mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

Mukope Group (pty) ltd

# DRAFT SCOPING REPORT

# FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND MINING.

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:** | **MUKOPE GROUP (PTY) LTD** |
| **TEL NO:** | **078 1021 012** |
| **FAX NO:** | **086 620 5723** |
| **POSTAL ADDRESS:** | **208, KLINKENBERG GARDENS,<br>400 VISAGIE STREET,<br>PRETORIA, 0002** |
| **PHYSICAL ADDRESS:** | **208 KLINKENBERG GARDENS,<br>400 VISAGIE STREET,<br>PRETORIA, 0002** |


**FILE REFERENCE NUMBER SAMRAD: NC30/5/1/1/3/2/1/10129MR**

# Contents

## 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.

## EXECUTIVE SUMMARY

Mukope Group (Pty) Ltd has appointed Geoprospect Investments Holdings (Pty) Ltd, an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed project. The applicant intends to establish an opencast limestone mining operation, located in the Northern Cape Province of South Africa. It is located 150km west of Kimberley town in area on Griekwastad, the pit will be located in farm Mesnard 38 portion 0 which is located 11km north of Griekwastad town. The property is accessed through driving north from Griekwastad towards Lime Acres via a gravel road, approximately 10.5km on the western side, the farm Mesnard can be found and accessed through a gate.

The area is covered by various farms namely: FARM 565 PTN 0 & 1, FARM 562 PTN 0, FARM 52 PTN 0 & 1, FARM 42 PTN 0 & 1, FARM 41 PTN 0 & 1, FARM 40, PTN 0, FARM 39 PTN 0, HOPEFIELD ESTATE 552 PTN 0 & 1(Farm 605 Ptn 0), KOGELBEEN 44 PTN 0, 1, 2 & 3, LA PROVENCE 51 PTN 0, MESNARD 38 PTN 0 & 1 and ROOIPAN 43 PTN 0 while mining will be taking place at Mesnard 38 portion 0 covering a total of 37 249Ha in size while the mining area will cover about 200 **hectares** (ha) in extent, is held under a Prospecting Right (PR) (No. NC30/5/1/1/2/11003PR); granted to Mukope Group Group (Pty) Ltd with drilling which only occurred in Mesnard 38, portion 0

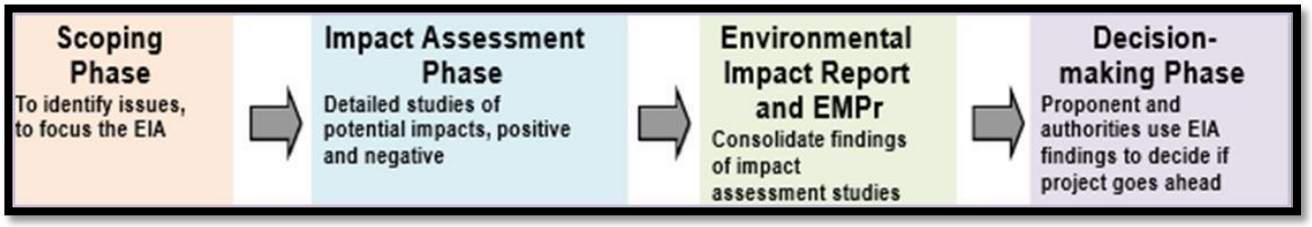
Mukope Group undertook the drilling of limestone in 2017 and found 15million tonnes of limestone and subsequently compiled a CPR that is SAMREC compliant.

In terms of the National Environmental Management Act (NEMA), in addition to the mining right application submitted to the DMR an Environmental Authorisation needs to be applied for. This will include the mining area and any associated surface infrastructure. This application will follow the Scoping and Environmental Impact Assessment process in terms of the National Environmental Management ACT (NEMA): EIA Regulations 2014. An application for Environmental Authorisation in term of Section 16 of the NEMA EIA 2014 regulations was submitted to the DMR in September 2017.

According to the EIA Regulations, Interested and Affected Parties (I&APs) must have the opportunity to comment on the proposed project and verify that all the issues raised during the Scoping Phase have been recorded.

Comments received during this phase will be considered and addressed in the Environmental Impact Assessment (EIA/EMPr) which will be submitted to the competent authority Department of Minerals (DMR) for approval.

## AN EIA CONSISTS OF THE FOLLOWING PHASES




### Purpose of this Report

This report addresses the requirements for Scoping Phase and the Plan of Study for the Environmental Authorisation Process as outlined in the NEMA regulations and the MPRDA regulations. The aim of this SR is to:

- Provide information to the authorities as well as interested and affected parties (I&APs) on the proposed project;
- Provide information regarding alternatives that are being considered;
- Indicate how I&APs have been and are still being afforded the opportunity to contribute to the project, verify that the issues raised during the scoping phase are incorporated in the impact assessment phase of the environmental authorization process;

Describe the baseline receiving environment;

- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the Impact Assessment Phase of the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates input by the I&AP's and decision-making by the relevant authorities.

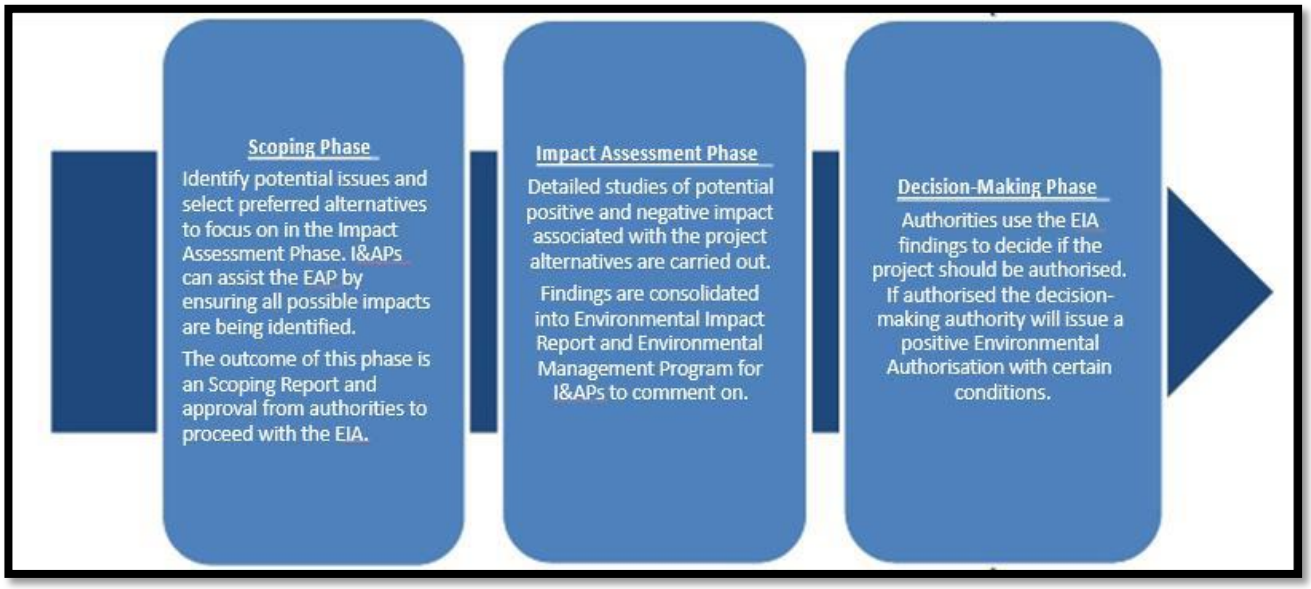
## The Process

As part of the project, the environmental authorizations and licenses required to start the mining need to be obtained. In order to do so, a Scoping and Environmental Impact Assessment Process (S&EIR) is being undertaken in line with the provisions of the National Environmental Management Act (EIA regulations of 04 December 2014). The S&EIR process and specialist studies to be undertaken will also support the applications for the required licenses and environmental authorizations.

The EIA findings are used by the applicant and authorities to obtain an objective view of the potential environmental, social and cultural impacts that could arise during the mining of the proposed area. Measures for the avoidance or mitigation of negative impacts will be

proposed and positive impacts will be enhanced. The outcome of the first phase of the S&EIR is the Scoping Report, which provides the basis for undertaking the Impact Assessment Phase of the project.

**The process is summarized in the illustration below:**




## Baseline and Potential Impacts

The mining right area has been identified within the Mesnard area of the whole Mining Right and this assessment is aimed at identifying the general environmental sensitivities across the mining right application area with special emphasis on the area to be mined (Mesnard). This will involve desktop plus specialist studies that where conducted and draws extensively on information contained in these studies In order to assess these potential impacts the following baseline information will be assessed:

- Air quality impact assessment;
- Ecological Assessment;
- Soil and land Capability;
- Heritage Impact assessment
- Water Use Licence

## Way Forward

The way forward recommended by this study is as follows:

- Make the Scoping Report available for public comment for a period of 30 calendar days;

- Revising and updating the specialist studies conducted so far incorporating comments from I&AP's;
- Making these studies available for review to all I&AP's;
- Requests for comments and issues raised during the previous EIA/EMPr consultation period on the draft report to enable incorporation and make changes to the report and make it available for at least 60 days during the EIA phase;
- Submit the Scoping Report to the competent authority for permission to undertake the Impact Assessment Phase of the project;
- Upon approval of the Scoping Report, all I&APs are to be notified of the conditions of the Department of Mineral Resources for proceeding with the Impact Assessment Phase of the project; and
- Execute the Plan of Study for Impact Assessment during the Impact Assessment Phase of the project.

**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.

## SCOPING REPORT

## 2 CONTACT PERSON AND CORRESPONDENCE ADDRESS

a. The details of the environmental assessment practitioners (EAPs) that were involved in the preparation of this scoping report are provided in Table below.

| ITEM | DETAILS |
|---|---|
| **i) Details of the EAP** | |
| Name Of Practitioner | Divhani Mulaudzi |
| Tel no | 076 1727188 |
| Fax no: | 086 620 5723 |
| **ii) Expertise of EAP**<br><br>**See attached CV** | |
| Qualifications of the EAP | Bsc (Hons) Botany |

QUALIFICATIONS AND EXPERIENCE OF THE EAP

## b. Description of the Project

| | Farm Name & Portions | 21 digit Surveyor General Code for each farm portion |
|---|---|---|
| Description of land | FARM 565 PTN 0, | C03100000000056500000 |
| | FARM 562 PTN 0 | C03100000000056200000 |
| | FARM 52 PTN 0 | C03100000000005200000 |
| | FARM 52 PTN 1 | C03100000000005200001 |
| | FARM 42 PTN 0, | C03100000000004200000 |
| | FARM 41 PTN 0 | C03100000000004100000 |
| | FARM 41 PTN 1 | C03100000000004100001 |
| | FARM 40, PTN 0, | C03100000000004000000 |
| | FARM 39 PTN 0, | C03100000000003900000 |
| | HOPEFIELD ESTATE 552 PTN 0 | C03100000000055200000 |
| | HOPEFIELD ESTATE 552 PTN 1 | C03100000000055200001 |
| | KOGELBEEN 44 PTN 0 | C03100000000004400000 |
| | KOGELBEEN 44 PTN 1 | C03100000000004400001 |
| | KOGELBEEN 44 PTN 2 | C03100000000004400002 |

| | | |
|---|---|---|
| | LA PROVENCE 51 PTN 0, | C03100000000005100000 |
| | MESNARD 38 PTN 0 | C03100000000003800000 |
| | MESNARD 38 PTN 1 | C03100000000003800001 |
| | ROOIPAN 43 PTN 0 | C03100000000004300000 |
| | The mining right application area is approximately 35,2490ha of which ~ 200ha covers the mine plan. The disturbance area will be much less than this because the surface infrastructure and proposed mining area are limited in extent. The approximate area of the proposed surface infrastructure is ~ 120ha (Mine Pit) | |
| Magisterial district: | Z F Mgcawu District Municipality DC8- Tsantsabane Local Municipality<br>Pixley ka Seme District Municipality DC7- Siyancuma Local Municipality | |
| **Distance and direction from nearest town** | 11 Km north of Griekwastad | |

c) **Locality map**

(show nearest town, scale not smaller than 1:250000 attached as **Appendix 3).**

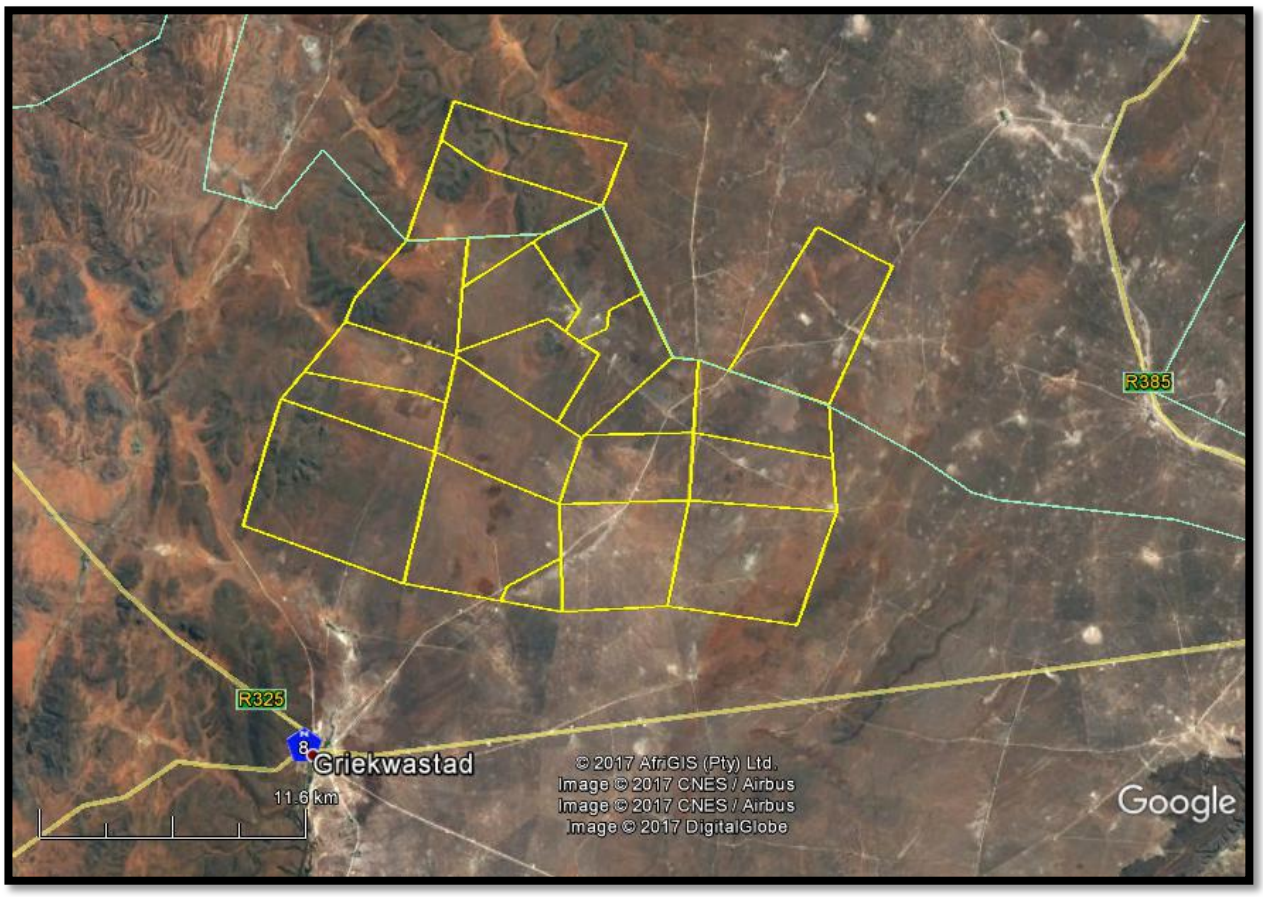



Figure 1. Map of the applied area

## d) Description of the scope of the proposed overall activity.

### 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 attach as **Appendix 4**

Mukope Group has applied for a Mining Right for Limestone in various farms. This was after Mining and exploration through Mining and limestone was found in Mesnard farm and as such, a mining right has been applied in the whole area which was held under the Prospecting Right licence NC11003PR.

The mining right main activity will include Mining, blasting, loading, crushing, screening and storage of limestone. Some of the limestone will be burned in a kiln in order to make other lime products such as hydrated lime.

### Construction Phase

Construction Phase - Activities

The following activities are expected to take place during construction:-

- Site establishment of temporary infrastructure/facilities required to support construction phase
- Clearing of vegetation in accordance with the relevant vegetation management procedures;
- Stripping and stockpiling of soil resources and earthworks in accordance with the relevant soil conservation procedures;
- Sourcing of material for construction;
- Establishment of storm water management facilities such as recycle water ponds/ pollution control dams and clean water realignment berms;
- Excavation of pit;
- Establishment of water treatment plant;
- Establishment of sewage treatment plant;
- Construction of administrative block;
- Construction of overland conveyor with associated service road
- Installation of main tower tank, potable and process water tanks and the fire water tank; and
- Establishment of access control facilities.

*Construction Phase - Surface Infrastructure*

Temporary construction facilities will be established on site to support the construction phase. These facilities could include:-

- Contractor's laydown areas;
- Workshops/maintenance area for servicing and maintaining equipment and vehicles;
- Temporary waste collection and storage area;
- Store for the storing and handling of fuel, lubricants, solvents, paint and construction substances;
- Parking area for cars and equipment;
- Mobile site offices;
- Portable ablution facilities;
- Change houses;
- Soil and overburden rock (pit excavation material) stockpiles for pit excavation material;
- Borrow pits;
- Water management infrastructure;
- Security and access control;
- Main access road and internal roads; and
- Generator(s) for temporary power supply.

These facilities would either be removed at the end of the construction phase or incorporated into the layout of the operational mine.

*Transport System Roads*

Access to the project site will be provided via a gravel road that links Griekwastad to Lime Acres and the R385 provincial road. Mukope will consider to upgrade the gravel road into tar and a new intersections in order to transport staff, material, equipment, and waste material to and from the construction site.

Conveyor An overland conveyor with an associated service road will be constructed to transport ore from the proposed lime mine to the stockpile area at the vicinity. The conveyor will be between 1.2m and 1.5m wide and will vary in length.

**Pipelines**

The proposed project will require the establishment of a series of pipelines for the transportation of potable water, process water and sewage effluent. Pipelines will be

installed to transfer potable and process water within a water reticulation system which will be situated at the complex. All the water reticulation pipelines will be of a high density polyethylene standard and will vary between 50mm and 225mm in diameter. The sewage pipelines between the change houses, office block and sewage treatment plant will be 100mm in diameter.

*Water Supply and Management*

Potable and construction water

A total volume of 50 000$m^3$ of water (potable and process) will be required during the construction phase. Potable water will be made available from the neighbouring farm boreholes while construction water will be made available from on-site boreholes.

*Power Supply and Use*

Generators will be used as the primary power supply. A total of 1MW will be required for Mining, welding and construction lighting.

*Mineralised Waste Management*

Overburden removed during the pit excavations will be stored on a waste rock dump until reuse. Overburden will be used during decommissioning and closure of the pit.

*Non-mineralised Waste Management*

Domestic and industrial waste Facilities for the temporary storage of non-mineralised waste associated with the project will be provided. The types of waste that could be generated during the construction phase includes: hazardous industrial waste (such as packaging for hazardous materials, used oil, lubricants), general industrial waste (such as scrap metal, contaminated wood and building rubble), and domestic waste (such as packaging and food waste). These wastes will be temporarily handled and stored on site before being removed for recycling by suppliers and approved waste handling companies, reuse by scrap dealers or final disposal at permitted waste disposal facilities in the area.

*Sewage*

Construction workers will make use of portable toilets serviced on a regular basis. The sewage will be removed off-site by a reputable waste contractor for disposal at a licensed waste facility.

### *Construction Phase Employment and Housing*

An estimated of between 50-100 employment opportunities will be available during the construction phase. No housing will be provided on site as construction workers will be accommodated in the nearby towns.

*Operating Hours*

It is anticipated that the construction phase will consist of 1 shift per day from 06h00 to 18h00 from Monday to Friday. Saturdays will consist of a half shift from 06h00 to 12h00. In the instance where emergency action or critical activities are required, motivation will be provided for the extension of the construction hours.

*Construction Phase Timing*

Provided the required authorisations are obtained, construction is expected to take 3 years. This will be the maximum time taken to get the mine into full operations. Construction will occur concurrently with the actual mining at some instances.

*Security and Access Control*

A fence will be erected around the perimeter of the proposed Mukope mining area infrastructure areas with a designated access control and security office for the pit complex area.

## Listed and Specified Activity

| **Name of activity** | **Arial Extent of the activity (Ha or M2)** | **Listed Activity (mark with an X)** | **Applicable Listing Notice (GNR 983, GNR 984 or GNR 985/Not Listed** |
|---|---|---|---|
| Clearance of Vegetation | 110Ha | x | Activity 15 of Listed Notice 2 GNR 984 |
| Removal of Topsoil and overburden | 105Ha | x | Activity 15 of Listed Notice 2 GNR 984 |
| Mining of Limestone | 200Ha | x | Activity 17, 16, 6 of Listing Notice 2 GNR 984 and (GNR 983 14, 12,19, 46) GNR 985, 1, 12, 14, 15, 18 |

| | | | |
|---|---|---|---|
| | | | |
| Topsoil Stockpile | | | Not Listed |
| Construction of a road | | | Activity 56 of Listing Notice 1 GNR 983 |
| Crushing and Screening of Material | | x | Activity 21 of Listing Notice 2 GNR 984 |
| Usage of Chemical Toilets | | | Not Listed |
| **Earth works:**<br>Stripping and stockpiling topsoil and sub-soil and the establishment of a topsoil stockpile area and berm | Vary in size | x | GNR 983 (Activity 27, 28 and 30)<br>GNR 984 (Activity 15 and 17) |
| **Civil Works:**<br>General Building Activities<br>Foundation Excavations and compaction<br>Mixing of concrete<br>Steel works | Vary in sixe | x | As Above |
| Blasting and Mining | | x | GNR 984 (Activity 17 and 19) |
| **Transport:**<br>Establishment of main and internal access and maintaining roads | | x | GNR 984 (Activity 17 and 27)<br>GNR 983 (Activity 24 and 28) |
| **Water Supply use and Management:**<br>Establishment of water supply boreholes | | x | GNR 983 (Activity 27 and 28)<br>GNR 984 (Activity 15 and 17) |

| | | | |
|---|---|---|---|
| Establishment of sewage and water Treatment plants | | | GNR 983 (Activity 10, 25, 27 and 28)<br>GNR 984 (Activity 15 and 17) |
| **Power Supply and Use:**<br>Use of Generators<br><br>Establishment of proposed Sub-station | | x | GNR 983 (Activity 2)<br>GNR 984 (Activity 17)<br>GNR 983 (Activity 11)<br>GNR 984 (Activity 15) |

## 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)

Mukope Group Intends to mine Limestone. This is both high grade and low grade limestone.

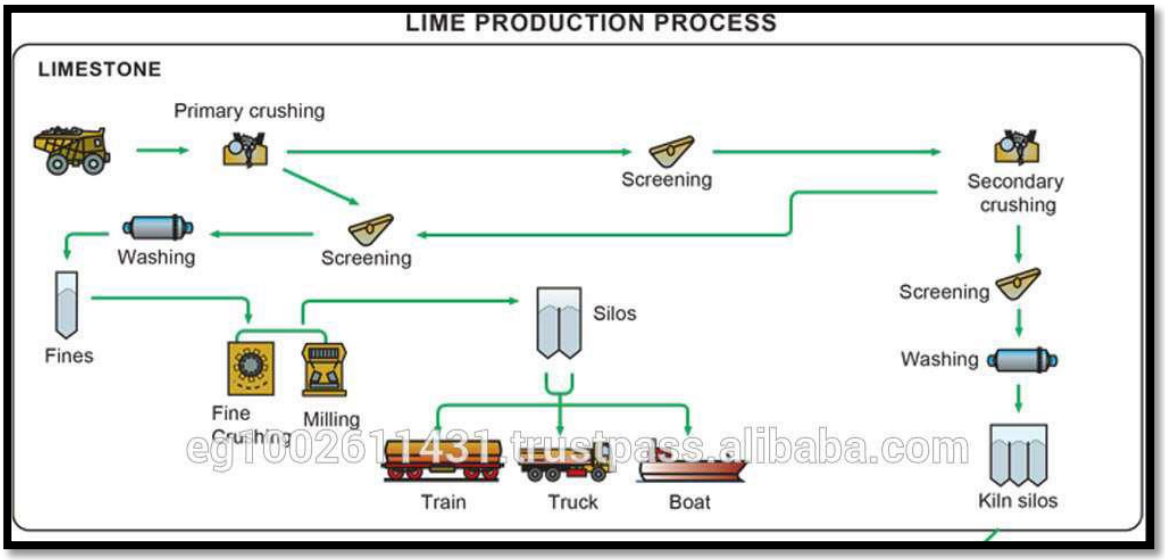
Mukope Limestone mining will be started by the removal of the topsoil and overburden. The quarrying process is conducted by means of diesel-electric haul trucks, hydraulic and electric rope shovels and other associated mining equipment, and involves: Clearance of vegetation, Removal of topsoil, the temporary stockpiling of topsoil for later transportation to rehabilitation area, with the aim of utilising such topsoil as soon as possible in order to prevent prolonged stockpiling of the soil and due to minimal availability of topsoil;

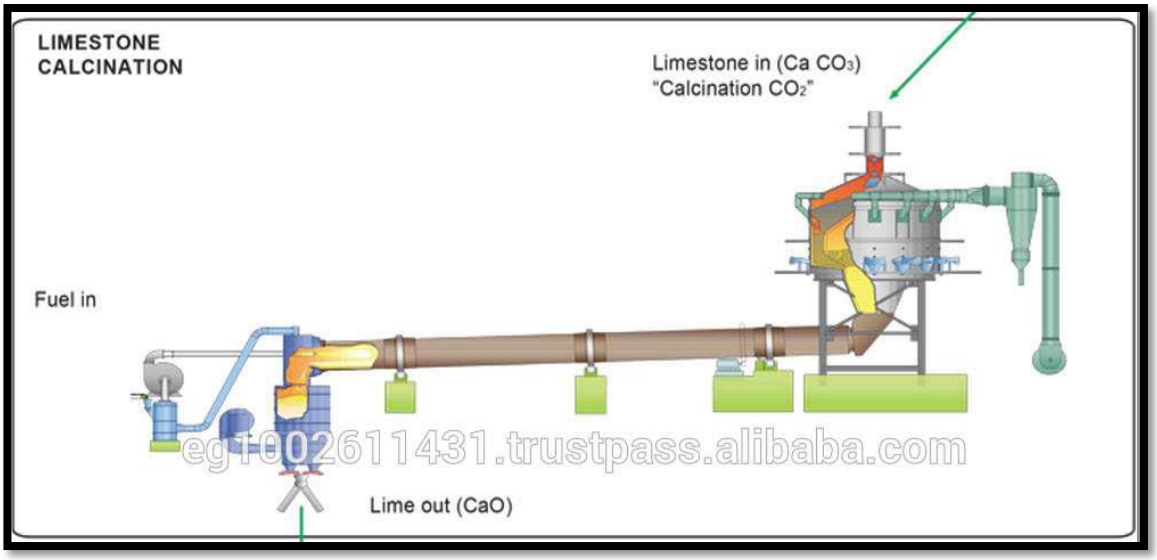
After the removal of the topsoil and stockpiling, Mining, blasting, mining, loading and hauling of the limestone to the existing primary crusher. There is a possibility of establishing a primary crusher insider the pit over a period of time. The crushed material will be transported via conveyor/trucks to a secondary crusher.

Mukope plans to mine the Mesnard area for the duration of 20years before moving to another area within the same mining right, given the fact that the mining right size is in excess of 35 000Ha.

*Ore Processing*

The process begins by extracting the lime rock from the quarry, transport it to the primary crusher, where crushing and screening takes place. Various crushing and screening takes places and washing as well. Depending on the product, some of the product is just crushed and screened then sold as it is. While some of it will go into the kiln to get heated or burnt.




In the kiln, Calcination or burning of the limestone takes place into the rotary kiln. The kiln uses coal fired kilns to burn the lime. After the heating of limestone, the limestone must be cooled, store then transported to the respective clients

## e) Policy and Legislative Context

| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT | RELEVANCE OR REFERENCE |
|---|---|
| Mineral and Petroleum Resources Development Act, 2002 (MPRDA, No. 28 of 2002). | THROUGH OUT THIS DOCUMET |
| National Environmental Management Act, 1998 (NEMA, No. 107 of 1998). | |
| Environmental Impact Assessment regulations (Government Notice Regulation (GNR) 982, 983, 984 and 985, published 4 December 2014) (EIA Regulations) in terms of NEMA. | |
| DEA (2010), Guideline on Need and Desirability, Integrated Environmental Management Guideline Series 9, Department of Environmental Affairs. | |
| DEA (2010), Public Participation 2010, Integrated Environmental Management Guideline Series 7, Department of Environmental Affairs. | |
| SANBI Grasslands Programme's Mining and Biodiversity Guideline (2012) | |
| National Environmental Management: Biodiversity Act, 2004 (NEM:BA No 10 of 2004) | |
| Conservation of Agricultural Resources Act, 1983 (CARA, No. 43 of 1983); | |
| National Veld and Forest Fire Act No. 101 of 1998 | |
| SANBI Wetland Inventory (2006) | |
| International Union for Conservation of Nature (IUCN) | |
| National Protected Areas Expansion Strategy 2008 (NPAES) | |
| South African National Botanical Institute (SANBI) Integrated Biodiversity Information | |

| | |
|---|---|
| National Heritage Resources Act, 1999 (NHRA, No 25 of 1999); | |
| Local Municipality Environmental Laws | |
| Kgatelopele Local Municipality. Water Services By-law published under General Notice 81 in Northern Cape Province Gazette 1638 of 15 October 2012 | |
| The Environmental Impact Assessment Regulation GNR. 982 dated 04 December 2014. | |
| The Environmental Impact Assessment Regulation. Listing Notice 1. GNR. 983 dated 04 December 2014. | |
| The Environmental Impact Assessment Regulation. Listing Notice 2. GNR. 984 dated 04 December 2014. | |
| Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010. Government Notice 891 of 2014. | |
| Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector. | |
| Northern Cape Nature Conservation Act, 2009 (Act No.9 of 2009). | |
| The National Environmental Management: Air Quality Act (Act No 39 of 2004). | |
| SABS Code of Practice 0103 of 2008: The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication.<br><br>SABS Code of Practice 0328 of 2008: Environmental Noise Impact Assessments | |
| DMR Guideline for Consultation with communities and Interested and Affected Parties. As required in terms of Sections 16(4)(b) or 27(5)(b) of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), and in accordance with the standard directive for the compilation thereof as published on the official website of the Department of Mineral Resources | |
| Integrated Environmental Management Information Series. Criteria for determining alternatives in EIA. | |

## 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).

The South African economy is experiencing a boost and boom especially in the mining and manufacturing sector. The more the country grows and expands, the more jobs are created. South Africa has a vast number of big projects that are in the pipeline, this range from commercial, recreational and residential. The development of a limestone mine which will also produce cement will be helpful in the increase in output of another small role player in the cement market. Further and above the production of cement, Mukope is looking at various products such as emission control such as factories and power-stations as this reduces more than 95% of carbon dioxide produced into the atmosphere. The use of limestone produces clean air and as such reduces air pollution. The project site has been selected on the basis of the presence of an economically mineable resource. It should also be noted that the Griekwastad area has a serious high level of illiteracy as well as unemployment and as such, this project will help with reducing and eradicating.

The proposed project plan and site layout has been based on limiting the project footprint and trying to avoid sensitive areas where possible from an environmental and social perspective, while still considering engineering feasibility and financial factors. Development of the mine supports the national SA economy at a macro level by gearing sales in the local markets by creating income to the country. Direct economic benefits will be derived from wages, taxes and profits. Direct economic benefits for locals will be derived from the procurement of goods and services and the spending power of employees. This is in line with the Seyacuma Local Municipality which identifies mining as a strategic objective for economic development and job creation supporting and guiding development. Mining diversifies and strengthens the local economy by providing a long term advantage to the creation of sustainable economies, communities and jobs. Further to this, through employment, persons at the proposed mine will gain skills in the construction and operation of a mine in keeping with the skills upgrading and development which contributes to the building of the nation.

## g) Period for which the environmental authorisation is required

The mine is expected to run for the maximum period of 30 years and as such the Environmental Authorization will be required for such a period**.**

## 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 (1) 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.

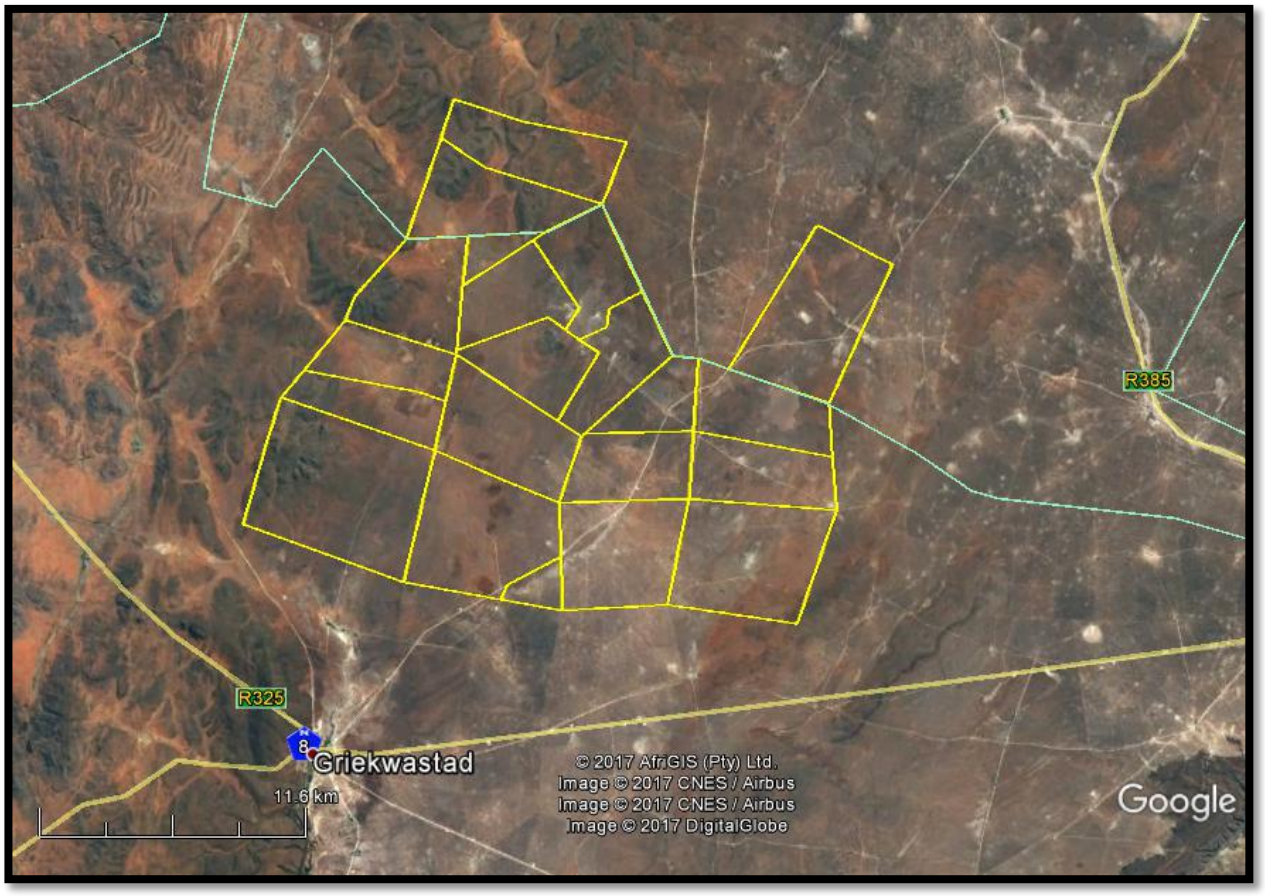
## i) Details of all alternatives considered.

With reference to the site plan provided as Appendix 4 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;

The area in which the activity will be taking place is Mesnard. However the whole Mining Right is on the properties listed below as well as the map attached.

FARM 565 PTN 0, FARM 562 PTN 0, FARM 52 PTN 0 & 1, FARM 42 PTN 0, FARM 41 PTN 0 & 1, FARM 40, PTN 0, FARM 39 PTN 0, HOPEFIELD ESTATE 552 PTN 0 & 1, KOGELBEEN 44 PTN 0, 1, 2 & 3, LA PROVENCE 51 PTN 0, MESNARD 38 PTN 0 & 1 ROOIPAN 43 PTN 0




*the type of activity to be undertaken;*

Open cast mining for Limestone

*the design or layout of the activity;*

Mining will be strictly conform to the granted areas as well as the listed activity.

*the technology to be used in the activity;*

Mining faces are drilled by means of twin boom diesel-electric-hydraulic Mining rigs and drill holes are charged with emulsion. The blast is initiated remotely (centralised blasting). The process begins by extracting the lime rock from the quarry, transport it to the primary crusher, where crushing and screening takes place. Various crushing and screening takes places and washing as well. Depending on the product, some of the product is just crushed and screened then sold as it is. While some of it will go into the kiln to get heated or burnt

*the operational aspects of the activity; and*

Mining faces are drilled by means of twin boom diesel-electric-hydraulic Mining rigs and drill holes are charged with emulsion. The blast is initiated remotely (centralised blasting). The process begins by extracting the lime rock from the quarry, transport it to the primary crusher, where crushing and screening takes place. Various crushing and screening takes places and washing as well. Depending on the product, some of the product is just crushed and screened then sold as it is. While some of it will go into the kiln to get heated or burnt

*the option of not implementing the activity.*

By Mukope not implementing the project, it risks loss of the money already spent on all processes taken thus far in order to obtain a Mining right as well as all the money spent to prospect together with the lodging of a Mining Right. Furthermore, the area is rich in varying grades of limestone which can be mined, processed and sold to the market for a profit. All these combined would mean that the country has lost in potential revenue (tax collection), failed our fellow country man by not developing the mine and creating jobs as well as potential loss of income for Mukope. This is over and above the fact that a product need to be sold to the market and the fact that very very few role players in the lime sphere exist which are 100% BEE

## 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.

Please see the attached consultation report as well as process and minutes of the meeting.

## iii) Summary of issues raised by I&Aps

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

| **Interested and Affected Parties**<br><br>**List the names of persons consulted in this column, and**<br>**Mark with an X where those who must be consulted were in fact consulted.** | | **Date Comments Received** | **Issues raised** | **EAPs response to issues as mandated by the applicant** | **Section and paragraph reference in this report where the issues and or response were incorporated.** |
|---|---|---|---|---|---|
| **AFFECTED PARTIES** | | | | | |
| **Landowner/s** | X | 06/10/17 | | | iv) Baseline Environment |
| **Lawful occupier/s of the land** | X | | | | Section j and e |
| **Landowners or lawful occupiers on adjacent properties** | | | | | Section j |
| **Municipal councillor** | X | | | | Rehabilitation and closure |
| **Municipality** | X | 8/07/2017 | | | |
| **Communities** | X | | | | |
| **Dept. Land Affairs** | | | | | |
| **Traditional Leaders** | | | | | |
| **Dept. Environmental Affairs** | | | | | |
| **Other Competent Authorities affected** | | | | | |
| **OTHER AFFECTED PARTIES** | | | | | |
| **INTERESTED PARTIES** | | | | | |
| | | | | | |

## iv) The Environmental attributes associated with the sites

## (1) Baseline Environment

## (a) Type of environment affected by the proposed activity.

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

*ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE PROJECT AND ALTERNATIVES*

The baseline information provided here is aimed at giving the reader perspective on the existing status of the cultural, socio-economic and biophysical environment. More detailed information will be provided in the EIA report once the specialist reports and other research has been concluded.

- Air Quality
- Climate
- Topography
- Soil
- Fauna and Flora
- Surface Water & Ground Water
- Noise
- Visual
- Site of Archeological and Heritage significance
- Geology

*Air quality*

A change in ambient air quality can result in a range of impacts, which in turn, may cause a disturbance to nearby receptors. As a baseline, this section provides a short description of pre-mining conditions in the area from which to measure changes as a result of the proposed project. More detailed information will be provided in the EIA and EMP.

**Results/Conclusion**

Existing emission sources

Neighbouring land-use in the surrounding of the proposed project area comprises predominantly of farming and mining activities. These land-uses contribute to baseline pollutant concentrations via the following sources:

- Mining sources: Fugitive emissions from open cast and underground mining operations mainly comprise of land clearing operations (i.e. scraping, dozing and excavating), materials handling operations (i.e. tipping, off-loading and loading, conveyor transfer points), vehicle entrainment from haul roads, wind erosion from open areas, Mining and blasting. These activities mainly result in particulates and dust emissions, with small amounts of oxides of nitrogen (NOx), carbon monoxide (CO), SO2 and CO2 being released during blasting operations.
- Road Source: The area applied for does not have a tar road and as such, the locals use tar road to move from one farm to the next. During dry and hot times of the day, if vehicles drive at high speed a lot of dust is generated.

*Geology*

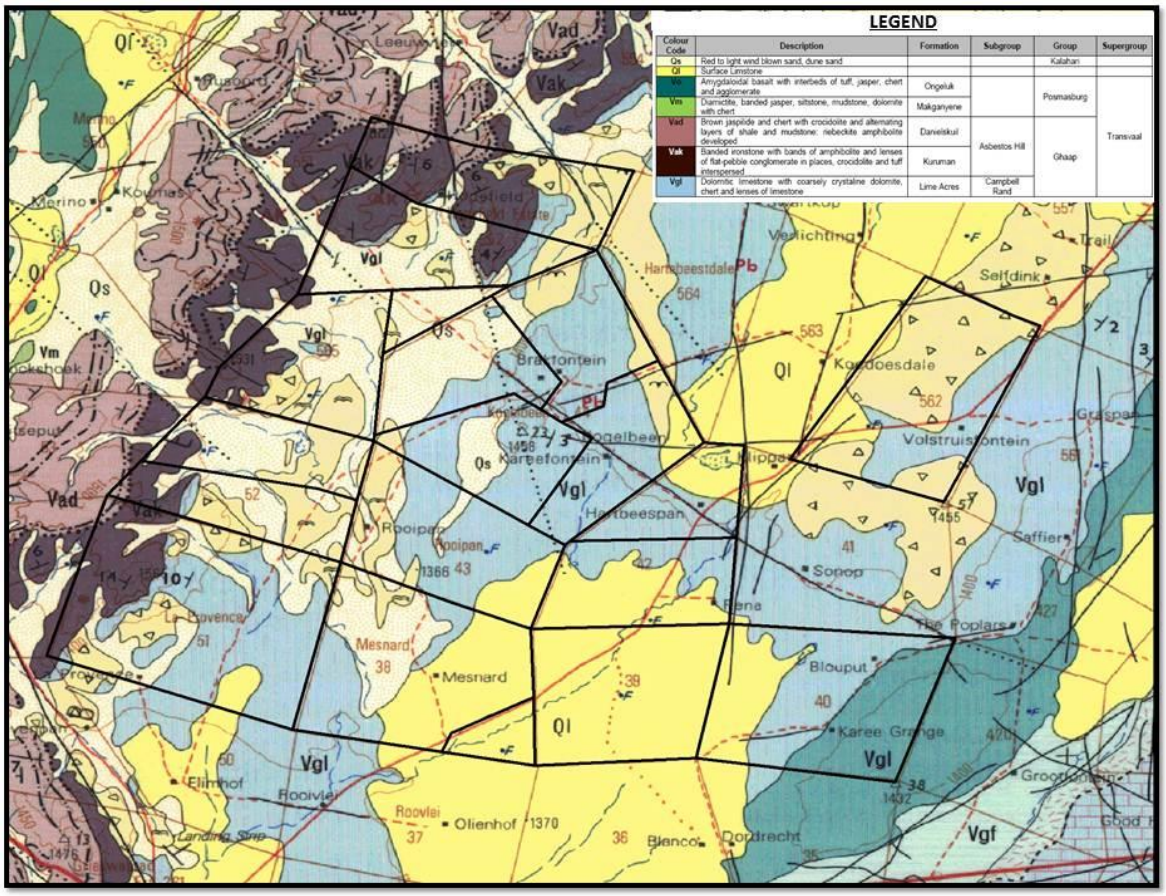
The geology of the study area near Griquatown is shown on the regional 1: 250 000 geological map of the Postmasburg area, sheet 2822 (Council for Geoscience, Pretoria). Although brief explanatory notes are printed on the published map, a comprehensive geological explanation for this sheet has not yet been written.

The area is also covered by the older 1: 125 000 scale geological map of the Griquatown area, sheet 175 for which there is a short explanation (Visser, 1958). The study area is entirely underlain by relatively undeformed sediments and subordinate lavas of the Ghaap and Postmasburg groups which both are assigned to the Transvaal Supergroup (Late Archaean to Early Proterozoic age). They form part of the thick Ghaap Plateau Sub-basin succession within the Griqualand West Basin, dipping and younging gradually towards the northwest. The stratigraphy of the relevant formations as modified from (Eriksson, 2006) is also indicated below.

The Ghaap Group represents some 200 million years (Ma) of chemical sedimentation, notably iron and manganese ores, cherts, carbonates and minor siliciclastics within the Griqualand West Basin. The Griqualand West Basin was originally situated towards the

western edge of the Kaapvaal Craton. The Campbell Rand Subgroup of the Ghaap Group is a very thick (1.6 - 2.5 km) carbonate platform succession of dolostones, dolomitic limestones and cherts with minor tuffs and siliciclastic rocks that was deposited on the shallow submerged shelf of the Kaapvaal Craton roughly 2.6 to 2.5 Ga (Mccarthy, 2005).

A range of shallow water facies, often forming depositional cycles reflecting sea level changes, are represented here, including stromatolitic limestones and dolostones, oolites, oncolites, laminated calcilutites, cherts and marls, with subordinate siliclastics (shales, siltstones) and minor tuffs (Eriksson, 2006) (Sumner, 2006). Potentially fossiliferous carbonates (i.e. limestones, dolostones) of the “Ghaapplato Formation” crop out within the Mining right area. Due to their solubility and low resistance to weathering, exposure levels of these carbonate sedimentary rocks are often very low.
The lower Transvaal Supergroup consists of a mixed siliciclastic-carbonate ramp that grades upward into an extensive carbonate platform, overlain by banded iron formation (Dawn Y. Sumner, 2006).



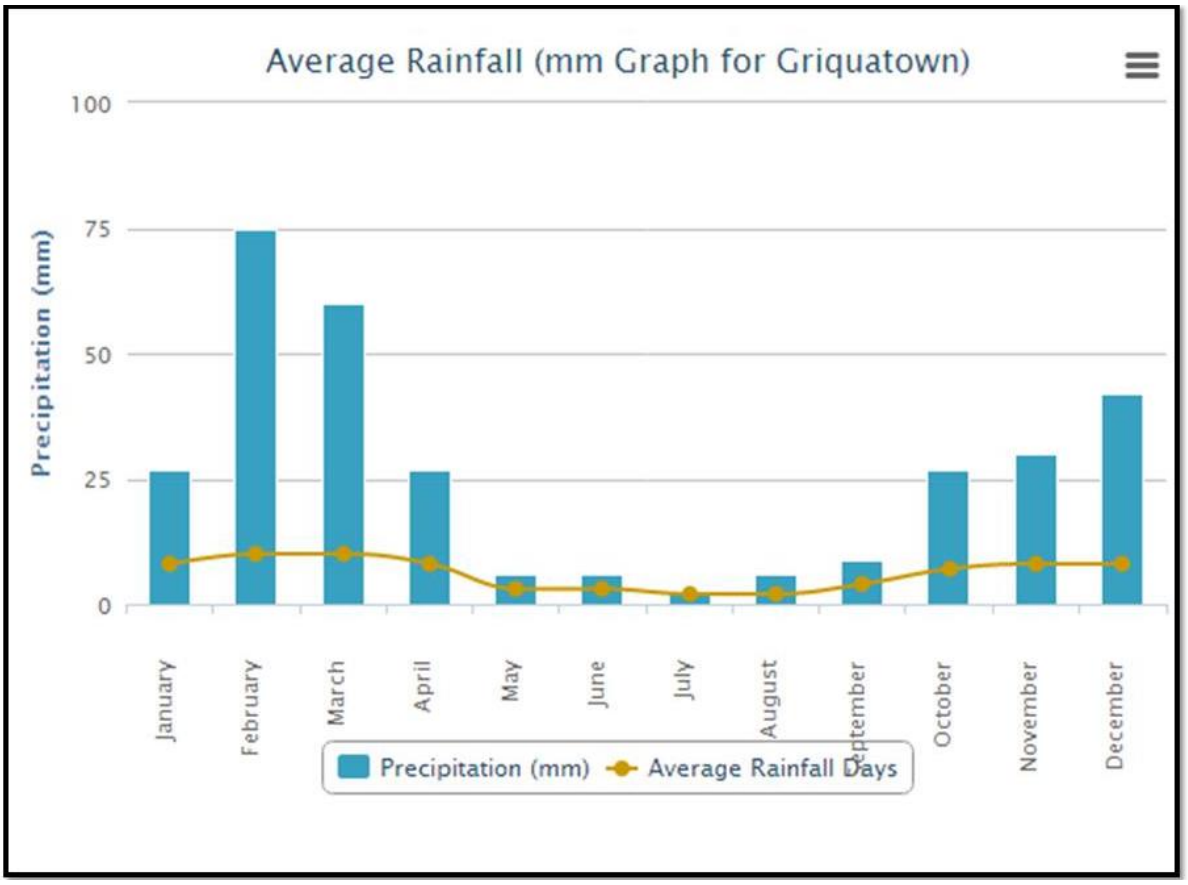

*Climate*

Northern Cape Province that can be described as a semi-desert region with a temperature above 40°C in summer. To find the most accurate and reliable information

about the climate and precipitation of Griekwastad, the published results of asurements taken in Kimberley (152 km away from Griekwastad) are used. The climate in Griekwastad is a steppe climate. This climate is characterized by the drought that dominates in this area. The annual rainfall is between 250 and 500 mm, mainly in the summer.

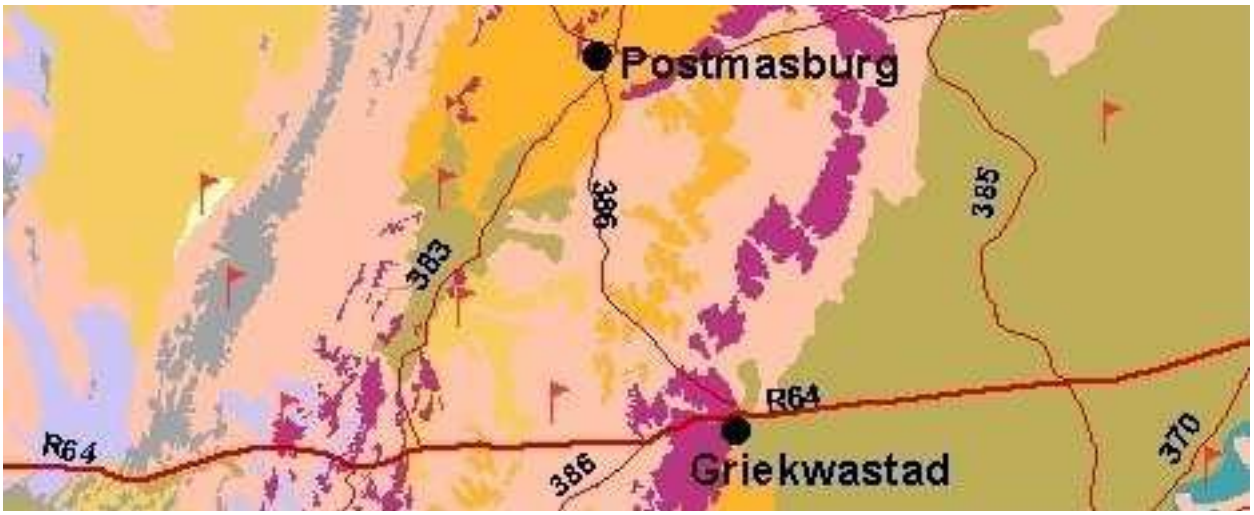
The winters in a steppe climate are much colder. The temperature of the country may drop during the winter months. the average precipitation lies between 61-100 mm in January, February and March. In October, November and December it amounts 31-60 mm, and less than 30 mm in the other months of the year. The highest temperatures

are expected in the summer months, mainly November, December, January and February. Possible winters can appear in June, July and August, which brings risks like night frost for the crops. These climatic conditions make the area rather dry and cause problems regarding water supply for the inhabitants. Hence, these people lack the basic needs to be able to have a good living standard.




*Soil Type*

(Rock areas with miscellaneous soils *(in dark purple)*). These are areas where 60-80% of the surface is occupied by exposed rock and stones/boulders and the slopes are usually steep. The rest of the area comprises mostly shallow soils, directly underlain by hard or weathered rock.




**Red-yellow apedal, freely drained soils** (Red, high base status soils, > 300 mm deep, without dunes *(in light pink)*). These are moderately deep (average 500-1200 mm) red, freely drained, apedal (= structureless) soils. Soils occur in areas associated with low to moderate rainfall (300-700 mm per annum) in the interior of South Africa and have a high fertility status. A wide range of texture occurs (usually sandy loam to sandy clay loam).

**Glenrosa and/or Mispah forms** (Other soils may occur (*in brown)*); lime generally present in the entire landscape. These are generally shallow soils consisting of a topsoil directly underlain by weathered rock (Glenrosa form) or hard rock (Mispah form), sometimes with surface rock and steep slopes. Found in drier areas than Broad Soil Pattern Fa or Fb (high quality blend of compost and humus) or areas on base-rich parent materials, so that lime occurs throughout the landscape.

**Red-yellow apedal, freely drained soils** (Red, high base status soils, < 300 mm deep (in *yellow)*) These shallow (< 300 mm), red, freely-drained, apedal (= structureless) soils occur in arid to semi-arid areas associated with low rainfall (< 500 mm per annum) and are underlain by hard to weathered rock. A wide range of textures may occur (usually loamy sand to sandy loam). Stones or rocks are often present on the soil surface.

### *Vegetation and Common Crops*

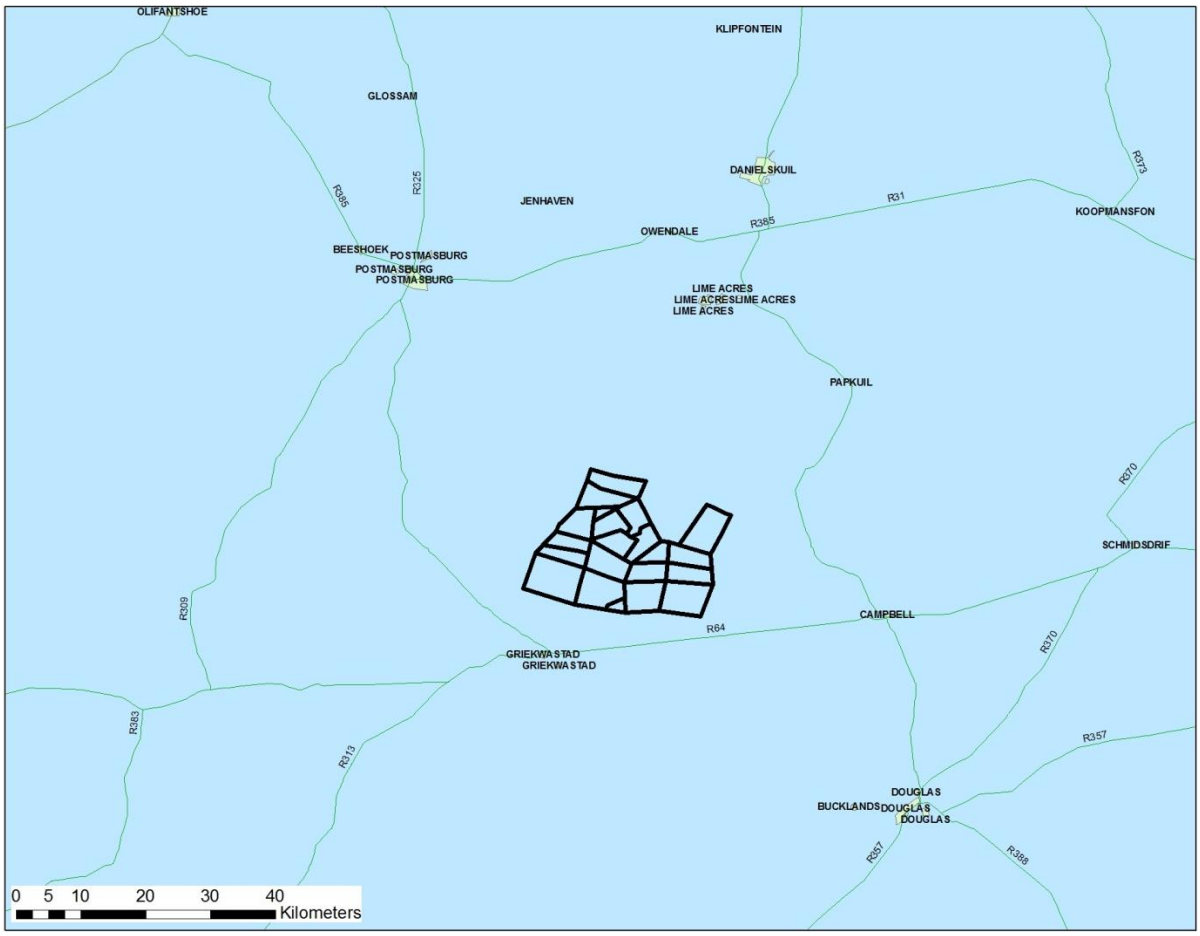
Because of the subtropical climate of South Africa ‘subtropical fruit’ are the best to cultivate in this area, mainly because they are climate adaptive crops. Subtropical fruits are citrus fruits, as well as olives, dates, figs, currants, raisins and nuts. Different nut trees are possible, like almonds, hazelnuts, walnuts, cashews, Brazil nuts and pecans. Citrus fruits such as oranges,

tangerines, grapefruit and lemons are also an option. The only disadvantage of those three is that they need 2000 millimeter water per year.

Other crops like cucumber, asparagus, baby marrows, barley, beetroot and even carrots are possible to grow in this region. The best types to grow in combination with the irrigation system are carrots, baby marrows, sweet corn, tomatoes, brinjals and chillies. Most of those plants can be harvest in 11 till 17 weeks and Baby marrows can be harvested in 6 weeks

### *Transport and logistic*

The area applied for has a well developed and maintained infustrure in terms of roads and rail. The area has a well mainted railway system which is approximately 30km North of this area, it is currently servicing the mine house of Lime Acres which is mining Limestone and Ulco on the North eastern side. The roads enevelope the area with the R385 on the North and the R64 on the south. This does put this project in a very lucritive area in terms of transportation and logistics wise.



## b) Description of the current land uses.

The current land use is dwelling and farming

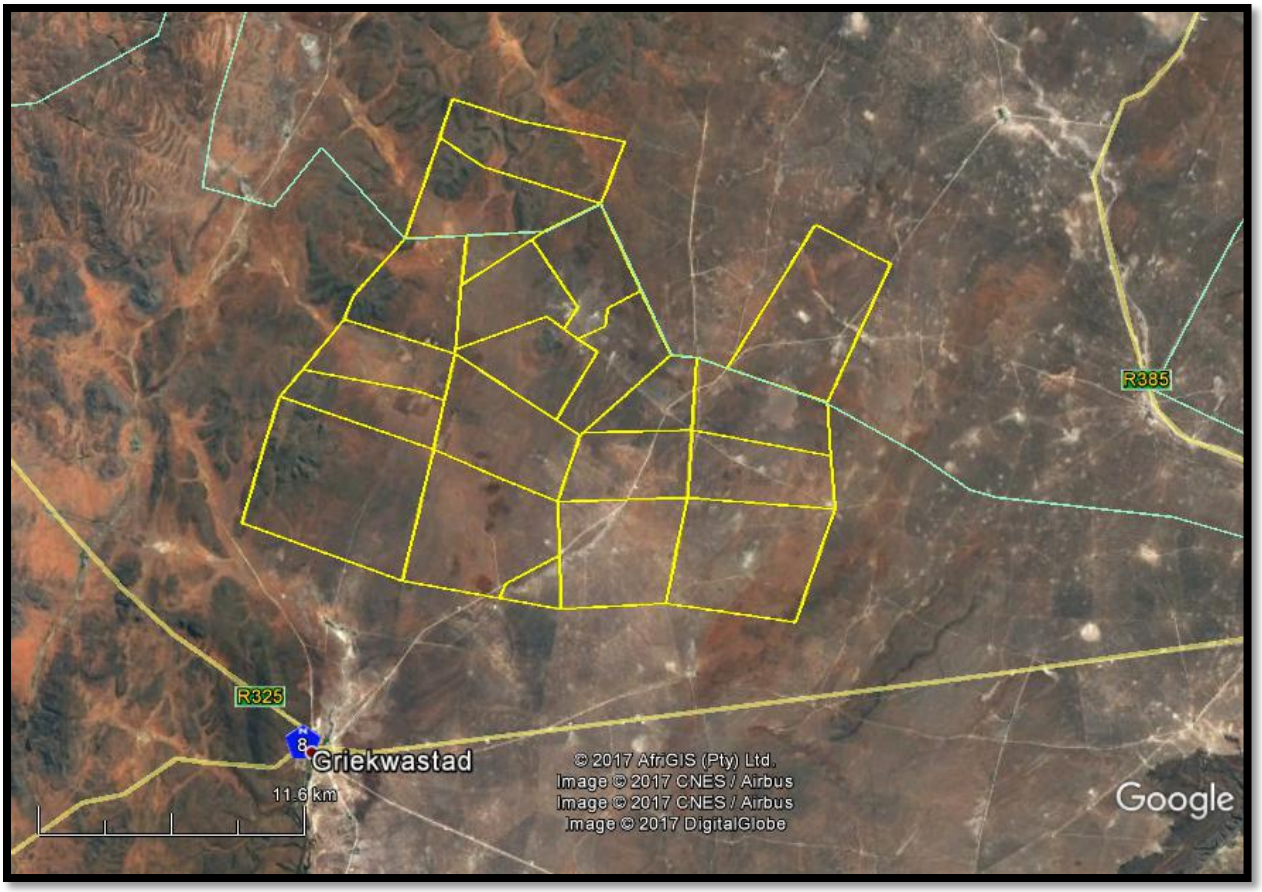
## (c) Description of specific environmental features and infrastructure on the site.

The current land use is a few farm houses in the area which the farm owners are using as their homes. In terms of Mesnard, there are a few masonry structures which the land owner is using. These will be incorporated in the mine and will form part of the mine and used by the mine personnel. No mining will happen within a 100m from any infrastructure.

## (d) Environmental and current land use map.

(Show all environmental, and current land use features)

The current land use is dwelling and farming




## v) 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 Scoping Report

The Impact identified are Air Quality, Climate, Topography, Soil, Fauna and Flora, Surface Water & Ground Water, Noise, Visual, Site of Archeological and Heritage significance, Geology

## vi) 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 was determined in order to decide the extent to which the initial site layout needs revision).

The assigning of the significance to potential impacts is integration of the severity (magnitude of the potential impacts), type of the impact, extent to which the impact will occur, probability of the impact (the likelihood of the impact occurring) and the duration of the impact. This is the best judgement of whether the impact is important or not within the broad context, once the mitigation is taken into account.

By using the combination of these criteria, impacts have been assigned a rating of high (H), medium/moderate (M), low (L), very low (VL) or no impact. A significance rating is assigned twice to the impact. Firstly, to indicate significance without mitigation or optimization and secondly, to indicate significance after mitigation or optimization. This is done to highlight the importance of mitigation or optimization of potential impacts.

| CATEGORY | DESCRIPTION/DEFINATION |
|---|---|
| High | **Impacts will be of high significance if one of the following apply:**<br>The extent is national to international;<br>The duration is long term to permanent;<br>The severity will be high;<br>Probability is definite |
| Moderate | **Impacts will be of moderate significance if one of the following apply:**<br>The extent is local to regional;<br>The duration is medium to long term;<br>The severity is major; |

| | |
|---|---|
| | The probability is highly probable |
| Low | **Impacts will be of low significance if one of the following apply:**<br>The extent is local;<br>The duration is temporary to permanent;<br>The severity is low;<br>The probability is probable |
| Very Low | **Impacts will be of very low significance if one of the following apply:**<br>The extent is site-specific<br>The duration is temporary to permanent;<br>The severity is very low<br>The probability is improbable |
| No impacts | A potential concern of impact which, upon evaluation, is found to have no impact |

This section provides a description of the methodology that was applied to assess the significance of environmental and heritage impacts. The significance rating process follows the established impact/risk assessment formula:

**Signgficance**= Consequence x Probability ,WHERE.

**Consequence**= Severity + Spatial Scale +Duration, AND

**Probability** = Likelihood of an impact occurring

The matrix first calculates the rating out of 75 and then converts this into a percentage out of 100. The percentage is the figure quoted in the matrix. The weight assigned to the various parameters for positive and negative impacts in the formula is presented in the Table below.

| Rating | Severity | | Spatial Scale | Duration | Probability |
|---|---|---|---|---|---|
| | Environmental | Social/Cultural Heritage | | | |
| 7 | Very significant impact on the environment. Irreparable damage to highly valued species, habitat or ecosystem. Persistent severe damage. | Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order. | International | Permanent to mitigation | Certain/ Definite |
| 6 | Significant impact on highly valued species, habitat or ecosystem. | Irreparable damage to highly valued items of cultural significance or breakdown of social order. | National | Permanent mitigated | Almost certain/ High probability |
| 5 | Very serious, long-term environmental | Very serious widespread | Province/Region | Project life (The | Likely |

| | | | | | |
|---|---|---|---|---|---|
| | impairment of ecosystem function that may take several years to rehabilitate. | social impacts. Irreparable damage to highly valued items. | | impact will cease after the operational life span of the project) | |

| | | | | | |
|---|---|---|---|---|---|
| 4 | Serious medium term environmental effects. Environmental damage can be reversed in less than a year. | On-going serious social issues. Significant damage to structures / items of cultural significance | Municipal Area | Long term (6-15 years) | Probable |
| 3 | Moderate, short-term effects but not affecting ecosystem function. Rehabilitation | On-going social issues. Damage to items of cultural significance. | Local | Medium term (1-5 years) | Unlikely/ Low probability |

| | | | | | |
|---|---|---|---|---|---|
| | requires intervention of external specialists and can be done in less than a month. | | | | |
| 2 | Minor effects on biological or physical environment. Environmental damage can be rehabilitated internally with/ without help of external consultants. | Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected. | Limited | Short term (Less than 1 year) | Rare/ improbable |
| 1 | Limited damage to minimal area of low significance, (e.g. ad hoc spills within plant area). Will have no impact on the environment | Low-level repairable damage to commonplace structures | Very Limited | Immediate (Less than 1 month) | Highly Unlikely/ None |

**Significance**

**Consequence (severity + scale + duration)**

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

| Significance | | |
|---|---|---|
| High | 108-147 | |
| Medium-High | 73-107 | |
| Medium-Low | 36-72 | |
| Low | 0-35 | |

**Potential impact of each main activity in each phase, and corresponding significance assessment**

**Activity 1**: ***Construction of phase***

**Impacted environment**: Topography, visual, soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life, and noise.

**Description:** This activity will involve equipment to be brought onto the site as well as the establishment of structures associated with Mining prior to the actual Mining. The significance of the impacts of the construction, operating and decommissioning of the plant on the environment is likely to be low to medium. There is a potential for most of the environment to be impacted over a limited spatial extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts on the affected environment

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Ground Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 5 | 4 | 11 | 5 | 55 | Medium-Low |
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |

**Activity 2**: ***Storage of hydrocarbons, chemicals, fuel***

**Impacted environment**: Soil, land capability, surface water, groundwater, natural vegetation.

**Description**: This activity involves the storage of hydrocarbons, chemicals and fuel in the project area. There is a potential for leakages from the storage sites to occur. The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with surface and groundwater occurring over a limited extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment. All vehicles, trucks, plants as well as storage of hydrocarbons need to be stored in a designated area where possible spillage can be capped/contained in order to minimize the

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 5 | 3 | 10 | 5 | 50 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 5 | 3 | 10 | 5 | 50 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Ground Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 5 | 3 | 10 | 5 | 50 | Medium-Low |
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |

**Activity 3:** F***ence***

**Impacted environment**: Visual, animal life

Description: This involves the placement of a fence within the farm. The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. The impact that the fence will have on animal life is potentially positive as animals such as livestock will be restricted from grazing in the project area, thus

preventing injury and possible overgrazing. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Visual | N | 2 | 4 | 3 | 9 | 5 | 45 | Medium-Low |
| C,O,D | Animal Life | P | 2 | 3 | 3 | 8 | 4 | 32 | Medium-Low |

**Activity 4**: **Removal and *storage of topsoil (Topsoil stockpile)***

**Impacted environment**: Soil, land capability, visual, topography, surface water, air quality, natural vegetation, animal life and noise.

**Description**: This activity will cause surface disturbance. The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with visual and noise occurring locally. Surface water and archaeology/ cultural heritage are most likely to occur on a municipal scale. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,D | Soil | N | 2 | 5 | 4 | 11 | 5 | 55 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,D | Visual | N | 3 | 4 | 3 | 10 | 5 | 50 | Medium-Low |
| C,O,D | Topography | N | 2 | 5 | 3 | 10 | 6 | 60 | Medium-Low |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Air Quality | N | 2 | 3 | 4 | 9 | 5 | 45 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |
| C,O,D | Cultural Heritage/Archaeology | N | 4 | 5 | 5 | 14 | 5 | 70 | Medium-Low |
| C,O,D | Noise | N | 3 | 2 | 3 | 8 | 6 | 48 | Medium-Low |

**Activity 5:** ***Transport of equipment***

**Impacted environment**: Soil, land capability, surface water, groundwater, air quality, natural vegetation, animal life, archaeology/ cultural heritage and noise.

**Description**: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent with noise potentially occurring over a local extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | Significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Ground Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Air Quality | N | 2 | 3 | 4 | 9 | 5 | 45 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 5 | 4 | 11 | 5 | 55 | Medium-Low |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |
| C,O,D | Cultural Heritage/Archaeology | N | 4 | 5 | 5 | 14 | 5 | 70 | Medium-Low |
| C,O,D | Noise | N | 3 | 2 | 3 | 8 | 6 | 48 | Medium-Low |

**Activity 6: *Ablutions***

**Impacted environment**: Soil, land capability, surface water and groundwater

**Description**: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for surface and groundwater which is most likely to occur over a limited extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Ground Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |

**Activity 7: *Domestic waste***

**Impacted environment**: Soil, visual, land capability, surface water, groundwater, natural vegetation and animal life.

**Description**: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for surface and groundwater which is most likely to occur on a limited spatial extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Visual | N | 2 | 4 | 4 | 10 | 5 | 50 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Groundwater | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |

**Activity 8: Access Roads**

**Impacted environment**: Soil, land capability, surface water, air quality, natural vegetation, animal life, wetlands, archaeology/ cultural heritage and noise.

**Description**: The significance of the impacts of the activity on the effected environment are potentially medium-low, with high probabilities of occurrence. Most of the environment will be potentially impacted over a limited spatial extent, except for noise which probably occur on a local scale and surface and groundwater as well as archaeology/ cultural heritage which will

occur on a municipal extent. Mitigation measures need to be applied in order to reduce or prevent the physical impacts from on the affected environment.

| Phase Impact Occurs (C,O,D) | Affected Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) | significance Rating (Pre-Mitigation) |
|---|---|---|---|---|---|---|---|---|---|
| C,O,D | Soil | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Land Capability | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Surface Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Ground Water | N | 4 | 5 | 5 | 14 | 4 | 56 | Medium-Low |
| C,O,D | Air Quality | N | 2 | 3 | 4 | 9 | 5 | 45 | Medium-Low |
| C,O,D | Natural Vegetation | N | 2 | 6 | 4 | 12 | 5 | 60 | Medium-Low |
| C,O,D | Animal Life | N | 2 | 4 | 6 | 12 | 4 | 48 | Medium-Low |
| C,O,D | Cultural Heritage/Archaeology | N | 4 | 5 | 5 | 14 | 5 | 70 | Medium-Low |
| C,O,D | Noise | N | 3 | 2 | 3 | 8 | 6 | 48 | Medium-Low |

**Mining**

The establishment of a mining activity within the region will permanently alter the geology of the region as more resources are being mined and there could be potential for the resources to the mined further. The project is still in the Mining phase thus, the impact on the geology is insignificant as the activities are site specific and involve Mining.

**Soils, land capability and land use**

Mining activities involve the Mining, but may affect land available for grazing and will increase the potential for soil erosion as soil erosion in the project area is minimal. The fencing of the project area will exclude animals from grazing, thus improving vegetation growth in the area.

Soil pollution from domestic waste and use of hydrocarbons spillages may occur. Thus, the activities will result in a potential increase in soil contamination. Soils that have been stripped can never be replaced in their original state due to the alteration of physical, chemical and biological soil properties during removal and stockpiling. Stockpiling influences soil properties negatively while the duration of the soil stockpiling in addition, causes soil deterioration, especially soil biological quality. The cumulative impact on regional land capability and land use is low due to the land use being predominately for agriculture which is dominated by grazing and used for housing. Thus, the activities will result in a low significance cumulative impact only being limited to the site and its immediate surroundings.

**Surface water**

There are no dams, rivers and ponds in the area.

**Groundwater**

Possible contribution of groundwater contamination includes spillages hydrocarbons sourced from trucks and machinery, ablutions and domestic waste. The total cumulative impacts are low as this will be limited to the site. During drilling, drilling took place up to 70m below ground level and no water was intercepted this also puts the contamination of ground water bodies at a low risk

**Air quality**

The area is a farming/grazing area, increased mining activities in the region will contribute to impacts on the ambient air quality levels. Vehicle movement could cause an increase in dust levels thus, will increase the existing dust levels in the area. The cumulative impact of agricultural activities on regional air quality is not considered as significant, since these impacts

occur only at specific times of the year and during the day. Increasing mining activities in the region will be of medium-high significance. Thus, the total cumulative impacts are expected to be medium- low.

**Noise**

Cumulative impacts are expected to be significant due to Mining machines and generators. The surrounding farmers will also contribute to noise levels in the area with regards to agricultural activities. Trucks and constructing machinery could also contribute to the noise levels. Operations of the Mining is expected to be a 24hour operations in the long run. However, its remoteness and isolation location makes it to be low impact on noise

**Flora**

The natural flora of the surrounding areas has is rarely disturbed due to lack of mining activities but livestock grazing increases such risks, and this reduces the significance of the cumulative effects of the Mining activities. Regionally, agriculture are present. The destruction of vegetation will only occur during the construction phase in a potentially disturbed area. The cumulative impacts will be more severe if endemic and Red Data plants occur in the area, but mitigation measures, such as the protection and removal of Red Data plants and the rehabilitation and re-introduction of animals currently present after closure should reduce significance of the negative cumulative impact.

**Fauna**

Regionally, agriculture, mining and industry are present. Towns and communities have developed; the cumulative impact on the fauna will be even less significant. The cumulative impacts will be more severe if endemic and Red Data animals occur in the area, but mitigation

measures, such as the protection and removal of Red Data animals and the rehabilitation and re-introduction of animals currently present after closure should reduce significance of the negative cumulative impact.

**Visual aspects**

The Mining will have a slight impact on the visual aspects especially given the fact that it is 11km north of the town and over and above that, it is 2.2km inside the farm from the gravel road. There are however, extensive existing impacts on the visual aspects of the area due to the presence of, roads, and other human infrastructure related to human activities. The cumulative impacts can be summarised in the table below:

| Impacted Environment | Nature of Impact (Negative/Positive) | Spatial Scale (7) | Duration (7) | Severity (7) | Consequence | Probability (7) | Significance (147) |
|---|---|---|---|---|---|---|---|
| Geology | N | 1 | 3 | 1 | 5 | 2 | 10 |
| Soils, Land capability and land use | N | 3 | 4 | 3 | 10 | 5 | 50 |
| Surface water | N | 3 | 3 | 2 | 8 | 4 | 32 |
| Groundwater | N | 3 | 3 | 2 | 8 | 4 | 32 |
| Air quality | N | 2 | 3 | 2 | 7 | 4 | 28 |
| Noise | N | 2 | 2 | 2 | 6 | 4 | 24 |
| Flora | N | 1 | 3 | 2 | 6 | 4 | 24 |
| Fauna | N | 1 | 3 | 2 | 6 | 4 | 24 |
| Site of Archaeological and Cultural Interest | N | 2 | 3 | 2 | 7 | 4 | 28 |
| Visual Impacts | N | 1 | 3 | 2 | 6 | 4 | 24 |

## vii) 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)

Potential impacts that were identified during the Scoping process are discussed under environmental component headings in this section. As indicated, the project would result in adverse surface disturbances on the pit area as the planned Mining in only in the pit area but this area will be fenced off to avoid any accidents and the mining activities would be managed and also rehabilitation will occur, as such, a 100m buffer zone must be adhered to all rivers and water features.

**Advantages**

Since the area concerns was selected based on desktop studies and literature review, we have found that the areas geology is that which is of the Campbell which hosts gold, limestone, and manganese, this area is best suitable for the Mining of limestone and the fact that it was available was an added advantage.

There are no known disadvantages of the selected site in terms of the mineral to be prospected for as well as the location and environmental issues/concerns, however, the selection of any site besides the selected site is the fact that the mineral to be prospected might not be available in the alternative site or the availability of the land to be prospected by this organisation.

## viii) 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,

Mining must be confined to the applied area and more specifically in Mesnard in the current times. When blasting happens, people who are 3km away must be notified and the nearest road must be closed for the duration of blasting.

## ix) The outcome of the site selection Matrix. Final Site Layout Plan

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

To be attached after PPP

## x) Motivation where no alternative sites were considered.

Other areas were considered but unfortunately they were already application on the same place for the same commodity by other entities and also the fact that Mukope had an existing PR on the very same area that the application for Mining has been lodged. This left Mukope with the current area for application. Other areas on the south and east do not possess the same geology and subsequently, the current applied land is the best under the circumstances.

## xi) Statement motivating the preferred site.

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

It possesses the best Geology, ore, grades and quantity and Mukope is the holder of a PR

## (i) Plan of study for the Environmental Impact Assessment process

### i. Description of alternatives to be considered including the option of not going ahead with the activity.

By Mukope not implementing the project, it risks loss of the money already spent on all processes taken thus far in order to obtain a Mining right as well as all the money spent to prospect together with the lodging of a Mining Right. Furthermore, the area is rich in varying grades of limestone which can be mined, processed and sold to the market for a profit. All these combined would mean that the country has lost in potential revenue (tax collection), failed our fellow country man by not developing the mine and creating jobs as well as potential loss of income for Mukope. This is over and above the fact that a product need to be sold to the market and the fact that very very few role players in the lime sphere exist which are 100% BEE

### ii. 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, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).

## iii. Description of aspects to be assessed by specialists

- Air Quality and noise
- Soil
- Ecology
- Surface Water & Ground Water
- Site of Archeological and Heritage significance
- Geology

## iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

This section describes the nature and extent of the investigations required in the EIA phase. In particular it describes the scope of work for the specialist investigations.

This will be included in:

- Air Quality and noise
- Soil
- Ecology
- Surface Water & Ground Water
- Site of Archeological and Heritage significance
- Geology

## v. The proposed method of assessing duration significance

Please refer to section vi

## vi. The stages at which the competent authority will be consulted

The authority will be consulted from the very beginning as their input is critical and equally important. The draft and final EIA/EMP reports will be submitted to all identified commenting authorities and the

DMR for review. A site visit and meeting shall be held, if requested.

## vii. 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).**

IAPs on the project database will be provided with information in the form of summary documents and will be notified when the EIA/EMP report are available for public review via electronic mail, post and bulk SMS. IAPs will similarly be invited to attend a public feedback meeting during the EIA phase, if required.

*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).

The stakeholder engagement process in the EIA Phase will include the following:

- Public and/or stakeholder meeting/s to give feedback on the findings of the EIA (if required);
- Collation of issues and concerns into a report for submission to the commenting authorities and
- DMR;
- Circulation of the EIA/EMP report (draft and final if there are material changes made to the draft report) for public and authority review and collation of comments;
- Notification of IAPs on the database on the relevant DMR decisions.

### *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).

The following information will be included in the EIA and EMP reports which will be made available for

public review:

Detailed description of the proposed project.

- A site layout.
- Details of the list of activities to be authorised in terms of NEMA and NEM:WA.
- Scale and extent of activities to be authorised in terms of NEMA and NEM:WA.
- The duration of the activity.
- An assessment of the environmental and socio-economic impacts identified during the environmental assessment process, through input from IAPs, regulatory authorities and specialists.
- Detailed management measures to reduce and control environmental and socio-economic impact.
- Copies of the specialist reports undertaken for the proposed project.
- During the EIA Phase a summary of the findings of the EIA will be provided
- In addition, the EIA/EMP report will be subjected to public review. Once the DMR has issued decisions on the applications, IAPs on the project database will be informed accordingly.

### *viii. Description of the tasks that will be undertaken during the environmental impact assessment process*

EAP to manage specialist activities and receive inputs for EIA. Assess environmental impacts. Compile draft EIA/EMP report Submit draft EIA report to IAPs and authorities. Arrange meetings and Consultations Address public comment and finalise EIA/EMP

report Final EIA report to DMR (106 days from acceptance of scoping). EAP to provide guidance regarding the appeal process as and when required.

## (ix) 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.

## l) 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 alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

To be discussed after Public Participation

*2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.* **(**Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(*i*)(vi) and (vii) of that Act, attach the investigation report as

A heritage study will be conducted to identify potential impacts on heritage resources. The results of this study will be provided in the EIA/EMP.

**Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

## m) 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)**.

None

## UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

**I _____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.**