguish between those that experience rain alone, snow alone, or a mixture of the two. Based on this categorization, the most common form of precipitation throughout the year is rain alone, with a peak probability of 41% on January 31.



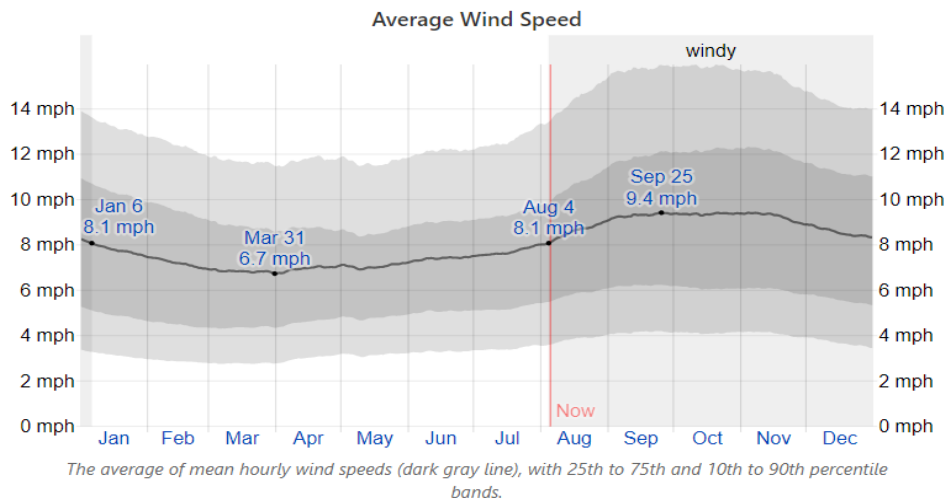
Rainfall

To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. Virginia experiences significant seasonal variation in monthly rainfall. The rainy period of the year lasts for 8.8 months, from August 22 to May 15, with a sliding 31-day rainfall of at least 0.5 inches. The most rain falls during the 31 days centered around February 4, with an average total accumulation of 3.0 inches. The rainless period of the year lasts for 3.2 months, from May 15 to August 22. The least rain falls around July 5, with an average total accumulation of 0.2 inches.



Wind

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Virginia experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 5.0 months, from August 4 to January 6, with average wind speeds of more than 8.1 miles per hour. The windiest day of the year is September 25, with an average hourly wind speed of 9.4 miles per hour. The calmer time of year lasts for 7.0 months, from January 6 to August 4. The calmest day of the year is March 31, with an average hourly wind speed of 6.7 miles per hour.



Topography and Elevation

The topography within 2 miles of Virginia contains only modest variations in elevation, with a maximum elevation change of 200 feet and an average elevation above sea level of 4,331 feet. Within 10 miles contains only modest variations in elevation (571 feet). Within 50 miles contains significant variations in elevation (1,302 feet).

The area within 2 miles of Virginia is covered by artificial surfaces (90%), within 10 miles by cropland (50%) and grassland (28%), and within 50 miles by grassland (48%) and cropland (47%)

1.4.1 Biological Environment

Vegetation Assessment

Highveld Alluvial Vegetation is distributed in Free State, North west, Mpumalanga and Gauteng Provinces, as well as in Lesotho and Swaziland where it occurs along alluvial drainage lines and floodplains along rivers embedded within the Grassland Biome and marginal (eastern) units of the Kalahari (Savanna Biome). It occurs at an altitude range of 1,000-1,500m within a flat topography supporting riparian thickets, which are mostly dominated by *Vachellia karroo*, accompanied by seasonally flooded grassland and disturbed herb lands that are often dominated by alien plants.

Vegetation Map of a Portion of Portion 15 of the Farm La Riviera 289

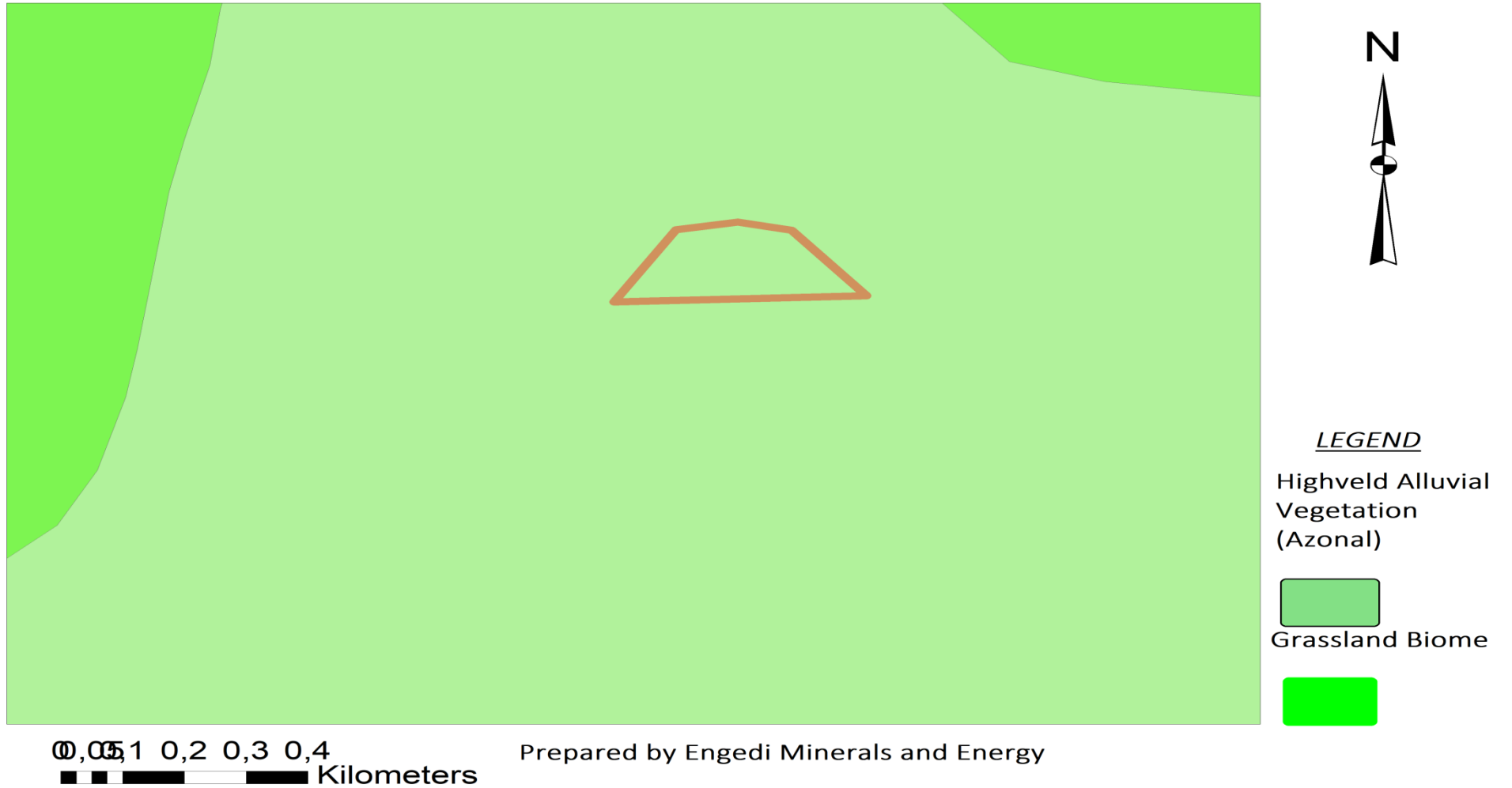


Figure 3: Vegetation Map of the area under application.

Faunal Assessment

A desktop search for expected species and identified species as well as the identification of any Red Data or Species of Conservation Concern (SCC) present or potentially occurring in the area was conducted. Emphasis was placed on the probability of occurrence of species of provincial, national and international conservation importance. Table 7 summarises the diversity of fauna that is expected to occur in the application area.

Table 1: Animal groups considered for this study along with the total species possibly occurring in or near the application area and how many of these species are SCC.

Animal Group	Total Species	Species of Conservation Concern
Avifauna	266	22
Mammals	73	10
Reptiles	28	2
Amphibians	20	1

Avifauna

Based on the South African Bird Atlas Project, Version 2 (SABAP2) database, 266 bird species are expected to occur in the vicinity of the application area. Of the expected bird species, 22 species are listed as SCC either on a regional scale or international scale. The SCC includes the following:

- Four species that are listed as Endangered (EN) on a regional basis
- Six species that are listed as Vulnerable (VU) on a regional basis
- Twelve species that are listed as Near Threatened (NT) on a regional basis. •

Important Bird Areas

Important Bird Areas (IBAs) are the sites of international significance for the conservation of the world's birds and other conservation significant species as identified by BirdLife International. These sites are also all Key Biodiversity Areas; sites that contribute significantly to the global persistence of biodiversity (BirdLife, 2017). According to BirdLife International (2017), the selection of Important Bird and Biodiversity Areas (IBAs) is achieved through the application of quantitative ornithological criteria, grounded in up-to-date knowledge of the sizes and trends of bird populations. The criteria ensure that the sites

selected as IBAs have true significance for the international conservation of bird populations and provide a common currency that all IBAs adhere to, thus creating consistency among, and enabling comparability between, sites at national, continental and global levels.

Mammals

The International Union for Conservation of Nature (IUCN) Red List Spatial Data (IUCN, 2017) lists 73 mammal species that could be expected to occur within the vicinity of the application area. Of these species, 8 are medium to large conservation dependant species, such as *Ceratotherium simum* (Southern White Rhinoceros) and *Equus quagga* (Plains Zebra) that, in South Africa, are generally restricted to protected areas such as game reserves. These species are not expected to occur in the project area and are removed from the expected SCC list. Of the remaining 65 small to medium sized mammal species, 10 are listed as being of conservation concern on a regional or global basis.

The list of potential species includes:

- One that is listed as Endangered (EN) on a regional basis
- Four that are listed as Vulnerable (VU) on a regional basis
- Five that are listed as Near Threatened (NT) on a regional scale

Reptiles

Based on the IUCN Red List Spatial Data (IUCN, 2017) and the ReptileMAP database provided by the Animal Demography Unit (ADU, 2017) 28 reptile species are expected to occur in the application area. Two reptile species of conservation concern are expected to be present in the application area, namely *Smaug giganteus* (Sungazer or „Ouvolk“) and *Chamaesaura aenea* (Coppery Grass Lizard). *Smaug giganteus* (Sungazer or „Ouvolk“) is categorised as Vulnerable on both a regional and an international scale, and is endemic to South Africa. *Chamaesaura aenea* (Coppery Grass Lizard) is categorised as near threatened on both an international and a regional scale.

Conservation areas

Highveld Alluvial Vegetation is classified as Least Threatened, with a conservation target of 31%. Only nearly 10% of the vegetation type is statutorily conserved in Barberspan (a Ramsar site), Faan Meintjie, Sandveld, Schoonspruit, Soetdoring and Wolwespruit Nature

Reserves. More than a quarter has been transformed for cultivation and by building of dams (Bloemhof, Erfenis, Krugersdrif, Mockes and Vaalharts Dams). The Highveld alluvia are prone to invasion by a number of weeds, obviously encouraged by the high nutrient status of the soils and ample water supply. Woody plants such as *Salix babylonica*, *Schinus molle*, *Melia azedarach*, *Celtis sinensis*, *Morus alba*, *Populus x canescens*, *Nicotiana glauca* and *Nicotiana longiflora* and forbs such as *Argemone ochroleuca*, *Chenopodium strictum*, *Conyza canadensis*, *Datura stramonium*, *Melilotus alba*, *Oenothera indecora*, *Paspalum dilitatum*, *Paspalum urvillei*, *Pennisetum clandestinum*, *Tagetes minuta*, *Verbena bonariensis*, *Xanthium strumarium* and *Zinnia peruviana* often dominate either the riverine thickets or grasslands or form ruderal communities in disturbed habitats. The undergrowth of the alluvial riparian thickets and the accompanying grasslands suffer from heavy overgrazing in many places (Mucina & Rutherford, 2006).

2.4.1 Surface water

The application area falls within the Vaal Water Management Area (WMA 5) which includes rivers such as the Vaal, Wilge, Liebenbergsvlei, Mooi, Renoster, Vals, Sand, Vet, Harts and Molopo rivers. According to the South African Mine Water Atlas (SAMWA, 2018), the catchment of the proposed Mining Right Area is of moderate ecological sensitivity.

The water resources of the Vaal River system support major economic activities. The Vaal River system has extensive water resource infrastructure and is linked by substantial transfer systems to other water resource systems (Thukela, Usutu, Lesotho). There are also significant transfers out of the Vaal catchment through the distribution system of Rand Water to the Crocodile West and Marico catchments.

The proposed area is along the sand river.

3.4.1 Socio-economic setting

Population

The Free State population growth rate is slower than the national rate, although the gap has been narrowing in the past ten (10) years.

Total: 11 260

Density: 2 200/km²

Race

The races that compromise the total population are the following:

POPULATION GROUP	PERCENTAGE
Black African	92.5%
Coloured	0.6%
Indian or Asian	0.4%
White	6.4%

Language

The languages spoken by the population are the following:

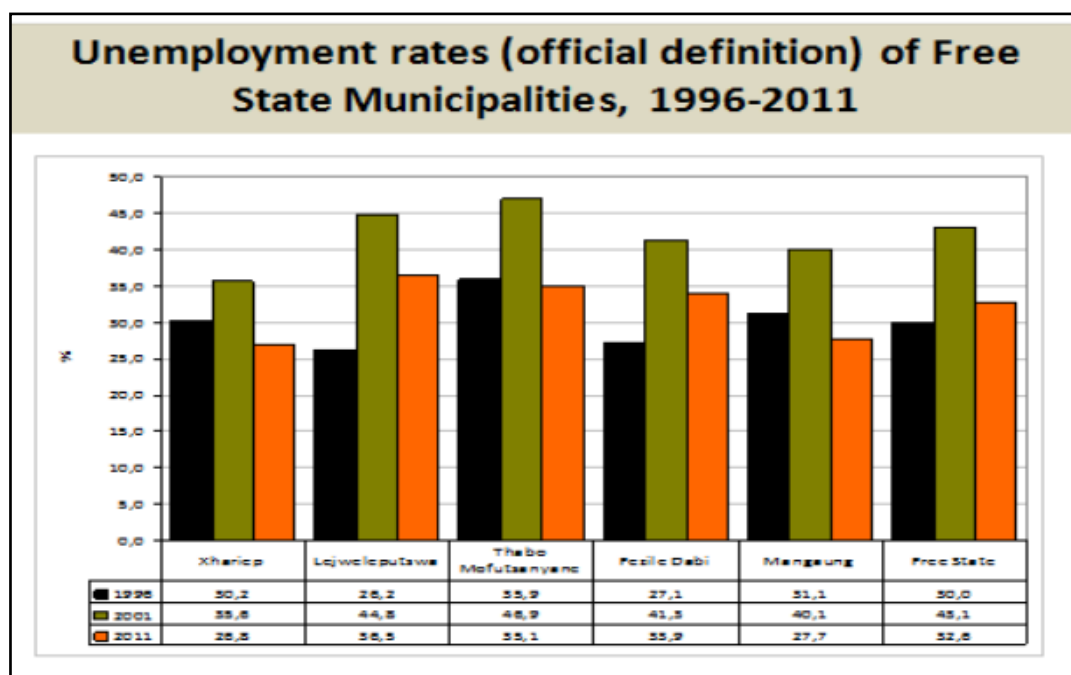
FIRST LANGUAGE	PERCENTAGE
Sotho	82.4%
Afrikaans	8.1%
isiXhosa	3.4%
English	2.8%
Other	3.4%

Economy (Matjhabeng Local Municipality)

Economic factors also played a role and a number of towns originated as service centres for the surrounding farming community of the town resulted in a fast growing city where economies of scale started to play a role. The mining sector has been in a process of restructuring for some years and is still retrenching staff, which is particularly affecting the mining towns of Welkom, Virginia, Odendaalsrus and Allanridge. The sudden surge in petrol prices nationwide would indeed exacerbate the already negative economic growth in the area in terms of employment opportunities. It is also estimated that most of the retrenched labour, mainly unskilled, remains in the region and adds to the social problems associated with declining economic conditions. As local municipalities plan, it is incumbent upon all of us to ensure that we take into account estimated figures of retrenched staff to project future service delivery demands. This will be reinforced by the development of an indigent policy and implementation of the same.

Employment status

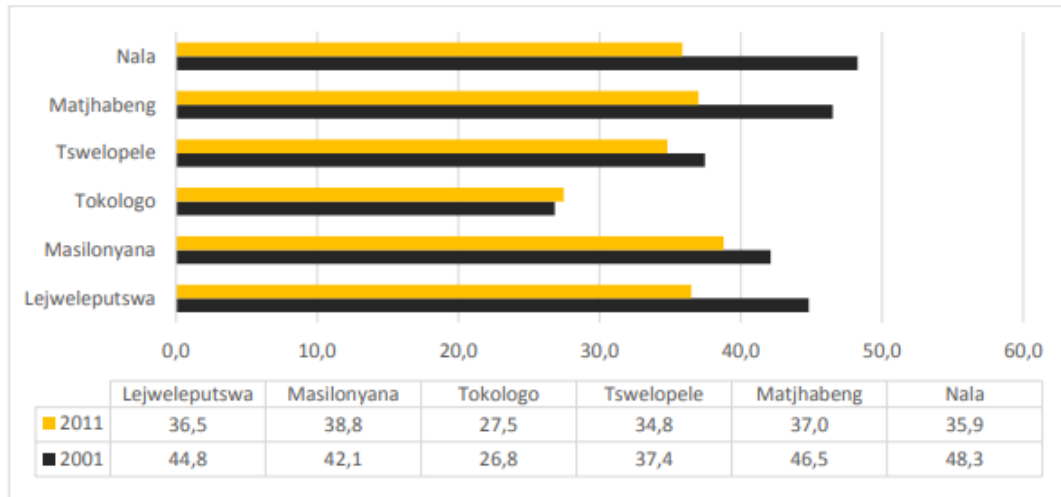
The district is one of the worst municipalities with highest rate of unemployment in the Free State province in the 2011 census. It is standing at 36.5%. Although the picture for all municipalities is not satisfying, in the Free State, Lejweleputswa has the highest numbers of unemployment. This must be attributed partly to mining closures. The revival of the district agency must be to establish some form employment opportunities in the district.



Youth

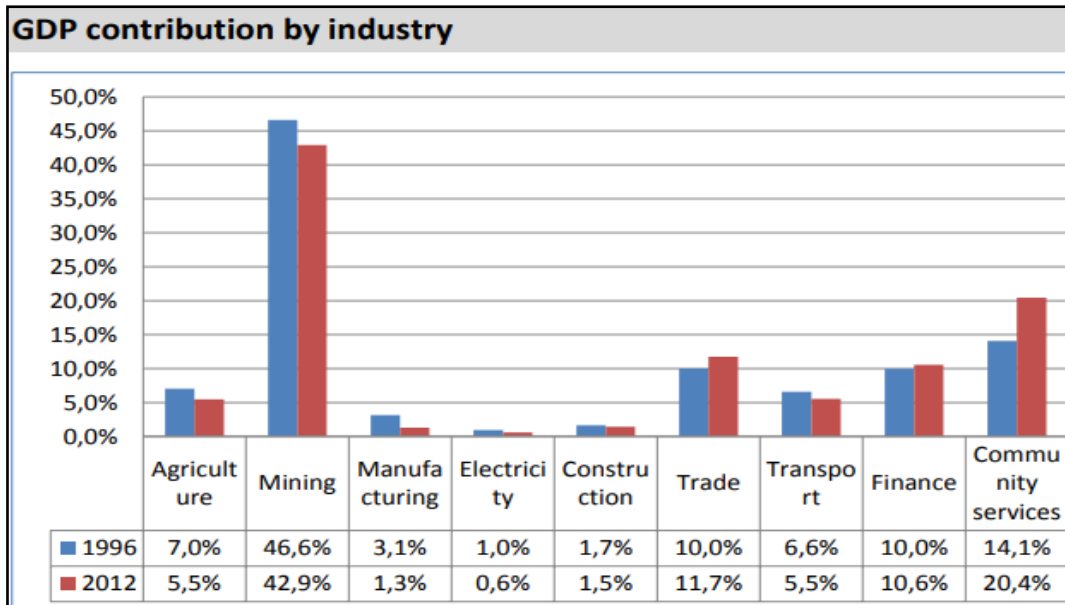
The table below depicts a picture of the youth unemployment in Lejweleputswa with Masilonyana being the hardest hit municipality at a rate of 38.8% unemployment followed by Matjhabeng with 37.0%, Nala standing at 35.9%, Tswelopele at 34.8% and Tokologo being the least with 27.5%.

Lejweleputswa Youth Unemployment rate



GDP contribution

The table below shows GDP contribution by sector and mining is still the leading sector in terms of GDP contribution and the agricultural sector has declined by from 7.0% in 1996 to 5.5% in 2012 while the community services has increased from 14.1% in 1996 to 20.4% in 2012. Manufacturing has drastically decreased from 3.1% in 1996 to 1.3% due to the declining mining activities. The trade sector has also soared from 10.0% in 1996 to 11.7% and the transport sector has decreased from 6.6% in 1996 to 5.5% in 2012.



(b) Description of the current land uses

The land in the application area is predominantly utilised for sand mining. Infrastructure such as secondary tar roads, gravel roads and homesteads occur within proximity of the application area. In terms of land cover, the application area is covered by wetlands, cultivated fields, grassland and woodland/open bush (Figure 5).

(c) Description of specific environmental features and infrastructure on site

The following environmental features and infrastructure is present at the site:

- Access road are available on site

(d) Environmental and current land use map.

(Show all environmental and current land use features)



Figure 5: The current land-uses on the area under application.

(e) Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts.)

ASPECT	POTENTIAL IMPACT
Soil	<ul style="list-style-type: none">• Compaction – from movement of heavy machinery• Contamination – from diesel, oil, grease, etc. used for the trenching machinery and from maintenance of machinery conducted on site• Contamination – from domestic waste.• Loss of topsoil – when the trenching site is cleared of vegetation, topsoil may be lost• Erosion – from the clearing of trenching sites and movement along access tracks
Land use	<ul style="list-style-type: none">• The land use will temporarily change to mining• Mining may interfere with any land uses currently taking place on the site
Biodiversity (fauna and flora)	<ul style="list-style-type: none">• The fauna and flora could be negatively affected by the establishment of the trenching sites and access tracks• Alien and invasive species could be introduced through the disturbance
Surface- and groundwater	<ul style="list-style-type: none">• Contamination – from diesel, oil, grease, etc. used for the drilling machinery and from maintenance of machinery conducted on site• Contamination – from domestic waste, sewerage, drilling core and contaminated soil• Bulk sampling requires a large amount of water which may be sourced on site, which may result in the reduction of water available to other users
Heritage sites	<ul style="list-style-type: none">• Heritage sites may be present on the site, which may be disturbed and/or

	damaged during mining
Dust	<ul style="list-style-type: none"> Dust from mining activities may coat vegetation making it unsafe for livestock grazing
Noise	<ul style="list-style-type: none"> Noise from the trenching activities could disturb residents within the site

(f) Methodology used in determining the significance of environmental impacts

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

The significance of the impacts will be determined through the consideration of the following criteria:

Probability:	Provides a description of the likelihood/probability of the impact occurring
Extent:	Describes the spatial scale over which the impact will be experienced
Duration:	The period over which the impact will be experienced
Intensity:	The degree/order of magnitude/severity to which the impact affects the health and welfare of humans and the environment
Significance:	Overall significance of the impact on components of the affected environment and whether it is a negative or positive impact

The impacts will be individually described and assessed using the criteria drawn from the EIA Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998).

The significance of each impact is assessed using the following formula (before and after mitigation):

Significance Point (SP) = (Probability + Extent + Duration) x Intensity

The maximum value is 150 SP. The impact significance will then be rated as follows:

SP > 75	Indicates high environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates moderate environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates low environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

Probability (P)		
None (N)	1	The possibility of the impact occurring in none, due either to the circumstances, design or experience (0%).
Possible (P)	2	The possibility of the impact occurring is very low, due either to the circumstances, design or experience (25%).
Likely (L)	3	There is a possibility that the impact will occur to the extent that provisions must therefore be made (50%).
Highly likely (H)	4	It is most likely that the impacts will occur at some stage of the development and plans must be drawn up before carrying out the activity (75%).
Definite (D)	5	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied

		on (100%).
Extent (E)		
Footprint (F)	1	The impact area extends only as far as the activity which occurs within the total site area.
Site (S)	2	The impact could affect the whole site or a significant portion of the site.
Regional (R)	3	The impact could affect the area including the neighbouring farms, the transport route and/or the adjoining towns.
National (N)	4	The impact could have an effect that expands throughout the country.
International (I)	5	Where the impact has international ramifications that extend beyond the boundaries of the country.
Duration (D)		
<i>The period over which the impact will be experienced</i>		
Temporary (T)	1	0 – 18 months (or confined to the construction period).
Short term (S)	2	18 – 36 months (or confined to the construction and part of the operational period).
Medium term (M)	3	36 – 48 months (or confined to the construction and whole operational period).
Long term (L)	5	For the whole life of mine (including closure and rehabilitation period).
Permanent (P)	5+	Beyond the anticipated lifetime of the project.
Intensity (I)		
Insignificant (I)	2	Will have a no or very little impact on the health and welfare of humans and environment
Low (L)	4	Will have a slight impact on the health and welfare of humans and environment

Moderate (M)	6	Will have a moderate impact on the health and welfare of humans and environment
High (H)	8	Will have a significant impact on the health and welfare of humans and the environment
Very high/ don't know (V)	10	Will have a severe impact on the health and welfare of humans and the environment

(g) 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 (Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

DESCRIPTION	OCCURRING PHASE
Creation of new employment opportunities	
Employment creation during the life of mining activities may be greatly beneficial to a number of households within the surrounding area. It is however anticipated that a contractor operation is the preference and therefore job opportunities might be very limited.	Construction and Operational phases
Transfer of skills to local people	
In order to promote preferential recruitment for local people, it would be necessary to assess the skills available locally and to ensure that these skills match the local positions at the operation. From the data collected to date, it is apparent that there is significant potential for skills transfer given education levels in the area.	Construction and Operational phases
Support of local suppliers and contractors	
During both the construction and operational phases of the	Construction and

<p>operations, it is expected that a wide variety and generally substantial quantities of goods and services will be required by the mine and their contractors. It is recommended that whenever possible, local contractors should be utilized to provide goods and services to the mine.</p>	<p>Operational phases</p>
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(h) The possible mitigation measures that could be applied and the level of risk

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

ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES
Soil	Compaction – from movement of heavy machinery	<ul style="list-style-type: none"> • Existing roads and tracks will be used as far as possible. • New access tracks will be kept to a minimum. • Rehabilitation of disturbed areas will take place.
	Loss of topsoil – when the pitting and trenching site is cleared of vegetation, topsoil may be lost	<ul style="list-style-type: none"> • Any removed topsoil will be kept to one side and protected from being blown away or being eroded. • Rehabilitation of pitting and trenching and disturbed areas will take place.
	Erosion – from the clearing of drill sites and movement along access tracks	<ul style="list-style-type: none"> • Sediment and erosion controls will be designed to prevent runoff from the pitting and trenching sites into the rivers and any wetland areas. • Appropriate water management, sediment and erosion control measures will be designed for roads and tracks that may be constructed.

		<ul style="list-style-type: none"> • Rehabilitation of pitting and trenching and disturbed areas will take place.
	<ul style="list-style-type: none"> • Contamination – from diesel, oil, grease, etc. used for the pitting and trenching machinery and from maintenance of machinery conducted on site • Contamination – from domestic waste, sewerage and pitting and trenching core 	<ul style="list-style-type: none"> • Topsoil must not be contaminated with oil, grease, diesel, etc. which may inhibit the later growth of vegetation. • Pitting and trenching sumps and containment measures will be designed to contain all pitting and trenching fluid. • Pitting and trenching sumps will be constructed sufficiently large to retain all slurry produced during pitting and trenching. • All chemicals, fuels and oils to be stored on site will be appropriately stored in sealed containers and placed on a lined area. • Inspect equipment daily for leaks. Machinery and equipment will only be maintained over a drip tray, a thin concrete slab or a PVC lining to prevent soil and water contamination. No vehicle will be extensively repaired on site. • All equipment and vehicles must be adequately

		<p>maintained so that during operations it does not spill oil, diesel, fuel, etc.</p> <ul style="list-style-type: none"> • Any contaminated soil will be collected into non-permeable bags and disposed of at an approved landfill site. • A chemical toilet will be used on site and will be used in such a way as to prevent water pollution. Full or leaking toilets must be reported to the supervisor for corrective action or replacement. • All pitting and trenching core will be removed from the pitting and trenching sites or place in a specified area as per request or permission from the land owner. • Rehabilitation of pitting and trenching and disturbed areas will take place.
Land use	Mining may interfere with any land uses currently taking place on the site	<ul style="list-style-type: none"> • Only one pitting site will be operational at any time. • The area to be disturbed will be kept to a minimum (not exceeding 20mx20m). • No pitting site will be established within 50m of any agricultural land unless consent is received from

		<p>the land owner.</p> <ul style="list-style-type: none"> • Rehabilitation of pitting and trenching and disturbed areas will take place.
Biodiversity (fauna and flora)	<p>The fauna and flora could be negatively affected by the establishment of the pitting and trenching sites and access tracks</p>	<ul style="list-style-type: none"> • Pitting and trenching and access tracks will be located in areas that will result in minimal ground disturbance. • A field survey will be undertaken before pitting and trenching commences at each pitting and trenching site to confirm that no threatened species or ecologically sensitive areas are present in sections to be cleared. • Permission will be obtained from the landowner before trees are felled, should it be necessary. • All trees protected in terms of the National Forests Act, 1998, will be protected – will not be cut, disturbed, damaged, removed, etc. • Rehabilitation of pitting and trenching and disturbed areas will take place.
	<p>Alien and invasive species could be introduced through the disturbance</p>	<ul style="list-style-type: none"> • Machinery will be cleared of mud and seeds prior to relocation to the next site to prevent the spread of

		<p>alien invasive species.</p> <ul style="list-style-type: none"> • An inspection on whether there is evidence of alien and invasive species as a result of mining activities will be undertaken and removed if required.
<p>Surface- and groundwater</p>	<ul style="list-style-type: none"> • Contamination – from diesel, oil, grease, etc. used for the pitting and trenching machinery and from maintenance of machinery conducted on site • Contamination – from domestic waste, sewerage, pitting and trenching and contaminated soil • Water discharge during pitting and trenching 	<ul style="list-style-type: none"> • No pitting and trenching will be established within 100m of any watercourse or wetland. • Pitting and trenching sumps and containment measures will be designed to contain all pitting and trenching fluid. • Pitting and trenching sumps will be constructed sufficiently large to retain all slurry produced during pitting and trenching. • All chemicals, fuels and oils to be stored on site will be appropriately stored in sealed containers and placed on a lined area. • All waste will be collected, separated and stored properly in containers with lids and removed to an approved landfill. • Inspect equipment daily for leaks. Machinery and equipment will only be maintained over a drip tray,

		<p>a thin concrete slab or a PVC lining to prevent soil and water contamination. No vehicle will be extensively repaired on site.</p> <ul style="list-style-type: none"> • All equipment and vehicles must be adequately maintained so that during operations it does not spill oil, diesel, fuel, etc. • Any contaminated soil will be collected into non-permeable bags and disposed of at an approved landfill site. • A chemical toilet will be used on site and will be used in such a way as to prevent water pollution. Full or leaking toilets must be reported to the supervisor for corrective action or replacement. • All pitting and trenching will be drilled and constructed in such a way as to prevent ingress of water into the hole. • Any completed pitting that is not required for groundwater monitoring will be rehabilitated to prevent groundwater contamination. • Rehabilitation of disturbed areas will take place.
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	Drinking water	<ul style="list-style-type: none"> • Drinking water will be supplied in plastic containers to be stored on site.
Heritage sites	Heritage sites may be present on the site, which may be disturbed and/or damaged during mining	<ul style="list-style-type: none"> • Potential heritage sites will be identified during the planning of locations and demarcated. • Access to these sites will then be limited and all workers will be notified to keep at least 100m away from these sites.
Air quality (dust)	The air quality will not be disturbed, however, a minimal dust problem may be experienced, especially in the mining area during piting and trenching	<ul style="list-style-type: none"> • All pitting and trenching rigs will be fitted with appropriate dust suppression equipment like water sprays, where possible. • Speed limits on gravel roads will be limited to 40km/hr to minimise dust generation. • Dust will be effectively controlled in all disturbed areas through water spraying. • Excavation, handling and transportation of erodible materials should be avoided during periods of excessive wind. • If necessary, other appropriate dust suppression techniques will be administered. For example

		chemicals, wind fencing, covering of surfaces and vegetation of open areas.
Noise	Noise from the pitting and trenching activities could disturb residents within the site	<ul style="list-style-type: none"> • Modern, low noise emission vehicles and equipment will be favoured. • All equipment on site will be maintained in good working order. • Pitting and trenching will be restricted to day light hours. • Speed limits on gravel roads will be limited to 40km/h to minimise noise generation.
Socio-economic	Expectations could be created that numerous job and business opportunities will become available during mining	<ul style="list-style-type: none"> • Due to the nature of mining, employment opportunities will be minimal. The mining crew is small (4-6 people) with specialised skills. Where possible, local people will however be employed during the project.

b) The outcome of the site selection Matrix.

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)



Figure 6: Final Site Layout Plan.

ii) Motivation where no alternative sites were considered.

No location alternatives are applicable to this project since the sand is contained in the proposed mining area. The eastern limb is inaccessible and hence the western limb is preferred as it was previously mined. Locating the development to another area will result in the sand possibly not being found and the economy and society not benefitting from future proposed mining and possible mining activities.

iii) Statement motivating the preferred site.

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

The proposed site for the mining activities is located within an area which is already severely disturbed as a result of mining activities. However, whenever mining activities are located within sensitive areas (i.e. wetlands, rivers, streams as well as their buffers), utmost caution will be taken to have as little impact as possible to the environment.

i. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stored, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc..).

ACTIVITY (whether listed or not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablution, stored, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...)	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc...)
Mining (pitting and trenching)	<ul style="list-style-type: none"> • Compaction – from movement of heavy machinery 	Soil	Phase 2 - Exploration (pitting and	<ul style="list-style-type: none"> • Control through management and monitoring • Remedy through 	Impact kept to minimum and rehabilitate affected

	<ul style="list-style-type: none"> • Contamination – from diesel, oil grease etc. used for the pitting and trenching machinery and from maintenance of machinery conducted on site • Contamination – from domestic waste, sewage and pitting and trenching core 		trenching)	rehabilitation where negative impacts have been identified	area.
	<ul style="list-style-type: none"> • Loss of top soil - when pitting and trenching site is cleared of vegetation 		Phase 2 - Exploration (pitting and trenching)	<ul style="list-style-type: none"> • Control through management and monitoring • Remedy through rehabilitation where negative impacts have been identified 	
	<ul style="list-style-type: none"> • Erosion – from clearing of drill site and 				Impact kept to minimum and

	movement along access tracks				rehabilitate affected area.
	<ul style="list-style-type: none"> • Current land use on site 	Land use			
	<ul style="list-style-type: none"> • Fauna & flora currently on site 	Biodiversity (fauna & flora)			
	<ul style="list-style-type: none"> • Potential introduction of alien & invasive species 	Biodiversity (fauna & flora)			
	<ul style="list-style-type: none"> • Contamination – from diesel, oil grease etc. used for the pitting and trenching machinery and from maintenance of machinery conducted on site 				
	<ul style="list-style-type: none"> • Contamination – from domestic 				

	waste, sewage and pitting and trenching core				
	<ul style="list-style-type: none"> • Potential water discharge – from a borehole during pitting and trenching 	Surface- and groundwater Heritage sites			Impact kept to minimum and rehabilitate affected area.
	<ul style="list-style-type: none"> • Potential water availability to other users – water for pitting and trenching may be sources on site 				
	<ul style="list-style-type: none"> • Potential heritage sites may be disturbed and/or damaged 				
	<ul style="list-style-type: none"> • Potential minimal dust may be caused 	Air quality (dust)			

	<ul style="list-style-type: none">• Potential noise from pitting and trenching	Noise			
--	--	-------	--	--	--

ii. Description of aspects to be assessed by specialists

The presence of wetlands in and around the proposed mining area has prompted the need for an ecological study. Furthermore, there will be a ground water study that will be done during EIA process. However, no heritage that exists on site, and therefore such a study will not be undertaken.

iii. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The EIA utilises a rigorous, numerical environmental significance rating process which is based on the accepted impact assessment methodology that uses the probability of an event occurring and the severity of the impact, should an event occur, as factors to determine the significance of a particular environmental risk.

To determine the severity of any potential environmental impact, the criteria that are taken into consideration are the spatial extent of the impact, the duration of the impact and the severity of the impact. The probability of an impact occurring is determined by the frequency at which the activity takes place and by how often the type of impact in question has taken place or takes place in similar circumstances. The values assigned to these factors (weighting) are discussed as part of the EIA. To clarify the purpose and limitations of the impact assessment methodology, it is necessary to address the issue of subjectivity in the assessment of the significance of environmental impacts.

Even though **Engedi Minerals and Energy (Pty) Ltd** and the majority of the environmental impact assessment practitioners propose a numerical methodology for impact assessment, it needs to be accepted that the process of environmental significance determination is inherently subjective. The weight assigned to each factor of a potential impact, and also the design of the rating process itself, is based on the values and perception of risk by members of the assessment team, as well as that of the I&APs and authorities who provide input into the process.

Whereas the determination of the spatial scale and the duration of impacts are to some extent amenable to scientific enquiry, the severity value assigned to impacts is highly dependent on perceptions and values of all involved. It is for this reason that it is crucial that all EIAs make reference to the environmental and socio-economic context of the

proposed activity to reach an acceptable rating of the significance of impacts. Similarly, the perception of the probability of an impact occurring is dependent on perceptions, aversion to risk and availability of information.

It has to be stressed that the purpose of the EIA process is not to provide an incontrovertible rating of the significance of various aspects, but rather to provide a structured, traceable and defensible methodology of rating the relative significance of impacts in a specific context. For the purpose of this study, the methodology employed for the environmental impact assessment is divided into two distinct phases, namely, impact identification and impact rating.

The significance of each impact is assessed using the following formula (before and after mitigation):

$$\text{Significance Point (SP)} = (\text{Probability} + \text{Extent} + \text{Duration}) \times \text{Intensity}$$

The maximum value is 150 SP. The impact significance will then be rated as follows:

SP > 75	Indicates high environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates moderate environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates low environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

Probability (P)		
None (N)	1	The possibility of the impact occurring in none, due either to the circumstances, design or experience (0%).
Possible (P)	2	The possibility of the impact occurring is very low, due either to the circumstances, design or experience (25%).
Likely (L)	3	There is a possibility that the impact will occur to the extent that provisions must therefore be made (50%).
Highly likely (H)	4	It is most likely that the impacts will occur at some stage of the development and plans must be drawn up before carrying out the activity (75%).
Definite (D)	5	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on (100%).
Extent (E)		
Footprint (F)	1	The impact area extends only as far as the activity which occurs within the total site area.
Site (S)	2	The impact could affect the whole site or a significant portion of the site.
Regional (R)	3	The impact could affect the area including the neighbouring farms, the transport route and/or the adjoining towns.
National (N)	4	The impact could have an effect that expands throughout the country.
International (I)	5	Where the impact has international ramifications that extend beyond the boundaries of the country.
Intensity (I)		

Insignificant (I)	2	Will have a no or very little impact on the health and welfare of humans and environment
Low (L)	4	Will have a slight impact on the health and welfare of humans and environment
Moderate (M)	6	Will have a moderate impact on the health and welfare of humans and environment
High (H)	8	Will have a significant impact on the health and welfare of humans and the environment
Very high/ don't know (V)	10	Will have a severe impact on the health and welfare of humans and the environment

iv. The proposed method of assessing duration significance

Duration (D)		
<i>The period over which the impact will be experienced</i>		
Temporary (T)	1	0 – 6 months (or confined to the construction period).
Short term (S)	2	6– 36 months (or confined to the construction and part of the operational period).
Medium term (M)	3	18 – 48 months (or confined to the construction and whole operational period).
Long term (L)	4	48 –60 months For the whole life of mine (including closure and rehabilitation period).
Permanent (P)	5	Beyond the anticipated lifetime of the project.

v. The stages at which the competent authority will be consulted

It's an ongoing process until project closure.

vi. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

Engedi Minerals was appointed by Buti Phakoe as the independent consultant to conduct the PP process as part of the EIA as stipulated in Sections 56 - 59 of the NEMA (Act no. 107 of 1998) as well as in Section 22 of the MPRDA (Act no. 28 of 2002).

As stipulated in Regulation 41(2) (b) of the EIA Regulations, I&APs need to be notified and consulted with, as part of an application for mining rights.

Identification of Interested and Affected Parties

The following categories of stakeholders will be identified:

- The landowners of Portion 15 of the Farms under application (the area included in the Mining Right Application).

In addition, other potential stakeholders will be identified and invited to register themselves as I&APs. This invitation was also extended to the public by means of site notices and newspaper notices.

2. Details of the engagement process to be followed.

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage).

Site notices were placed on the border fences of the study site and on a main route close to the study site which would be conspicuous to passers-by. An advertisement notice of the project, inviting people to provide comments and/or concerns, was placed within a local newspaper. I&APs were required to raise issues of importance, share their input, comments

and/or concerns and to inform them of the Scoping Report and EMPr. The draft Scoping/EMPr was made available for review.

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land).

Letters and a Background Information Document were sent to all identified stakeholders either by means of e-mail or by post.

vii. Description of the tasks that will be undertaken during the environmental impact assessment process

a) Application and Scoping

At the onset of the project an application form will be submitted to the DMR. In conjunction with the application, this Consultation Scoping Report will be submitted to the DMR and all commenting authorities and notification of the availability of the report sent to all identified I&APs. An updated Scoping report, containing comments and issues identified by I&APs, will be submitted to the DMR. The DMR will issue a decision on the acceptance or refusal of the application.

b) EIR & EMPr

The Impact Assessment Process will be conducted in accordance with the approved Plan of Study (PoS) for EIA. The Consultation EIR and EMPr will be prepared with information and issues identified during the Scoping Phase activities, comments from I&APs, commenting authorities and the findings from the specialist studies.

The Impact Assessment Phase comprises of:

- The completion of the specialist studies and reports (Heritage and Ecological);
- The finalisation of the impact assessment;
- The compilation of the Consultation EIR and EMPr;

- The public review of the Consultation EIR and EMPr and possible extended public review period, at the discretion of the competent authority (DMR);
- The compilation of the Final EIR and EMPr; and
- The submission of the Final EIR and EMPr.

The Consultation EIR and EMPr include:

- The details of the EAP who prepared the report;
- A detailed description of the proposed development and alternatives;
- A description of the environment that may be affected by the activity and the manner in which physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed development;
- A description of the methodology of the stakeholder engagement process;
- The comments and response report and stakeholder database;
- A description of the need and desirability of the proposed development and the identified potential alternatives to the proposed activities;
- A summary of the methodology used in determining the significance of potential impacts;
- A description and comparative assessment of all alternatives identified during the EIA process;
- A summary of the findings of the specialist studies;
- A detailed assessment of all identified potential impacts;
- A list of the assumptions, uncertainties and gaps in knowledge;
- An opinion by the consultant as to whether the development is suitable for approval.

Once the Consultation EIR and EMPr have been placed on public review, comments received from stakeholders will be documented and considered in the Final EIR and EMPr which will be placed on public review and simultaneously submitted to the DMR for approval.

c) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

<p>ACTIVITY</p> <p>Whether listed or not listed.</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, v, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p>POTENTIAL IMPACT</p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p>MITIGATION TYPE</p> <p>(modify, remedy, control, or stop) through</p> <p>(E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p>	<p>POTENTIAL FOR RESIDUAL RISK</p>
<p>Mining (pitting and trenching)</p>	<p>Dust;</p> <ul style="list-style-type: none"> • Surface disturbance; • Fly rock; • Loss of wetland habitat; • Surface water contamination; • Destruction of • Groundwater contamination; 	<ul style="list-style-type: none"> • Control and minimise through adequate dust control strategies; • Control run-off through implementation of appropriate storm water management measures; • Contain dirty water runoff; • Concurrent rehabilitation must take place on the mine; • Avoid mining, or otherwise disturbing the catchment area of 	<p>Moderate</p>

	<ul style="list-style-type: none"> Loss/deterioration of biodiversity and ecosystem resilience. 	<ul style="list-style-type: none"> the pans; Implement an effective soil Management programme; Effective control of alien invasive plants; Vehicles and machinery should be checked on a regular basis to prevent leaks and spills; Limit the footprint of areas to be disturbed; Use proper charging methodology to prevent fly rock; Impacted groundwater should be pumped to dirty water dams. These dams should be lined to ensure no future pollution of groundwater resources; Water levels within the wetlands should be monitored. The ecological integrity of the wetlands should be monitored. 	
Diesel storage and refuelling station	Surface and contamination.	<ul style="list-style-type: none"> Bunded containment and settlement facilities will be 	Low

		<p>provided for hazardous materials, such as fuel and oil;</p> <ul style="list-style-type: none"> • Spill-sorb or a similar product will be kept on site, and used to clean up hydrocarbon spills in the event that they should occur. 	
ROM Stockpiles	Soil, surface and Groundwater contamination.	<ul style="list-style-type: none"> • All facilities with the potential to generate dirty storm water runoff, effluent or wash-down water will be located within the designated dirty water area. • Clean runoff will be diverted around the designated dirty areas by means of cut-off canals, sized to accommodate at least the 1:50 year peak flow event. 	Moderate
Storm water evaporation	Loss of habitat from salt deposition Surface and Groundwater contamination.	<ul style="list-style-type: none"> • Ensure that the evaporation facility operates within a contained area and will be located within the designated dirty water area. 	Low

d) Other Information required by the competent Authority

- i) 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:-

(1) Impact on the socio-economic conditions of any directly affected person.

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or sand mining on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

DESCRIPTION	OCCURRING PHASE
Creation of new employment opportunities	
Employment creation during the life of mining activities may be greatly beneficial to a number of households within the surrounding area. It is however anticipated that a contractor operation is the preference and therefore job opportunities might be very limited.	Construction and Operational phases
Transfer of skills to local people	
In order to promote preferential recruitment for local people, it would be necessary to assess the skills available locally and to ensure that these skills match the local positions at the operation. From the data collected to date, it is apparent that there is significant potential for skills transfer given education levels in the area.	Construction and Operational phases
Support of local suppliers and contractors	
During both the construction and operational phases of the operations, it is expected that a wide variety and generally substantial quantities of goods and services will be required by the mine and their contractors. It is recommended that whenever possible, local contractors should be utilized to provide goods and services to the mine.	Construction and Operational phases

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

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

There is no heritage site that exists within portions of the proposed activities.

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

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

Alternative investigations were conducted for the alternatives related to the proposed project and no motivations are required for no reasonable or feasible alternatives.

APPENDIX 1

THE CV AND DECLARATION OF THE EAP

CURRICULUM VITAE

OF

Tshimangadzo Mulaudzi

P.O Box 29567

Danhof

93120

Contacts: 0793626046 / 072 901 0990

E-mail: mulaudzit@engedime.com

Date of Birth: 26 March 1988

Nationality : South African

Languages : Speak and write (English and
Tshivenda).

ID : 8803265731082

Gender : Male

Driver's license: Code 10 (C1)

Health status : Excellent

EDUCATIONAL QUALIFICATION

Institution : Litshovhu High School
Qualification : Grade 12 (Senior Certificate)
Major subject passed : Mathematics, Physical Science, Biology, Agric,
English and Tshivenda all in Higher Grade.
Year : 2006

Institution : University of Venda
Qualification : BSc. (Honours). Mining and Environmental Geology
Subject passed : See attached Academic Record
Year : 2011

SUMMARY

I am a Candidate in a possession of a BSc. (Hons.) in Mining and Geology with vast variety of experience in Geological, Geochemical, Geophysical Exploration, and Managing of a Manufacturing team. Currently I am working as a Consultant Geologist at Breeze Court Investments 47 (Pty) Ltd and i have gained experience in Map Production (Using ArcGIS), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samrad online portal), Petroleum applications (Compilation of EMP, EIA, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (knowledge of

MPRDA, 2002, NWA, 1998, NEMA, 1998, NHRA, 1999, MHSA, 1996, Mining Charter, 2010 and Freedom Charter, 1955.).

I have also worked with the small scale miners in the region of Northern Cape, Free State and Northern Cape helping them with the application for Prospecting right, prospecting right and also attend the site inspection with the officials from Department Mineral Resources to help the small scale miners to comply with the legislation of the department.

I served at the Makhado Municipality for two (2) years under Local Economic Development as an Intern (**In Mining, Environmental and Geology Sectors**) and was attending seminars on Local Economic Development issues, interacting with the stake holders and helping the Small Micro Medium Enterprises (SMME's) to get funds from the sponsors.

EMPLOYMENT HISTORY

Job title	:	Trainee Mine Geologist
Name of organization	:	Agnes gold mine
Period	:	June 2010 – June 2011 (1 year)
Experiences and skills	:	Face mapping, stope observing, continuous sampling, Geological data capturing, Report writing and Geological mapping.
Job title	:	Chief production, quality, and safety officer
Name of Organization	:	Tshedza concrete art
Period	:	January 2012 – January 2013 (1 year, 1 month)
Experiences and skills	:	Managing high quality production and enforcing safe working Environment for workers
Job title	:	LED Intern (in Mining, Environmental and Geology)
Name of Organization	:	Makhado Local Municipality (Northern Cape)
Period	:	February 2013 – December 2014 (11 Months)
Experiences and skills	:	To formulate and implement measures and procedures to Facilitate for the development of SMME's. Implement Measures, processes, and procedures to attract the Investors, Facilitate and implement job creation projects and initiatives. Formulate, review and update LED plans in alignment with the Province and District Municipality. Facilitate and create Partnership with regard to service provider, trade exhibitions, Corporate and SMME's.
Job title	:	Consultant Environmental Geologist and GIS specialist

Name of organization : Breeze court investment (Pty) Ltd Geol& Min Consultants
 Period : January 2014 – January 2015
 Experiences and skills : Map Production (Using ArcGIS), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samrad online portal), Technical Cooperation Permit, Reconnaissance Permit, Exploration Right, Production right (Petroleum applications) Compilation of EMP, EIA, Environmental Authorisation, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (Broad knowledge of MPRDA, 2002), Assisting small scale miners in the region of Northern Cape, Northern Cape, and Free State with application for Prospecting right and Prospecting right, help them with compliance in terms of the MPRDA, 2002. Also do the site inspection with the officials from Department of Mineral Resources, and help the miners and management to comply with the statutory while operating and always work in a safe working conditions and enforce also that the act of one employee must be safer towards another employee to achieve zero harm.

Job title : **Consultant Environmental Geologist and GIS specialist**

Name of organization : Engedi Minerals and Energy (Pty) Ltd

Period : February 2015 – Present

Experiences and skills : Map Production (Using ArcGIS), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samrad online portal), Technical Cooperation Permit, Reconnaissance Permit, Exploration Right, Production right (Petroleum applications) Compilation of EMP, EIA, Environmental Authorisation, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (Broad knowledge of MPRDA, 2002), Assisting small scale miners in the region of Northern Cape, Northern Cape, and Free State with application for Prospecting right and Prospecting right, help them with compliance in terms of the MPRDA, 2002. Also do the site inspection with the officials from Department of Mineral Resources, and help the miners and management to comply with the statutory while operating and always work in a safe working conditions and enforce also that the act of one employee must be safer towards another employee to achieve zero harm.

Knowledge of Legislations and Acts

Constitution of the Republic of South Africa No.108 of 1996
 Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
 Mineral and Petroleum Resources Development Act Amendments bill 15 of 2013

Mineral and Petroleum Resources Development Act Regulations
 National Water Act, 1998 (Act 36 of 1998)
 Mine Health and Safety Act, 1996 (Act 29 of 1996)
 National Heritage Resources Act, 1999 (Act 25 of 1999)
 National and Environmental Management Act, 1998 (Act 107 of 1998)
 Public Finance Management Act, 1999 (Act 1 of 1999) and Act 29 of 1999 as Amended
 2014 Environmental Impact Assessment Regulations
 Mining Charter, 2010
 Freedom Charter, 1955
 Municipal System Act, 2000 (Act 32 of 2000)
 Municipal Structure Act, 1998 (Act 117 of 1998) and as amended in Act 20 of 2002.

COMPETENCIES

Ability to relate with people,
 Ability to work independently and as a team,
 Determination to succeed,
 Strong leadership skills,
 Proactive, resourceful, well organized and able to meet deadlines, and
 Ability to communicate effectively

EXTRAMURAL ACTIVITIES AND INTERESTS

I love reading newspapers, business literatures, watching discovery channels, News, writing and Public speaking, these help me share my ideas and opinion and to get my message across, and I love learning new things every day and I am eager to learn

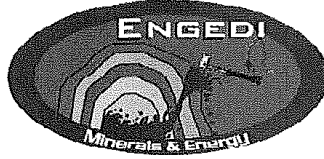
REFERENCES

Name	:	Mr. P. Makoela
Name of organization	:	Agnes gold mine (Pty) Ltd
Position	:	Head of department of geology section
Contacts	:	087 351 8304 (W), 076 311 7791 (C)
Name	:	Mr. R.P. Mamphaga
Name of organization	:	Tshedza concrete art (Pty) Ltd
Position	:	Managing director
Contacts	:	011 024 1167 (W), 082 857 3204 (C)
Name	:	Mr. P. Netshivhuyu
Name of organization	:	Makhado Local Municipality
Position	:	Supervisor

Contacts	:	072 718 3220(C)
Name	:	Mr. A.J. Davids
Name of organization	:	Breeze Court Investments (Pty) Ltd
Position	:	Consultant Environmental Geologist
Contacts	:	082 707 3239 (C)

15 Barnes Street, Westdene,
Langebaan Building
Bloemfontein, South Africa
9301

P.O.Box 29567
Danhof
9310



pride, determination, and resilience
Reg. No. 2015/153624/07

Cell: 079 362 6046 (+27)
076 763 8486 (+27)
Fax: 086 556 2568 (+27)

email: info@engedime.com
mulaudzi@engedime.com
www.engedime.com

8th of February 2021

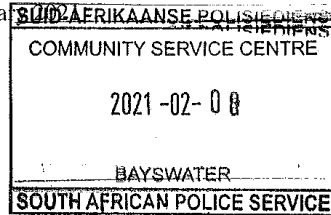
**UNDERTAKING AND DECLARATION UNDER OATH AS ENVIRONMENTAL
ASSESSMENT PRACTITIONER (EAP)**

As refer to the subject of the matter above;

I am hereby confirming that all the information contained in this report is true and correct
And hereby declared that I, **Mr Tshimangadzo Mulaudzi**, of Identity number: **8803265731082**, I am an Environmental Geologist Consultants at Engedi Minerals and Energy (Pty) Ltd (Reg. No, 2015/153624/07), I am an Environmental Assessment Practitioner (EAP) and I am capable to compile Environmental reports in support of permits and rights application with Department of Mineral Resource (DMR) and Environmental authorisation with the Department of Environmental Affairs (DEA) and any relevant department including Department of Water and Sanitation amongst others.

This was done and signed at Bloemfontein on the 8th of February 2021

Yours sincerely




T. Mulaudzi

Engedi Minerals and Energy (Pty) Ltd (Consultant)

Ek sertifiseer dat bostaende verklaring deur my
eigeneem is en dat die verklarings erken dat
hysy verdund is met die inhoud van hierdie ver-
klaring en dit bevestig. Hierdie verklaring is voor
my handtekening en/of afgedruk is in my teen-
woordigheid daarop aangebring.

I certify that the above statement was taken by
me and that the deponent has acknowl-
edged that he/she knows and understands the
contents of this statement. This statement was
signature/mark/thumbprint was placed thereon
in my presence.

BAYSWATER op 2021-02-08 om 14:00
at

(HANDTEKENING) KOMMISSARIS VAN EDE
(SIGNATURE) COMMISSIONER OF OATHS
T.K. MALIFEANE
VOLLE VOORNAAM EN VAN IN DRUKSKRIJ
99. WILCOCKS STR
BESIGHEIDSAADRES (STRAATADRES)
BUSINESS ADDRESS (STREET ADDRESS)
397, BLOEMFONTEIN

SA POLISIEDIENS
SA POLICE SERVICE

pride, determination, and resilience.

Page 1

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that
Tshimangadzo Mulaudzi
Registration Number: 114576
is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)
Geological Science (Professional Natural Scientist)

Effective 20 March 2018

Expires 31 March 2021



Batsha

Chairperson

M. J. ...

Chief Executive Officer

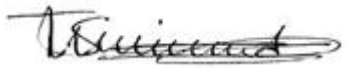


To verify this certificate scan this code

APPENDIX 2

UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Tshimangadzo Mulaudzi herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.



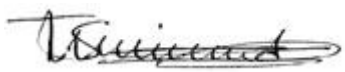
Signature of the EAP

DATE: 01 October 2021

APPENDIX 3

UNDERTAKING REGARDING LEVEL OF AGREEMENT

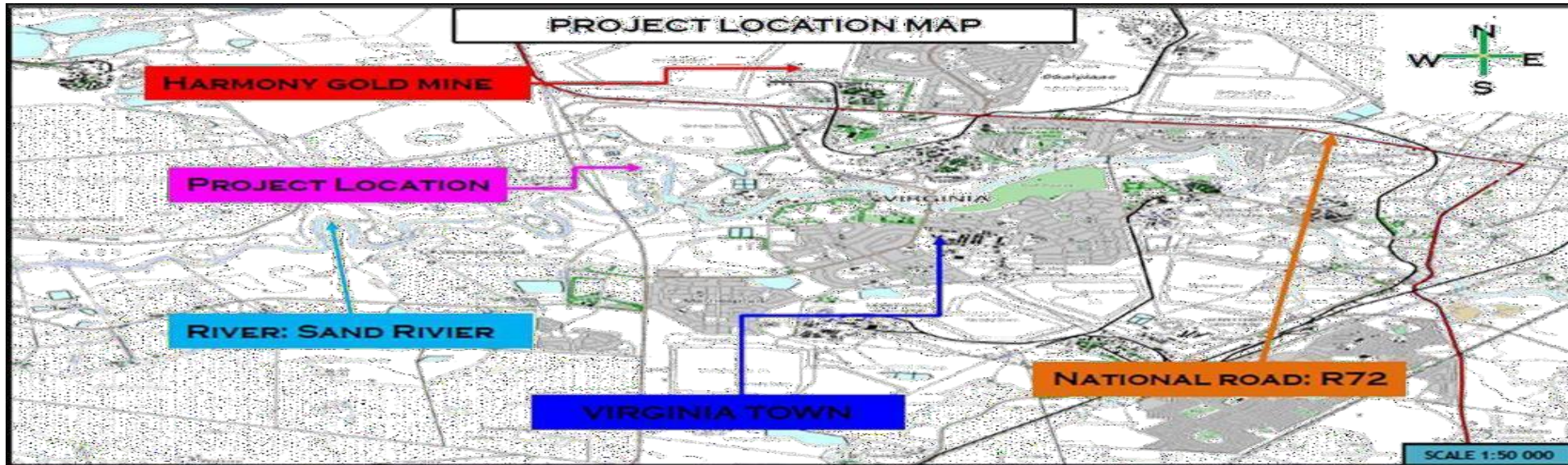
I Tshimangadzo Mulaudzi herewith undertakes that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.



Signature of the EAP

DATE: 01 October 2021

**APPENDIX 4
LOCALITY MAP**



REFERENCE	VERKLARING
Nasionale Freedery, Nasionale Roete	Nasionale Douerpaad, Nasionale Roete
Aersaal Roete	Moederdorperspoor
Main Road	Hoofpad
Secondary Road; Branch Mark	Sekondêre Pad; Nusstigrook
Other Road; Bridge	Andere Pad; Brug
Track and Mining Trail	Dienspad; Pad vir 'nopsaansoek
Railway; Station or siding	Spoorweg; Stasie of Syntel
Other Railway; Tunnel	Andere Spoorweg; Tunnel
Sparks; Cutting	Opvulling; Oewerwaaing
Power Line	Kraglyn
Building Area (High, Low Density)	Beplande Gebied (Hoë, Laë Densiteit)
Building Area	Onbeplande Gebied
Post Office; Police Station; Bank	Postkantoor; Polisie-stasie; Winkel
Place of Worship; School; Hotel	Plaas van aanbidding; Skool; Hotel
Wing; Wall	Erwering; Muur
Wing; Monument	Wing; Monument
Communication Equip	Kommunikasietoerusting
Mine Structure; Explosive	Mynstruure; Ploegwering
Topometrical Station; Merise Beacon	Topometriele Stasie; Merise Beacon
Lighthouse and Marker Light	Waaierligter en Seewerking
Cemetery; Grave	Begraafplaas; Graf

REFERENCE	VERKLARING
International Boundary and Buffer	Internasionale Grens en Buffer
Provincial Boundary	Provinsiale Grens
Protected Area	Bewagings-Gebied
Perennial River	Staanwaterende Rivier
Periodic Water	Staanwaterende Water
Non-perennial River	Nie-staanwaterende Rivier
Non-Perennial Water	Nie-staanwaterende Water
Dry Water Course	Droë Loop
Dry Pan	Droë Pan
Morph and Vial	Moeras en Vial
Pipeline (above-ground)	Pyplyn (bo-die grond)
Water Tower; Reservoir; Water Point	Wateroring; Reservoir; Waterpunt
Control Block	Kontroleblok
Prevent Rock Outcrop	Preventories Klipwaaing
Erosion Bank	Errosie; Sand
Woodland	Bewagte Gebied
Cultivated Land	Bewagte Land
Orchard or Vineyard	Boord of Waaing
Recreation Ground	Ontspanningsplek
Row of Trees	Ry van Bome

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