

# FINAL BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN IN THE APPLICATION FOR A MINING PERMIT

## **Client:**

Con-Ellen (Pty) Ltd  
18 Janfiskaal Street  
Wrenchville  
8460

P.O.Box 107  
Gatalwatlou  
8625

Cell: 071 448 3476

[tmgmining@gmail.com](mailto:tmgmining@gmail.com)

**NC 30/5/1/3/2/10544MP.**

DATE: Novemver 2016

## **Prepared by:**

Ndi Geological Consulting Services-Sole Proprietary  
N Mofokeng  
P O Box 10489  
Beaconsfield  
Kimberley  
8315

Cell: 082 760 8420  
Tel: 053 842 0687  
Fax: 086 538 1069  
[atshidzaho@gmail.com](mailto:atshidzaho@gmail.com)





## Mineral Resources

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

**FINAL**

# **BASIC ASSESSMENT REPORT And ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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

**NAME OF APPLICANT: Con-Ellen (Pty) Ltd**

**TEL NO: 071 448 3476**

**PHYSICAL ADDRESS: Con-Ellen (Pty) Ltd  
18 Janfiskaal Street  
Wrenchville  
8460**

**POSTAL ADDRESS: P.O.Box 107  
Gatalwatlou  
8625**

**FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/3/2/10544MP**

## 1. IMPORTANT NOTICE

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

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

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

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

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

## 2. Objective of the basic assessment process

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

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

## **ABBREVIATIONS**

BAR : Basic Assessment Report

BID : Background Information Document

DENC: Department of Environment and Nature Conservation

DMR : Department of Mineral Resources

DWS : Department of Water and Sanitation

EA : Environmental Authorisation

EAP : Environmental Assessment Practitioner

EIA : Environmental Impact Assessment

EIMS : Environmental Impact Management Services

EMPR : Environmental Management Programme

EO: Environmental officer

GIS : Geographic Information System

I&APs : Interest and Affected Party(s)

MPRDA: Mineral and Petroleum Resources Development Act

NEMA : National Environmental Management Act

NEMWA: National Environmental Management Waste Act

NWA : National Water Act

PPP : Public Participation Process

**PART A**  
**SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT**

3. Contact Person and correspondence address

**a. Details of**

**i. Details of the EAP**

Name of the Practitioner: N Mofokeng

Tel No.: 0538420687

Fax No.: 086 538 1069

E-mail address: atshidzaho@gmail.com

**ii. Expertise of the EAP.**

**1. The qualifications of the EAP**

(with evidence).

University of Venda

BSc (Hons) Earth Sciences in Mining and Environmental Geology

**2. Summary of the EAP's past experience.**

(In carrying out the Environmental Impact Assessment Procedure)

Provide geological information for mining • Site visit for inspection in the mine • Mining Work Programme • Financial and technical ability • Environmental management Plan/Programme • Scoping Report • Social and Labour Plan • Prospecting work programme • Report on Results of Consultation • Section 11 and 102 Application • Closure application • Annual Reporting-Performance Assessment Report • Environmental Impact Assessment Regulation • Basic Assessment Report • Public Participation Process (consultation) • Environmental Authorisation

**b. Location of the overall Activity.**

|   |   |
|---|---|
| <b>Farm Name:</b>   | A certain piece of Farm Kangkuru 115  |
| <b>Application area (Ha)</b>                                | 5 hectares  |
| <b>Magisterial district:</b>                                | Kuruman District  |
| <b>Distance and direction from nearest town</b>             | The proposed study area is situated approximately 45 kilometers north east of Kuruman, 100 kilometers southwest of Vryburg CBD. |
| <b>21 digit Surveyor General Code for each farm portion</b> | C04100000000011500002   |

C. Locality map (show nearest town, scale not smaller than 1:250000).

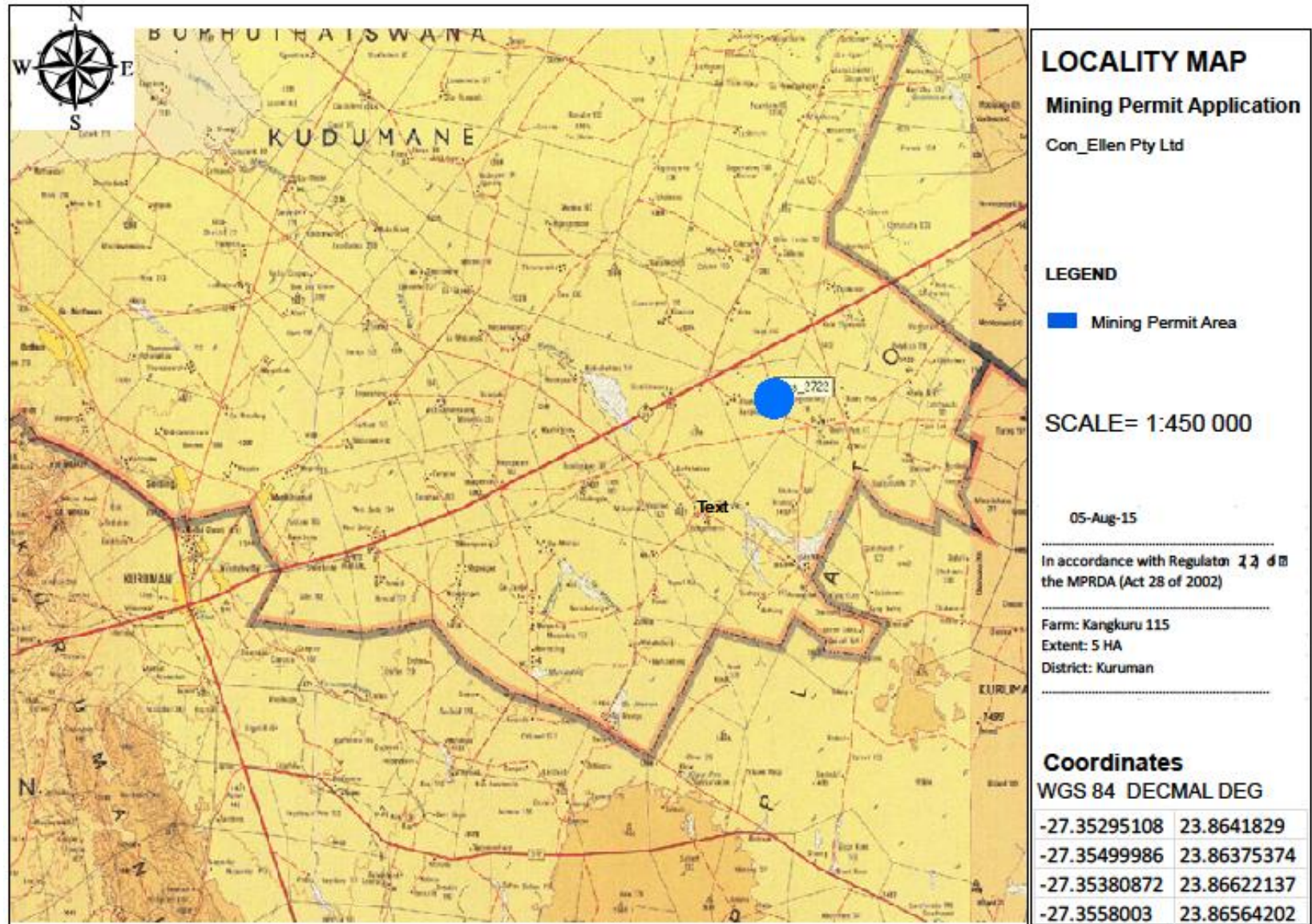


Figure 1: Location map of the proposed Mining Permit area.



**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.

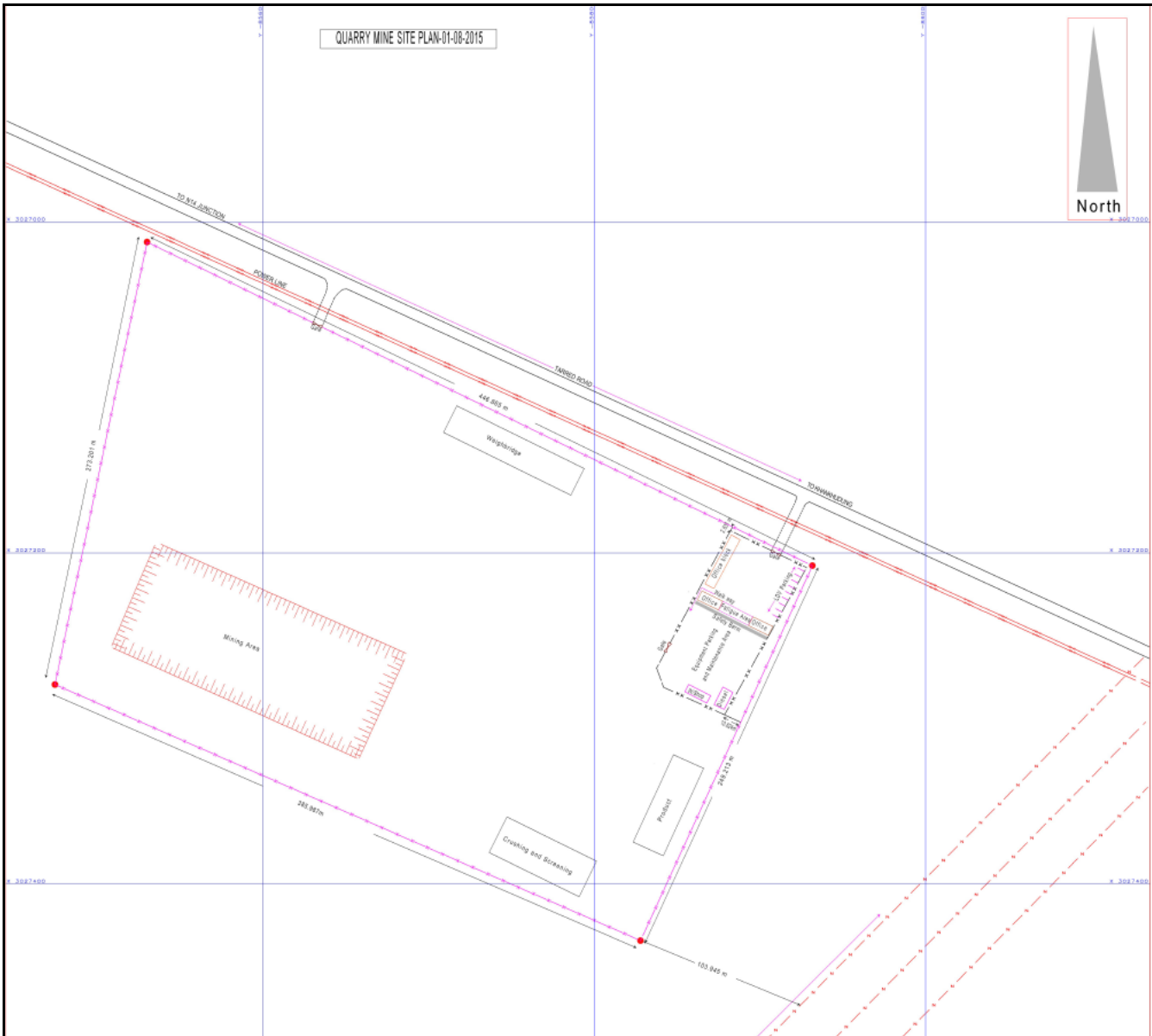
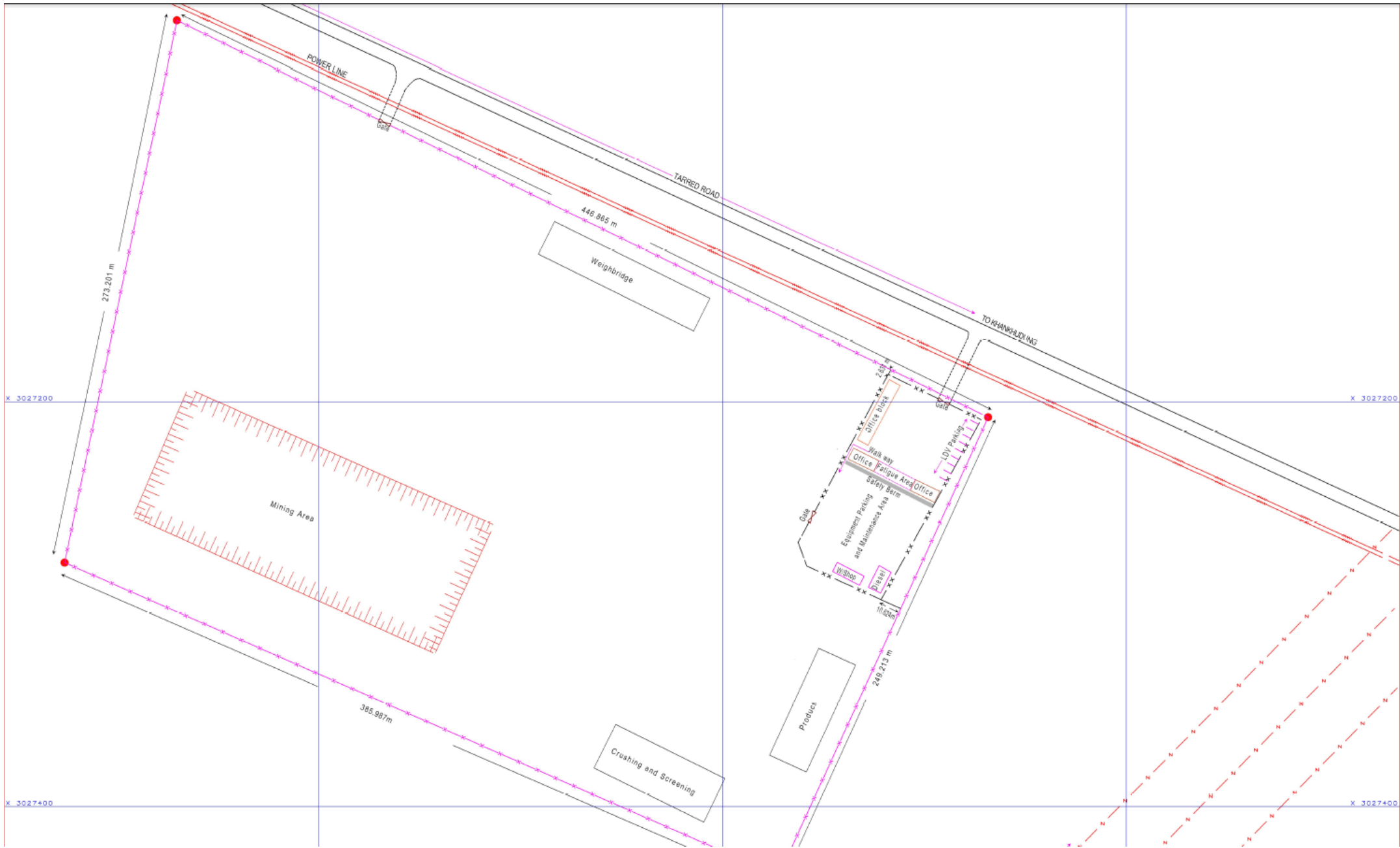


Figure 2: Layout plan



(i) Listed and specified activities

| <b>NAME OF ACTIVITY</b><br><br>(E.g. For prospecting - drill site, site camp, ablution facility accommodation, equipment storage, sample storage, site office access route etc...etc...etc<br>E.g. for Prospecting,- excavations, blasting, stockpiles, discards or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, store workshops, processing plant, storm water control, berms, road pipelines, power lines, conveyors, etc...etc...etc.) | <b>Aerial extent of the Activity Ha or m<sup>2</sup></b> | <b>LISTED ACTIVITY</b><br><br>(Mark with an <b>X</b> where applicable or affected). | <b>APPLICABLE LISTING NOTICE</b><br>(GNR 983 GNR 984 or GNR 895) |
|---|--|---|--|
| Mining and associated activities  | 5 ha   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Excavations (100m x 100m at any given time)   | 1ha  | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Fence   | 400 m  | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Temporary dump area (Product)   | 0.01ha   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Temporary storage of recovered dolomite   | 0.04ha   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Mobile Office   | 0.0025 ha  | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Ablution Facility   | 0.0025 ha  | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Construction of temporal access roads   | 400m <sup>2</sup>  | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Weigh bridge  | 64m <sup>2</sup>   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| LDV Parking   | 20m <sup>2</sup>   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Crushing and Screening  | 25m <sup>2</sup>   | x   | GNR 983-Listing Notice 1 Activity No.21                          |
| Maintenance area  | 25m <sup>2</sup>   | x   | GNR 983-Listing Notice 1 Activity No.21                          |

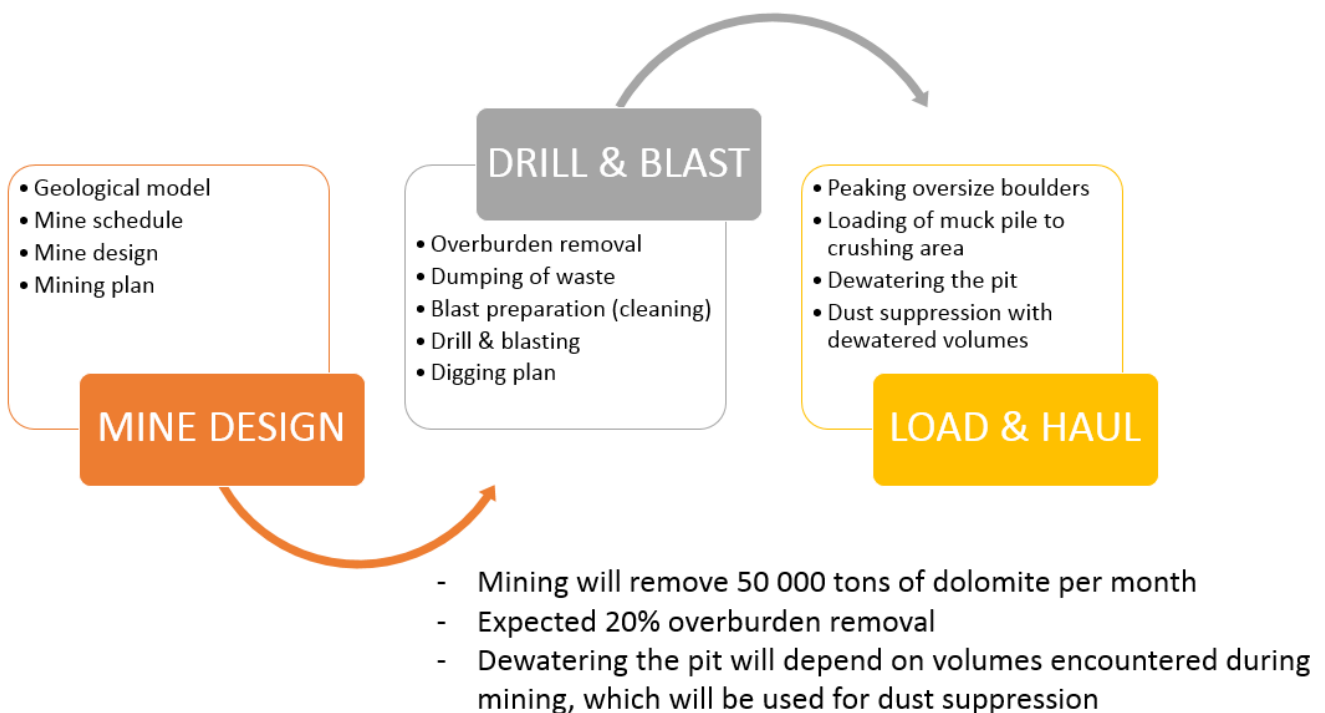
(ii) **Description of the activities to be undertaken** (Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

The entire mining at a certain piece of Farm Kangkuru 115 will be conducted in an environmentally friendly manner.

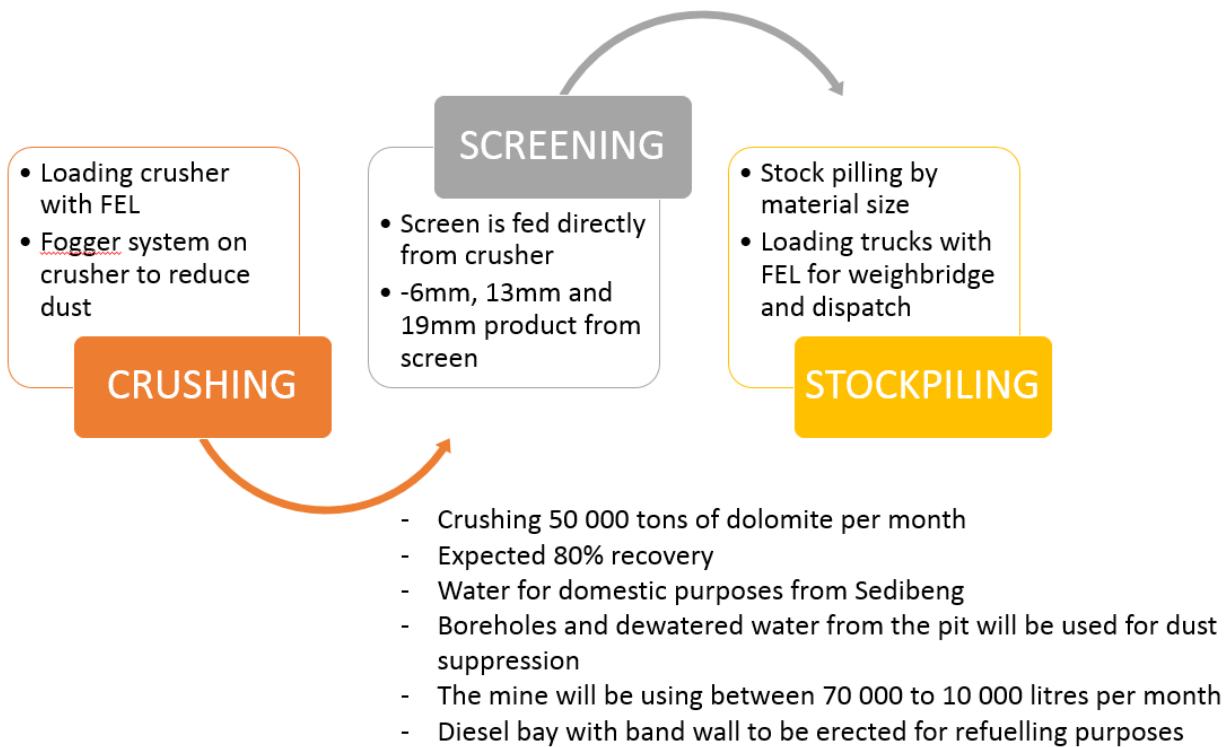
**The operation will consist of the following activities:**

Processing of Dolomite is required by means of Crushing and Screening. The purpose of mining activities will consist of mining of Dolomite which covers about 90% of the proposed mining area. However, area of 100m x 100m to a depth of 5m from the surface area will be opened and rehabilitated at a time before moving or opening the other site. The estimated volume of the total Dolomite that is to be mined is 250 000 m<sup>3</sup>. Overburden will be stripped and stockpiled on a temporary storage area. Stored overburden will be used for the sloping of opened area to a slope angle of 18° during rehabilitation. The product (Dolomite stockpile) will be removed and stored at a temporarily stockpile area where it will be hauled off site to market area.

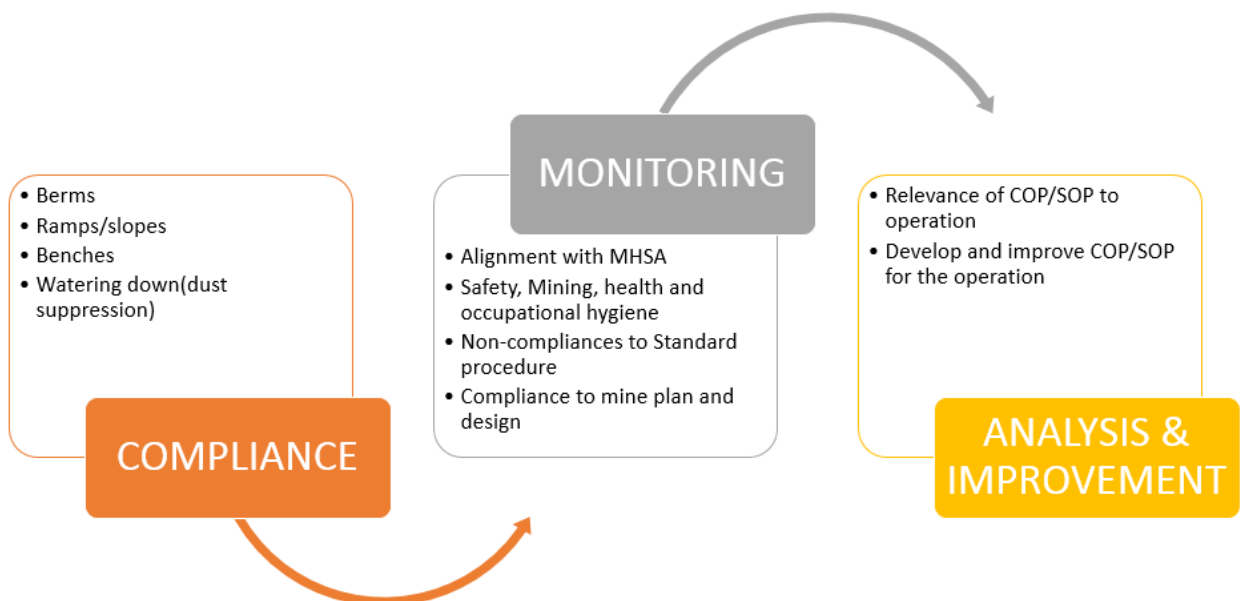
## MINING PROCESS



# CRUSH AND SCREEN PROCESS



# PIT DEVELOPMENT



## **The main mining activities will be conducted according to following procedures:**

### **Site Establishment**

Mining area will be demarcated by means of pegs or fence. The site will be demarcated for the following activities:

### **Fencing**

A fence of approximately 400m will be erected around the excavation site. Only excavation site will be fenced and when the excavated site is completely mined out the fence will be relocated and utilised to the next area to be opened.

### **Overburden removal and storage**

The process of mining Dolomite will consist of the stripping of the top layer which is unwanted waste/ overburden. All the stripped overburden will be used for the rehabilitation process of the mined out excavations.

### **Access Roads**

Existing access roads will be utilised as far as practicable in order to access the mining area. Small tracks measuring approximately 400m may be constructed as an alternative if there is no other access track to the loading area. Constructed tracks will be ripped to the depth of 300mm after use in order to allow smooth vegetation restoration.

### **Temporary mobile office**

Mobile containers will be used for site offices. No concrete or cement structure will be erected as a form of office or ablution blocks.

### **Ablution Facilities**

There will be two mobile chemical toilet measuring 2mx2m to the height of 3m provided on sites. The toilets will be serviced and emptied by qualified contractor on regular basis. They will also be monitored at all times for hygiene purposes.

### **Accommodation**

No accommodation would be necessary for employees on site. Permanent and temporary employees will have to seek their own accommodation on nearby towns or at the adjacent areas.

### **Hydrocarbons Storage Site**

No hazardous goods will be stored on site. All hazardous goods such as Diesel, grease, engine oil will be delivered to site when in need. Oil spill kits such as petrozorb will always be available on site to respond to accidental hydrocarbon spillages on site.

### **Temporal storage of recovered Dolomite**

An area of 10mx10m will be cleared for the temporary storage of recovered Dolomite from mining area.

### **Water**

Water will be required for mining purposes and human consumption and other related issues. Surface water will be protected by adhering to the National water act no 36 of 1998 section 19 (1) (a) (b). Water borehole will be drilled and water will be pumped from the drilled borehole and to be stored in the small tank measuring 1,5mx1.5 to the height of 2m. The depth of the borehole is unknown and will be determine during drilling time. The permit holder will get all water use authorisation from the Department of Water and Sanitation.

### **Equipment to be used:**

**The equipment to be used will involve the following:**

- Dozer
- Excavator
- Front end Loader
- Dumper trucks
- Light driving Vehicle

Please note that it is anticipated that the front end loader alone might be used for striping, dozing, stockpiling and loading. This will limit the number of equipment on site.

### **Rehabilitation of the mined out areas**

Rehabilitation will be done concurrently to the mining activities and this will involve

- Profiling of the excavation to an acceptable angle of repose
- Slope angle will be less than 18°
- Ripping of the excavated area to allow regrowth of plants
- Ripping of the compacted roads area
- Seeding of the area will be done by using indigenous vegetation seeds.

Rehabilitation will be concurrent with the mining operation. Waste rock/Top soil will be used as backfill material for the open pit and concurrent rehabilitation will begin on completion of each of the three pits, where topsoil will be placed over the Waste rock/Top soil and vegetation will be re-established.

The slopes of the Waste rock/Top soil dumps would have been contoured, landscaped and vegetated during the operational pville of the mine to allow any problematic areas to be rectified during the life of the mine. This element of the closure and rehabilitation of the mine would be done in consultation with key stakeholders (i.e. DAFF, NWPTB, John Taolo Gaetsewe [Kgalagadi] District Municipality and the communities) thereby ensuring that the rehabilitated areas are fit for communal grazing or wilderness use.

### e. Policy and Legislative Context

| <b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b><br>(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) | <b>REFERENCE WHERE APPLIED</b>   | <b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b><br>(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for) |
|---|--|--|
| <b>National Environmental Management Act 107 of 1998</b>  | Basic Assessment Report and EMPr   | An environmental authorisation has been lodged with DMR and the application has been accepted.   |
| <b>Mineral and Petroleum Resource Development Act 28 of 2002</b>  | Application for Mining Permit in terms of section 27 of the MPRDA 28 of 2002   | A Mining application has been lodged with DMR and the application has been accepted.   |
| <b>National Heritage Resource Act</b>   | The mining activity might trigger the requirements under section 38 of the NHRA, however the activities are not yet known. | The heritage impact assessment has been conducted and a report has been attached as appendix   |
| <b>National water act 36 of 1998</b>  | Application of water use   | Application of water use will be lodged with DWA.  |



**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).

Mining permit in respect of Dolomite will provide approximately **15 job** opportunities for the local community. Exact number of employees could only be determined when the mine is fully operational. This application for the mining permit is significant specifically for the surrounding communities suffering from unemployment. Mine will hire employees on the following field operators/drivers for earth moving machine, cleaners, security guard and administration officer. Hired employees will originate from the local community. Mining activities will bring revenue into the surrounding businesses and the community itself.

It is important to do mining activities in respect of the Dolomite since the mining activities will be able to provide employment to some of the surrounding people or communities. Dolomite is the most common resource that is found in the surrounding area and farms. Expansion of the mining area will highly be dependent of the results obtained from the mining activities.

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

**Preferred site:** The applicant has applied for a mining permit for 4.95 ha and is intending on mining the entire proposed areas in a sustainable manner. However, if heritage is identified such area will be reported to the South African heritage resource agency and the identified area will be fenced off and it will be regarded as a no go area. Dolomite is one of the most common mineral resources on the surrounding area and farms. All machines will be taken out of site when they are not in use or during the night. Alternative site for the parking of machines will be on site.

**Technology alternative:** Use of different types of Earth moving vehicles such as Dozer, Frond End Loader and Dumper trucks. Dolomite will be stripped, screened, crushed, stockpiled and loaded to the delivery trucks. In terms of machineries to be used alternative machines would be an excavator.

## **h. Full description of the process followed to reach the proposed preferred alternatives within the site.**

### **i. Details of the development footprint 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;
- (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.

#### **a. The property on which or location where it is proposed to undertake the activity;**

The applicant has applied in terms of MPRDA for a mining permit in order to do mining activities for Dolomite on the certain piece of Farm Kangkuru 115.

The proposed mining area is approximately 5 ha in extent. The planned mining activities will take place within the 5ha by means of stripping, screening, crushing, stockpiling and loading of recovery Dolomite. The proposed mining activities will only be located within the applied mining area. The primary objective of the mining activities is to access the economic potential of Certain piece of Farm Kangkuru 115 in terms of Dolomite.

Like all mining, work programme must be regarded as dynamic and results driven. The outcome of the mining cannot be predicted or predetermined.

#### **b. The type of activity to be undertaken;**

Mining of Dolomite activities will only take place within the demarcated area and no alternatives site is considered with regard to the type of activity to be undertaken.

#### **c. The design or layout of the activity;**

All of the infrastructures that are to be used during mining period would be mobile, that means the designed layout plan may change time to time as the infrastructures are

mobile. However, this will only affect areas where the mining activities will be conducted. No permanent structures or buildings will be erected within the mining area. Accommodation will not be provided within the 5ha and workers will be expected to provide their own accommodation possibly within the nearest village. Small track may be formed within the proposed mining area in order to access the footprint of the mining area however, their exact extent or footprint of the small tracks is unknown since existing access roads will be utilised.

**d. The technology to be used in the activity;**

Earth moving vehicles such Excavator, Front end loader and Dumper truck would be utilised during mining period. Possible existing roads and tracks will be used to access the mining area. Mining area will be regularly cleaned by removing all hydrocarbon spillage. Lubricating fluids and fuel deriving from the mining equipment will be bagged and disposed of at an approved site. Mined out areas will be properly profiled. The technology to be used cannot be replaced by any other methods since this is the only way to conduct Dolomite mining.

**e. The operational aspects of the activity;**

The applicant will make sure that before any mining activities could commence, the employees will be trained or work shopped with regards to the mining activities including their phases. After the workshop of the employees, the employees will be able to identify, avoid, manage and minimise environmental impacts. The Basic Assessment Report and Environmental Management Plan will be provided to the contractors or site manager and will always be available on site. The site manager will make sure that concurrent rehabilitation is taking place in order to comply with the contents and conditions of the environmental authorisation and the environmental management plan. There are no alternatives on the operation aspects of the activities since only the planned activities will be undertaken.

**f. The option of not implementing the activity.**

The option of not implementing the mining activities is not considered as there are no other alternatives that were identified to conduct the proposed mining activities. All the activities will be implemented to the proposed area according to the environmental

authorisation, Basic assessment Report and the environmental management plan. Proposed mining activities will have low significant impacts only the impacts are well managed and or mitigated.

## 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.


**Definition of Public participation:** *Public participation is defined as a process that leads to a joint effort by stakeholders, technical specialists, the authorities and the proponent to work together to produce better decisions than if they had acted independently. This is a two-way communication and collaborative problem solving with the goal of achieving better and more acceptable decisions.*

Interested and affected parties will be notified using any relevant guidelines applicable to public participation process as contemplated in section 24J of the Act. Notification with relate to this mining permit application was done after the acceptance of the Mining Permit and environmental authorisation application. All interested and affected parties will be consulted in a form of the following:

### a) Placing an advertisement in one local and regional newspapers.


|                         |                 |
|-------------------------|-----------------|
| <b>Publication name</b> | DFA             |
| <b>Date published</b>   | 12 October 2016 |
| <b>Language</b>         | English         |

|                         |                 |
|-------------------------|-----------------|
| <b>Publication name</b> | Katu Gazzette   |
| <b>Date published</b>   | 15 October 2016 |
| <b>Language</b>         | English         |



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|  |   |  |
|--|---|--|
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 Denise: 079-167-4118  
 Rudolph: 079-166-8285  
 Mecca: 079-167-6797  
 Kim: 079-166-9074  
 Jeanette: 079-167-4149


\*Please note that agents contact numbers have changed.

**There's WARMTH**



711 Public Notices

**PUBLIC NOTICE**  
 Notice is hereby given for the Toyota Corolla Reg no CJR892NC standing at 92A George Street, Kimberley will be sold for the outstanding costs including storage if not collected with full payment by the owner within 14 (fourteen) days from first day of advertisement.



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**Classifieds**

**CONSULTATION FOR MINING PERMIT APPLICATIONS**

Notice is hereby given in terms of Section 27 of the Mineral and Petroleum Resources Development Act, 2002 as amended by Section 23 of the Act 49 of 2008 and Environmental Authorization in terms of National Environmental Management Act (Act No 25 of 2014) as amended;

**The Applicant:**  
**Con-Ellen (Pty) Ltd - NC 30/5/1/3/2/10544MP**

**Location:**  
 A certain piece of Farm Kangkuru 115. The proposed study area is situated approximately 45 kilometres north east of Kuruman, 100 kilometres southwest of Vryburg CBD.

**GNR 983 - Listing Notice 1 Activity No. 21**  
 The project objective is to set a stone crushing plant in the surrounding of the greater Khankhudung area. The plant will be able to produce crushed stones of various sizes that can be used in various construction and road projects.

**Target Mineral:** Mining Permit to extract dolomite stone.

- The preparation of the Public Participation and Basic Assessment Report (relevant environmental reports).
- The proposed consultation work will be undertaken by Ndi Geological Consulting Service, for and on behalf of the applicants.

Any interested and affected parties are invited to register as a stakeholder and lodge their comment or objection for the above proposed prospecting activities in terms of the acceptance before the **12th November 2016**.

Comments and objections can be forwarded to the consultant whose details appear below.

**NDI GEOLOGICAL CONSULTING SERVICE**  
 Facsimile: 086-583-0687  
 E-mail: atshidzaho@gmail.com  
 Tel: (053) 842-0687

ders se skoen te loop, asook dat ons dankbaar moet wees vir ons ouers en familie wat ons versorg.  
Nadat Ds. Hans Britz, leraar

gewys. Die Bye (Graad 2) en die Meerkat (Graad 3) het die beste boemelaarskooling gebou.

lange kamp word verskeie spesialisasies voltooi, waaronder die Anglo-Boere-oorlog,

en Sy skepping ken en persoonlike verryking vind plaas.

transport

Please forward your applications to: [jobs@elco.co.za](mailto:jobs@elco.co.za) or Fax: 086 558 7150



## DANIËLSKUIL

# 18 paartjies op een dag getroud

Jacqueline Jordaan (Gemeenskap Ontwikkeling Werker), in samewerking met die maatskaplike werker, Binnelandse Sake, die VGK Kerk en die Christen Gemeente in Danielskuil het in 2012 'n massa troue program begin, waar sy paartjies wat lank saamwoon, aanmoedig om in die huwelik te tree.

In 2012 het sewe paartjies in die huwelik getree, 10 paartjies in 2013, 15 paartjies in 2014, 20 paartjies in 2015, en in 2016 is 18 paartjies getroud.

Die plaaslike maatskaplike werkers doen eers 'n huweliksverreikingsprogram met die paartjies en Ds. Apostel Williams van Christen Gemeente Kerk seën die huwelik en Binnelandse Sake bevestig die huwelik. Die jaar was die troue by die AGS Die Woord kerk.

Jacqueline kan met trots sê dat die lewensomstandighede van die paartjies heelwat verander het. Mans en vroue verstaan albei hul onderskeie rolle in die huishouding, hulle respekteer mekaar en hulle huise het

meer orde begin kry. Hierdie positiewe verandering motiveer haar om aan te gaan met die program. Baie van die paartjies het teruggekom om hul waardering teenoor haar uit te spreek.

"Ek geniet dit om ander te help en help graag waar ek kan. Vir baie mense is dit dalk tyd mors, maar dit verskaf vir my groot plesier as ek aandeel daarin het wanneer iemand se droom waar gemaak word," sluit Jacqueline af.

## PUBLIC NOTICE

### CONSULTATION FORMINING PERMIT APPLICATIONS

Notice is hereby given in terms of Section 27 of the Mineral and Petroleum Resources Development Act, 2002 as amended by Section 23 of the Act 49 of 2008 and Environmental Authorization in terms of National Environmental Management Act (Act No 25 of 2014) as amended;

#### The Applicant:

Con-Ellen (Pty) Ltd – NC 30/5/1/3/2/10544MP

#### Location:

A certain piece of Farm Kangkuru 115. The proposed study area is situated approximately 45 kilometres north east of Kuruman, 100 kilometres southwest of Vryburg CBD.

### GNR 983-Listing Notice 1 Activity No.21

The project objective is to set a stone crushing plant in the surrounding of the greater Khankhudung area. The plant will be able to produce crushed stones of various sizes that can be used in various construction and road projects.

#### Target Mineral: Mining Permit to extract dolomite stone.

- The preparation of the Public Participation and Basic Assessment Report (relevant environmental reports).
- The proposed consultation work will be undertaken by Ndi Geological Consulting Service, for and on behalf of the applicants.

Any interested and affected parties are invited to register as a stakeholder and lodge their comment or objection for the above proposed prospecting activities in terms of the acceptance before the 15th November 2016.

Comments and objections can be forwarded to the consultant whose details appear below.

#### NDI GEOLOGICAL CONSULTING SERVICE

Facsimile: 086-583 0687 • Tel: 053 842 0687

E-mail: [atshidzaho@gmail.com](mailto:atshidzaho@gmail.com)



b) Fixing a notice board at a place conspicuous to and accessible by the public at the boundary or on the fence of the site where the activity to which the application or proposed application relates to

c) Site notices

***Below: Site notice at***



***Below: Site notice on site***



- d) Undertaken and any alternative site,
- e) Written notice was issued to the tribal assembly at the Khankhudung area as the legal occupiers of the land and the municipality which has jurisdiction over the area. Notices will also be issued to any organs of state having jurisdiction in respect of any aspect of the activity; and any other party as required by the competent authority.
- f) The tribal assembly at the Khankhudung village as the affected parties were consulted in a form of one on one meeting. Public participation meeting was held on the 21 October 2016. All information that reasonably has or may have the potential to influence any decision with regard to this proposed application unless access to that information is protected by law will be sent or presented to the potential / registered parties so that they can have detailed information. I need the pictures showing public participation meeting.

**Venue** : Khankhudung Village

**Date of the meeting:** 21 October 2016

**Time** : 10h00



All potential registered interested and affected parties were provided with a reasonable opportunity to comment on the proposed mining permit application. All relevant information provided by the registered potential interested and affected parties were recorded and will be submitted to the DMR.



Any reasonable notification method requested by DMR were conducted.

### iii Summary of issues raised by I & Ap's

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

| Interested and affected parties.<br>List the names of person consulted in this column, and mark with an X where those who must be consulted were in fact consulted |   | Date comments received | Issues raised  | EAPs response to issues as mandated by the applicant.  | Section and paragraphs reference in this report where the issues and or response were incorporated |
|--|---|------------------------|--|--|--|
| <b>Interested parties</b>  |   |                        |  |  |  |
| Mr Mdu   | x | 21 October 2016        | Can the community use Dolomite for building and for making bricks?         | Yes the Dolomite can be used to for building Foundations, Driveways, Landscaping, and Roads        | Section 4 on the translated public participation document  |
| Mr Tshepo  | x | 21 October 2016        | Is the mine going to affect grazing?                                       | No the mining area will be fenced.   | Section 4 on the translated public participation document  |
| Mrs Mohapi   | x | 21 October 2016        | Is the mined product going to be sold only to bulk or also small portions? | Dolomite will be sold to both big bulks and small portions   | Section 4 on the translated public participation document  |
| Mr Boza  | x | 21 October 2016        | What kind of mineral will be mined?  | Dolomite is the only targeted mineral and mining permit only allows Co_Ellen to mine only Dolomite |  |
| <b>Municipality</b>  |   | 11 October 2016        | No comment   | noted  | See attached   |

|  |  |                      |   |       |  |
|--|--|----------------------|---|-------|--|
|  |  |                      |   |       | addendum E                             |
| <b>Organs of state</b>                     |  |                      |   |       |  |
| <b>Department of land affairs</b>          |  | 31 September<br>2016 |   | Noted | See email communication.<br>Addendum D |
| <b>Department of Environmental affairs</b> |  | 27 October<br>2016   | Draft BAR has been assigned to the responsible officer. | Noted | See attached addendum F                |

**iv The Environmental attributes associated with the alternatives.** (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects).

## 1. Baseline Environment

- a) **Type of environment affected by the proposed activity.**  
(its current geographical, physical, biological, socio- economic, and cultural character).

### **TOPOGRAPHY & DRAINAGE**

The proposed study area is situated approximately 45 kilometers north east of Kuruman and 100 kilometres southwest of Vryburg CBD. The proposed (Dolomite rock) Mining Permit application covers approximately 5 hectors of the farm Kangkuru 115. The site is located on the following global positioning system co-ordinates (GPS S27°.21', 10.08" & E 23°.51'.54.02"). The area is dominated by flat section of land with series of exposed dolomite outcrops. A powerline transverse north east of the proposed area.

#### Main Impacts

- Change to natural topography

#### Main Mitigation and Management Measures

- Keep the construction footprint as small as possible;
- Keep as much original land cover as possible; and
- Design mine infrastructure to create the least impact on the topography as possible.

### **SOIL AND GEOLOGY**

The main part of the proposed mining area is characterized by Dolomitey, red-yellow apedal, freely drained soils with thicknesses of more than 300 mm and predominantly flat.

This bushveld is encountered on different types of soils, such as calcareous tufa, dark brown to red sands and acid gravels, all underlain by dolomite. Fine and coarse grained dolomite, chert and dolomitic limestone with prominent

interbedded chert. Generally, the geology and soils is characterized by dolomite, carbonates and chert of the vaalian super group and the Kalahari sediments which form flat, aeolian sands underlain by rocks. This type of geology has influenced the presence of sparsely distributed tree layers dominated by *Acacia eroloba*, *Acacia Karroo*.

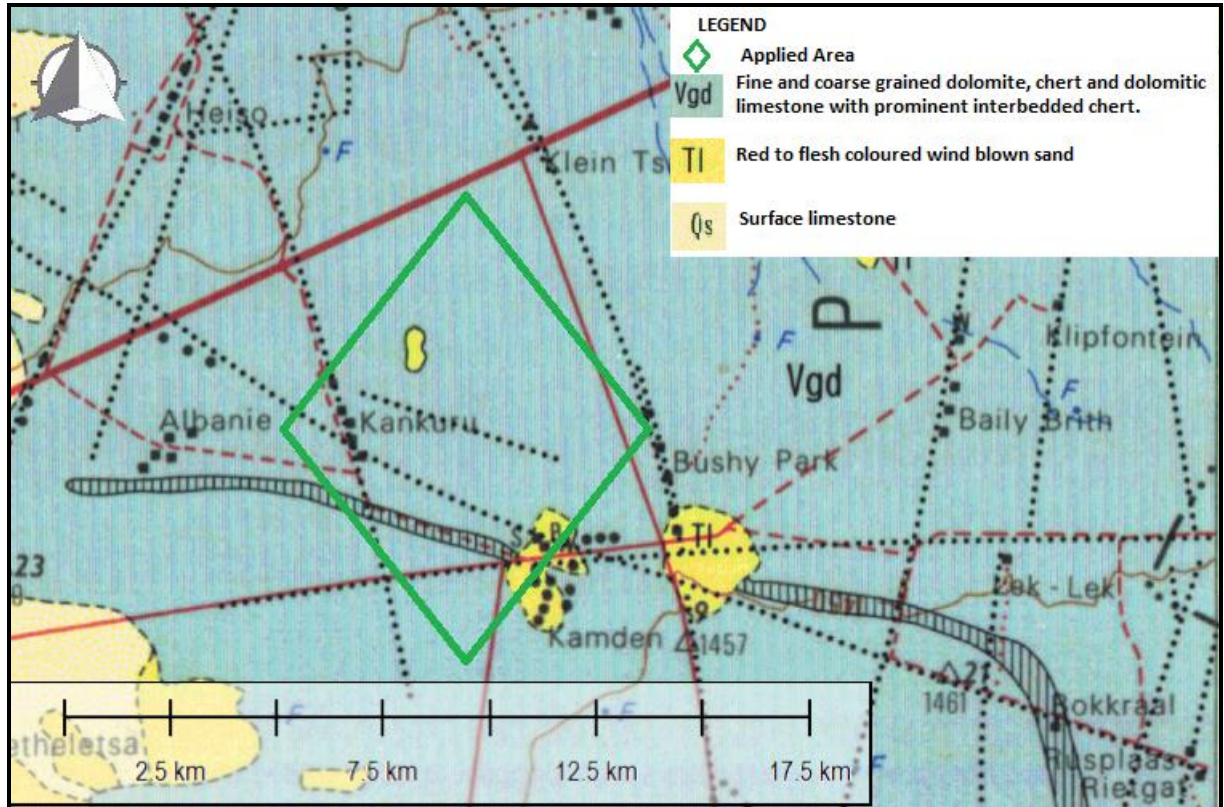


Figure 3: Geological map of the proposed Mining Permit area.

## CLIMATE

The average annual rainfall is 300 mm, which falls in summer and early autumn. Temperatures vary between -9°C and 42°C, with an average of 18°C.

## **Vegetation**

The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the low-veld and Kalahari region of South Africa and is also the dominant vegetation in Botswana, Namibia and Zimbabwe. The whole surrounding of the applied area is also occupied by Savanna Biome.

The main vegetation type found within the borders of the Ga-Segonyana Municipal area is the Kalahari Plains Thorn Bushveld. On the western side of Joe Morolong the Shrubby Kalahari Dune Bushveld is found and on the south eastern side the Kalahari Plateau Bushveld.

Characterised by a fairly well-developed tree stratum with Camel Thorn *Acacia erioloba* and Shepherd's Tree *Boscia albitrunca* as the dominant trees, along with scattered individuals of Belly Thorn *Acacia luederitzii* and Silver Clusterleaf *Terminalia sericea*, which may be locally conspicuous. The shrub layer is moderately developed and individuals of Black Thorn *Acacia mellifera*, Weeping Candle Thorn *A. hebeclada*, Karee-thorn *Lycium hirsutum*, *Grewia flava* and *Acacia haematoxylon* dominate this layer. The grass cover depends on the amount of rainfall during the growing season. Grasses such as Lehmann's Lovegrass *Eragrostis lehmanniana*, Sour Bushmangrass *Schmidtia kalahariensis* and Silky Bushman grass *Stipagrostis uniplumis* are conspicuous.

It is important to note that this is a general broad scale vegetation pattern of Ga-Segonyana district. The types of vegetation that were identified on the application area are found to be *Acacia mellifera*, *Ziziphus mucronata*.



**Photo 1: showing vegetation cover within the application area**



The project area of interest is predominantly underlain by a dolomite formation and this has developed a lot of construction and farming issues for the community. A significant amount of outcrops and loose piles of rock naturally and some excavated out of the ground is available as low hanging fruit. The shrubs layer is generally dominated by *Acacia mellifera*, *Ziziphus mucronata*, *grewia flava*, *gymnosporia buxilifolia* *Diospyroslycioides* and *Lyceum luisutum* and grasslayers is variable in cover. The proposed development entails: Mining of Dolomite rocks for commercial market such as concrete aggregates for roads and houses constructions.

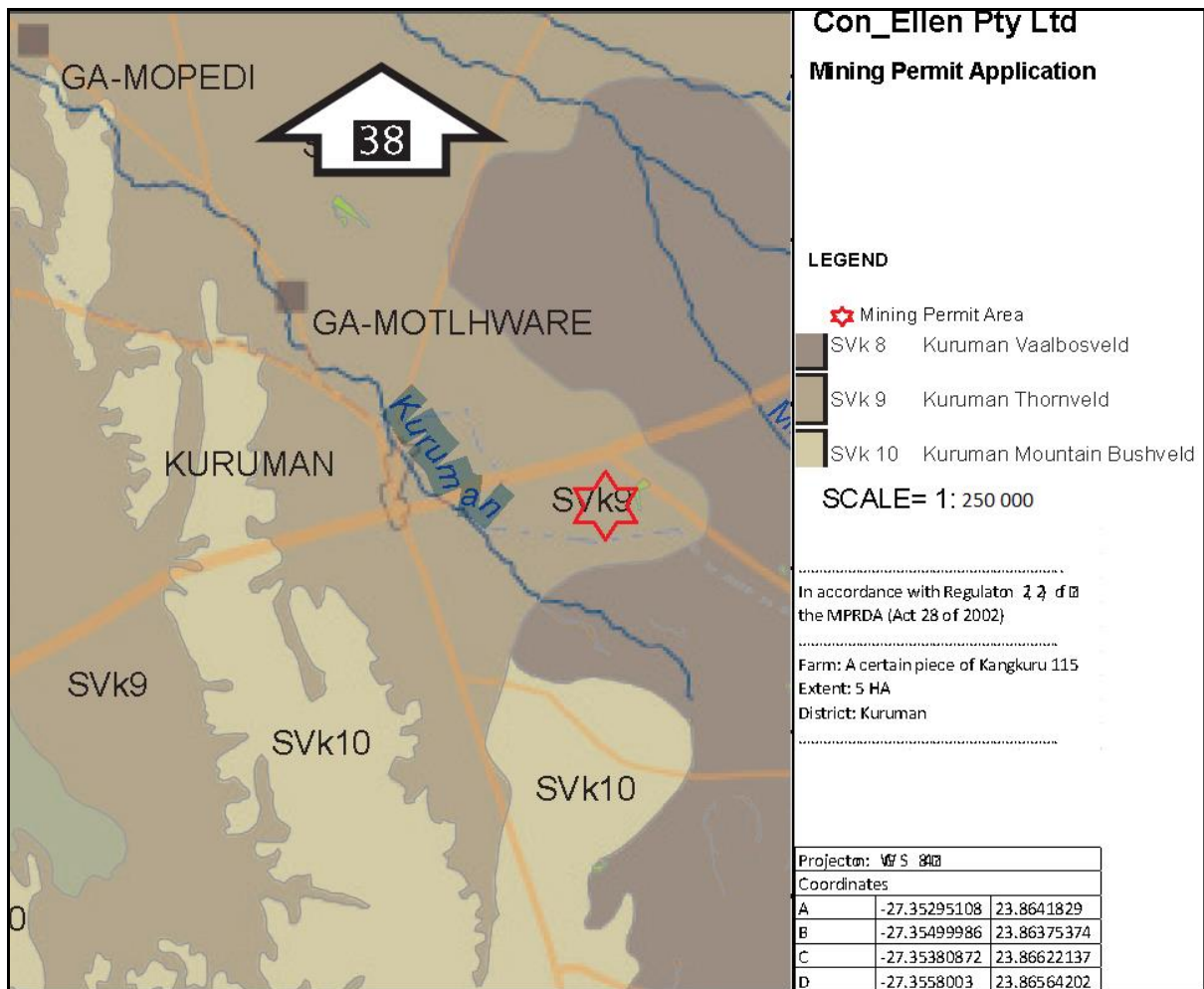


Figure 4: Vegetation map

### Fauna:

No fauna was identified within the application area during the site visit, however if they are roaming animals identified during mining activities they will be safely removed from site.

### SOCIO-ECONOMIC ENVIRONMENT

## **Demographic analysis**

Ga-Segonyana local municipality has the largest population size when compared to other local municipalities under John Taolo Gaetsewe district. The municipality represented more than 40 percent of the total population of John Taolo Gaetsewe in 2012, the population increased from 73 054 in 2002 to 91 395 in 2012 which was a 2.27 percent average growth rate.

The population of Ga-Segonyana was predominantly Africans, representing 87.03 percent of the total population while there were only 305 Asians living in the municipality in 2012. Females living in the municipality were 10 percent more than males and constituted 52.37 percent of the total population. On average, a number of 3.23 people lived in one household in 2012. Following a steady increase in population growth rate between 2002 and 2007, the population growth rate surged to 2.8 percent in 2008 and maintained the momentum to reach a maximum of 3.9 percent in 2012. The population grew on average by 2.27 percent for the period under study.

It is clear that the trend in the Ga-Segonyana municipal area is towards a growing population. This is largely attributable to the mining activities in the area. This movement of people is predominantly from the municipal jurisdiction area of the Joe Morolong municipality.

The growth in the number of households is in line with the population growth in the area. In this regard, the nature of the households accurately reflects the increased level of development: Female headed households have reduced from 51,7 – 42,7% of households, which implied improved social stability, formal dwellings have increased from 72,5 – 81%, which reflect better quality housing, and the percentage of households that owned their houses has increase by 4% to 65,7% (Ga-Segonyana IDP 2015).

### **b) Description of the current land uses.**

The application area is an open space with no activity on site. The project area of interest is predominantly underlain by a dolomite formation and this has developed a lot of construction and farming issues for the community. A significant amount of outcrops and loose piles of rock naturally and some excavated out of the ground is available as low hanging fruit.

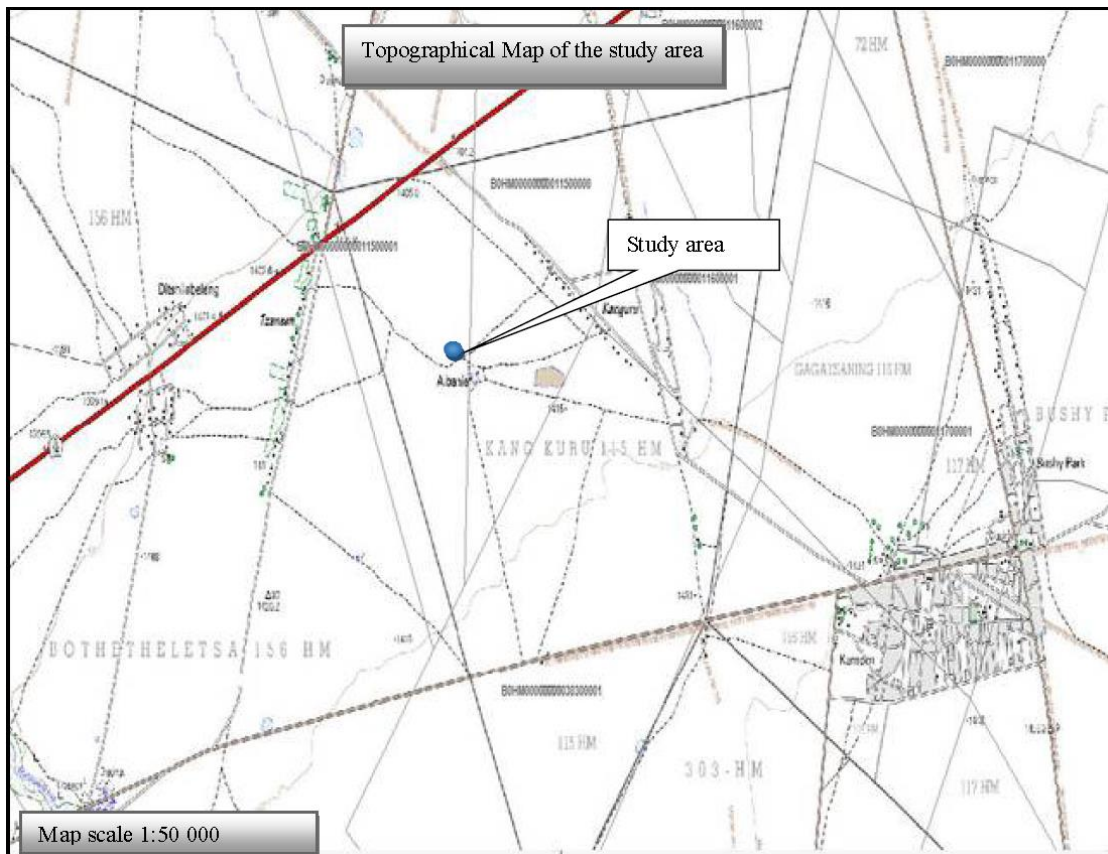


**c) Description of specific environmental features and infrastructure on the site.**

No built infrastructure was identified within the proposed mining permit area.

**d) Environmental and current land use map.**

(Show all environmental and current land use features)



**Figure 5: environmental and current land use features**

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

| Phase              | Activities  | Potential impacts                                      | Reversible                  | Irreplaceable damage | Can impact be avoided | Managed or mitigated |     |
|--------------------|---|--|-----------------------------|----------------------|-----------------------|----------------------|-----|
| Construction phase | -Site establishment                                   | -Vegetation loss                                       | Yes (rehabilitation)        | No                   | No                    | Yes                  |     |
|                    | -Vegetation clearance                                 | -Soil compaction                                       | Yes (ripping)               | No                   | No                    | Yes                  |     |
|                    | -Stripping of the top layer                           | -Soil erosion  | Yes (Creating of berms)     | No                   | Yes                   | Yes                  |     |
|                    | -Demarcation of the Mining area such as ablution area | -Dust  | Yes (dust suppression)      | No                   | No                    | Yes                  |     |
|                    |   | -Negative visual impact                                | Yes (rehabilitation)        | No                   | No                    | Yes                  |     |
|                    |   | -Loss of authentic values                              | Yes (rehabilitation)        | No                   | No                    | Yes                  |     |
|                    |   | -Moving of equipment and mobile infrastructure to site | -Topographical disturbances | Yes (rehabilitation) | No                    | No                   | Yes |
|                    |   | -Construction of access roads                          | Livestock theft             | No                   | No                    | Yes                  | Yes |

|                          |                               |                          |                              |    |     |     |
|--------------------------|-------------------------------|--------------------------|------------------------------|----|-----|-----|
| <b>Operational phase</b> | Mining and related activities | -Land degradation        | Yes (Through rehabilitation) | No | No  | Yes |
|                          |                               | -Loss of biodiversity    | Yes (Through rehabilitation) | No | No  | Yes |
|                          |                               | -Negative Visual impact  | Yes (Through rehabilitation) | No | No  | Yes |
|                          |                               | -Dust                    | Yes (dust suppression)       | No | No  | Yes |
|                          |                               | -Soil pollution          | Yes (Through rehabilitation) | No | Yes | Yes |
|                          |                               | -Water pollution         | Yes (Through rehabilitation) | No | Yes | Yes |
|                          |                               | -Soil erosion            | Yes (Creating of berms)      | No | Yes | Yes |
|                          |                               | -Noise pollution         | Yes (Silencers)              | No | No  | Yes |
|                          |                               | -Land use conflict       | Yes (Demarcation)            | No | Yes | Yes |
|                          |                               | -Loss of authentic value | Yes (Through rehabilitation) | No | No  | Yes |
|                          |                               | -Topography              | Yes (Through rehabilitation) | No | No  | Yes |
|                          |                               | -Waste generation        | Yes (Dust bins)              | No | Yes | Yes |

|                       |                         |   |                              |    |     |     |
|-----------------------|-------------------------|---|------------------------------|----|-----|-----|
|                       |                         | -Health risk to workers or general public | Yes (awareness)              | No | Yes | Yes |
|                       |                         | Socio-economic (positive impact)          | No                           | No | No  | N/A |
|                       |                         | Livestock theft                           | No                           | No | Yes | Yes |
|                       |                         | Veld fires                                | No                           | No | Yes | Yes |
|                       |                         | Heritage site disturbances                | No                           | No | Yes | Yes |
| Decommissioning phase | <b>Positive impacts</b> | Surface disturbance                       | Yes (Through rehabilitation) | No | Yes | Yes |
|                       |                         | Soil pollution                            | Yes (Through rehabilitation) | No | Yes | Yes |
|                       |                         | Vegetation loss                           | Yes (Through rehabilitation) | No | Yes | Yes |
|                       |                         | Loss of authentic value                   | Yes (Through rehabilitation) | No | Yes | Yes |
|                       |                         | Topography                                | Yes (Through rehabilitation) | No | Yes | Yes |

**Vi Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;** (Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

### **Criteria of assigning significance to potential impacts**

The assessment of the impacts has been conducted according to a synthesis of criteria required by the integrated environmental management procedure.

#### **Nature of impact**

This is an appraisal of the type of effect the activity would have on the affected environmental component. Its description should include what is being affected, and how. The impact may be positive or negative.

#### **Extent**

The physical and spatial size of the impact. This is classified as follows:

##### **Local**

The impacted area extends only as far as the activity, e.g. a footprint.

##### **Site**

The impact could affect the whole, or a measurable portion of the property.

##### **Regional**

The impact could affect the area including the neighbouring farms, transport routes and the adjoining towns.

##### **Cumulative**

The impact could have a cumulative effect with the surrounding land uses.

#### **Duration**

The lifetime of the impact which is measured in the context of the lifetime of the proposed phase (i.e. construction or operation)?

##### **Short term**

The impact will either disappear with mitigation or will be mitigated through natural process in a short time period.

##### **Medium term**

The impact will last up to the end of the Mining period, where after it will be entirely negated.

### **Long term**

The impact will continue or last for the entire operational life of the mine, but will be mitigated by direct human action or by natural processes thereafter.

### **Permanent**

Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

### **Intensity**

This describes how destructive, or benign, the impact is. Does it destroy the impacted environment, alter its functioning, or slightly alter it. These are rated as:

#### **Low**

This alters the affected environment in such a way that the natural processes or functions are not affected.

#### **Medium**

The affected environment is altered, but function and process continue, although in a modified way.

#### **High**

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases. This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

### **Probability**

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

#### **Improbable**

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

#### **Probable**

There is a possibility that the impact will occur to the extent that provisions must be made therefore.

#### **Highly probable**

It is most likely that the impacts will occur at some or other stage of the development.

#### **Definite**

The impact will take place regardless of any preventative plans, and mitigation measures or contingency plans will have to be implemented to contain the impact.

## **Determination of significance**

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

### **No significance**

The impact is not likely to be substantial and does not require any mitigatory action.

### **Low**

The impact is of little importance, but may require limited mitigation.

### **Medium**

The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

### **High**

The impact is of great importance. Failure to mitigate, with the objective to reduce the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

| Activities   | Potential Impacts           | Nature of Impact | Extent   | Duration    | Intensity | Probability     | Significance Rating | Description of The Mitigation Measure  | Significance After Mitigation (High, Medium, Low) |
|--|-----------------------------|------------------|----------|-------------|-----------|-----------------|---------------------|--|---|
| 1. Site establishment<br><br>-Vegetation clearance<br><br>-Striping of top layer | -Vegetation loss            | Negative         | Local    | Long term   | Medium    | Highly Probable | High                | Demarcate all working Areas with boundary fencing to restrict encroachment into surrounding veld. Existing tracks must be used as far as practicable.<br><br>Re-vegetation(seeding),<br>Avoid veld fires, rehabilitation | Medium  |
| -Demarcation of the mining area such as temporal office site, and ablution area  | -Soil compaction            | Negative         | Local    | Medium term | Medium    | Highly Probable | High                | Avoid construction of newly roads and use existing roads.<br>Ripping of compacted surfaces.  | Low   |
| -Moving of equipment and mobile infrastructure to site                           | -Dust                       | Negative         | Regional | Medium term | Medium    | Highly Probable | High                | Dust suppression measures will be done by means of spraying the area with water. This will be done only when there is a need.  | Low   |
| -Construction of access roads.   | -Negative visual impact     | Negative         | Regional | Long term   | Medium    | Highly Probable | High                | Concurrent rehabilitation  | Low   |
|  | -Loss of authentic values   | Negative         | Regional | long-term   | Medium    | Highly Probable | High                | Concurrent rehabilitation  | Medium  |
|  | -Soil erosion               | Negative         | Site     | Short term  | Medium    | Probable        | High                | Creating berms   | Low   |
|  | -Topographical disturbances | Negative         | Site     | Long term   | Medium    | Highly Probable | High                | Concurrent Rehabilitation  | Low   |
|  | Surface disturbance         | negative         | Site     | long-term   | Medium    | Highly Probable | High                | Rehabilitation of disturbed areas  | Low   |
| 2. Mining and related activities   | -Land degradation           | Negative         | Local    | Medium term | Medium    | Medium          | Medium              | Rehabilitation of disturbed areas  | Low   |
|  | -Loss of biodiversity       | Negative         | Site     | Long-term   | Medium    | Highly Probable | High                | Containment of operational footprint with boundary fencing.<br>Rehabilitation of disturbed areas   | medium  |
|  | -Negative Visual impact     | Negative         | Regional | Long-term   | Medium    | Highly Probable | High                | The area will be rehabilitated at an acceptable state meaning that no  | Low   |



|                          |          |          |             |        |                 |        |  |   |            |
|--------------------------|----------|----------|-------------|--------|-----------------|--------|--|---|------------|
|                          |          |          |             |        |                 |        |  | visual impact will be left on site.   |            |
| -Dust                    | Negative | Regional | Medium term | Medium | Highly Probable | High   |  | Reasonable and effective methods must be Implemented to reduce the liberation of dust into the air. Dust suppression measures such as water .   | <b>Low</b> |
| -Soil pollution          | Negative | local    | Short term  | Medium | Probable        | Medium |  | Using drip tray, taking precautions on the refuelling point. If any soil is contaminated during the life of the mining activities, it will be immediately scooped and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility or applicant for further treatment. Small spills will be treated on site using bio-sorb, bio-shock or oil cap. | <b>Low</b> |
| -Water pollution         | Negative | regional | Long-term   | Medium | Probable        | Medium |  | Avoid hydrocarbon accidental spillages.   | <b>low</b> |
| -Soil erosion            | Negative | Site     | Short-term  | Medium | Probable        | Medium |  | Creation of berm  | <b>low</b> |
| -Noise pollution         | Negative | regional | Medium term | Medium | Probable        | Medium |  | The applicant will comply with the occupational noise regulations of the Occupational Health and safety Act, Act 85 of 1993. Speed control of vehicles to be limited to 30km/h  | <b>low</b> |
| -Land use conflict       | Negative | Site     | Long-term   | Medium | Highly Probable | Low    |  | Rehabilitation and return the area to its original state,<br>Seeding of rehabilitated area if vegetation did not grow natural.  | <b>Low</b> |
| -Loss of authentic value | Negative | Regional | Long-term   | Medium | Highly Probable | Medium |  | Concurrent rehabilitation. Creation of buffer zone.   | <b>Low</b> |
| -Topography              | Negative | Site     | Medium term | Medium | Highly Probable | Medium |  | Concurrent rehabilitation.  | <b>Low</b> |

|   |   |          |            |             |        |                 |        |  |      |
|---|---|----------|------------|-------------|--------|-----------------|--------|--|------|
|   |   |          |            |             |        |                 |        |  |      |
|   | -Waste generation                         | Negative | Site       | Short term  | Medium | Highly Probable | Low    | Dedicated area for waste disposal and awareness.   | Low  |
|   | -Health risk to workers or general public | Negative | Regional   | Medium term | Medium | Probable        | Medium | Environmental Awareness  | Low  |
|   | Socio-economic (positive impact)          | positive | Cumulative | Long-term   | Medium | Definite        | High   | Creation of employment   | High |
|   | Impact on heritage                        | Negative | local      | Short-term  | Medium | Probable        | Low    | Heritage impact assessment has been conducted and no heritage aspects were identified.<br>Avoid impacting any areas so identified in Specialist report   | Low  |
| Final rehabilitation of the mining area,<br>Removal of equipment from site (positive impacts) | Noise                                     | Negative | Local      | Short-Term  | Medium | Probable        | Medium | Noise levels must comply with OHS regulations.<br>Noise generating activities should be restricted to normal working hours. Mine is noted to be remote from any settlement and human habitation<br>Vehicle exhaust systems should be in good state of maintenance with standard noise suppression equipment.<br>Personnel will wear PPE, specifically ear muffs to suppress noise levels when using machinery. | Low  |
|   | Soil compaction                           | Positive | Local      | Short Time  | Medium | Probable        | High   | Ripping of all compacted ground and also where equipment was standing.   | Low  |
|   | Soil erosion                              | Positive | Local      | Permanent   | Medium | Probable        | High   | Finalise rehabilitation of berms created.  | Low  |
|   | Dust                                      | Negative | Local      | Short-Term  | Medium | Probable        | High   | Dust will be negligible  | Low  |

|  |  |          |          |            |        |                 |        |   |            |
|--|--|----------|----------|------------|--------|-----------------|--------|---|------------|
|  | <b>Surface disturbance</b>             | Positive | Local    | Permanent  | Medium | Probable        | High   | All surface disturbed will be rehabilitated to its original state. All compacted ground will be ripped to a depth of 300mm. | <b>Low</b> |
|  | <b>Soil pollution</b>                  | Positive | Local    | Short Term | Medium | Probable        | High   | Every equipment that may cause pollution will be taken out of the site.   | <b>Low</b> |
|  | <b>Health risk</b>                     | Positive | Regional | Permanent  | Medium | Probable        | Medium | No health risk is anticipated   | <b>Low</b> |
|  | <b>Waste</b>                           | Positive | Local    | Short-Term | Medium | Probable        | Medium | Collected and disposed-off to a licenced facility.  | <b>Low</b> |
| Monitoring of rehabilitated areas for 6 months | <b>Monitoring of vegetation growth</b> | Positive | Site     | Permanent  | Medium | Highly Probable | Medium | Monitoring of vegetation growth will be done for 2 years after final rehabilitation.  | <b>Low</b> |

**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)

No concerns were raised at the meeting by the interested and affected parties. Public participation meeting was held on the 15<sup>th</sup> of April 2016 and the 21 October 2016 with the Batlhaping Ba Ga Phetlhu tribe under kgosi BT Phethu held in Khankhudung village.

**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, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

A follow up meeting with the Batlhaping Ba Ga Phetlhu tribe was done on the 21 October 2016. Comments raised by interested and affected parties has been considered and attached on this report.

**ix Motivation where no alternative sites were considered.**

For mining purpose there were no alternative sites that were considered during the application of the Mining permit, however they are alternative site for parking machines during night.



Photo 2: The area was previously disturbed where the top soil has been extracted for road construction activities, note the exposed dolomite rocks.

The reasons were that the identified 5ha applied for in terms of Mineral and Petroleum Resource Act is the only targeted area for Mining activities and the department of mineral resources only issued a mining permit to the area applied for. It is in this area where potential of the Dolomite mineral resources has been identified. Therefore, no alternative sites that offers a better practical and economic option.

**x Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed).**

There were no alternative sites which were considered during the application of the Mining permit. The proposed final site has shown the potential of Dolomite resources.

**i. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that are identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)**

Site visit by an Environmental officer was conducted in order to identify environmental features that may be impacted by the proposed Mining activities. The site visit helped

with the identification of different types of soil and vegetation cover. No heritage sites were identified within the proposed mining area, however, if there is heritage area identified, such area of heritage will be reported to the South African heritage resources.

Desktop study was done to acquire more information about the proposed area and the adjacent farm, the climate, economic and their land uses. Assessment was done on the environmental attribute, social, heritage/cultural aspect and impacts were identified and assessed to their duration, nature, extent, probability and significant.

## j. Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

| <b>NAME OF ACTIVITY</b><br>(E.g. For Prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc<br>E.g. For Prospecting, -excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.) | <b>POTENTIAL IMPACT</b><br>(Including the potential impacts for cumulative impacts)<br>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...) | <b>ASPECTS AFFECTED</b>       | <b>PHASE</b><br>In which impact is anticipated<br>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure) | <b>SIGNIFICANCE</b> if not mitigated | <b>MITIGATION TYPE</b><br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br>E.g.<br>Modify through alternative method.<br>Control through noise control<br>Control through management and monitoring through rehabilitation. | <b>SIGNIFICANCE</b> if mitigated |
|--|--|-------------------------------|--|--------------------------------------|--|----------------------------------|
| Vegetation clearance   | -Vegetation loss   | Environment                   | Construction   | High                                 | Existing tracks must be used as far as practicable.<br>Re-vegetation (seeding),<br>Avoid veld fires, and rehabilitation  | Low                              |
| Road construction & upgrading/ maintenance   | Vegetation loss  | Environment, people & animals | Construction   | Medium                               | Ripping of road.<br>Avoid unnecessary construction of roads and use existing roads.  | Low                              |
|  | Dust   | Environment, people & animals | Construction   | Medium                               | Dust suppression methods will be implemented. limit a speed to 30kh/h  | Low                              |

|  |  |                                 |              |        |  |        |
|--|--|---------------------------------|--------------|--------|--|--------|
|  | Ground compaction                      | Environment                     | Operational  | High   | Ripping of road.<br>Avoid construction of newly roads and use existing roads.  | Medium |
| Temporal office site                                   | Surface compaction                     | Environment                     | Operational  | Medium | Ripping of the compacted ground to 300m in order to allow vegetation growth  | Medium |
| Ablution area  | Surface compaction                     | Environment                     | construction | Medium | Ripping of the compacted ground to 300m in order to allow vegetation growth  | Low    |
|  | Air pollution/hygiene                  | People                          | Operational  | Medium | Dust suppression measures such as water spraying.  | Low    |
| -Demarcating temporal storage                          | Surface compaction                     | Environment                     | construction | High   | Ripping of the compacted ground to 300m in order to allow vegetation growth  | Medium |
|  | Visual impact                          | People                          | Operational  | High   | Concurrent rehabilitation  | Medium |
|  | Topographical change                   | Environment                     | Operational  | High   | Rehabilitation   | Medium |
| -Moving of equipment and mobile infrastructure to site | Surface disturbance                    | Environment                     | Construction | Medium | Rehabilitation using backfilling methods as far as practicable.  | Low    |
| Maintenance of machinery /vehicles                     | Soil pollution                         | People, animals and environment | Operational  | High   | Avoid soil contamination at all time. Contaminated soil will be scooped immediately after accidental spill of hydrocarbons.  | Medium |
| Hydrocarbon storage                                    | Soil contamination and water pollution | People, animals and environment | Operational  | High   | Avoid soil contamination at all time. Contaminated soil will be scooped immediately after accidental spill of hydrocarbons. Make sure that measures are applied at the refuelling point. | Medium |



|                                |                |             |               |        |   |     |
|--------------------------------|----------------|-------------|---------------|--------|---|-----|
| Final rehabilitation           | Dust           |             |               | Medium | Topsoil will be spread over the rehabilitated area in order to allow regrowth of vegetation. The area will be sloped to an angle of less than 18°. All machinery will be removed from the site. Ripping of all remaining compacted surface                  | Low |
|                                | Noise          |             |               | Medium | Noise will be minimal since only touch-up will be done on site for final rehabilitation.  | Low |
|                                | Domestic waste | negative    | Closure phase | Low    | Removal of all marked containers and disposed waste at a registered facility  |     |
| Monitoring rehabilitated areas |                | environment | Post closure  | Low    | Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered.<br>All invader species will be monitored and removed from all rehabilitated areas. | Low |

### k. Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

| LIST OF STUDIES UNDERTAKEN        | RECOMMENDATIONS OF SPECIALIST REPORTS   | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED. |
|-----------------------------------|---|--|--|
| Heritage impact assessment report | <p>The phase 1 Archaeological Impact Assessments for Mining Permit on farm Kangkuru 115 near Kuruman revealed no heritage resources sites within the study area. The objective of the AIA is to limit primary and secondary impacts on archaeological and cultural heritage sites in the path of the proposed mineral mining site. The study informs and makes recommendations for any further mitigation that should take place before mineral prospecting commences. In the event of unexpected heritage feature being encountered during Mining phase. Immediate reporting is very much crucial to relevant heritage authorities of any heritage resource discovered during prospecting periods. This recommendation should also be incorporated into the Environmental Management Plan for the proposed mineral prospecting rights.</p> <p>No further studies / Mitigations are recommended given the fact that within the proposed mining site footprint and its surrounding there is no archaeological or place of historical significance that will be impacted by the proposed mineral prospecting activities. From an archaeological and cultural heritage resources perspective, there are no objections to the proposed project and we recommend to the Provincial Heritage Resource Agency, South African Heritage Resource Agency to approve the project as planned.</p> |  |  |

## **I. Environmental impact statement**

### **(i) Summary of the findings of the environmental impact assessment;**

- a) No river or any flowing streams that will be affected by the proposed mining activities.
- b) There were no graves or any historical aspects which were identified during the assessment
- c) It was identified during environmental impact assessment that if all negative impact is avoided and where they cannot be avoided they can be mitigated and managed throughout the lifespan of the mine, they will be insignificant.
- d) No ecologically sensitive Biodiversity areas will be at risk
- e) Natural Ecosystems will not be compromised at a site or regional scale and local scale. Degradation can be mitigated through sound environmental rules, regulations and practise as will be stipulated in the EMPR.
- f) Vegetation Biomes are not threatened at local to regional scale, rehabilitation and mitigation will act to regenerate and restore land to its former state
- g) Positive socio economic effects will be multiplied at local to regional scale

### **(ii) Final Site Map**

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

**Final site map attached as addendum H.**

**(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

The mining activities will have positive impact to the community and also the landowners as a result of the following reason: Employment opportunities will improve socio economic standard of local communities. There will be a multiplier effect which will aid families associated with the workers.

Mining activities will have positive impact however they also have negative impacts on the environment and other aspect on the surrounding. The table below shows the negative impacts as a result of the proposed mining activities. Although they have negative impact, all those negative impacts can be avoided and were they cannot be avoided they can be mitigated and managed throughout the lifespan of the mine. After mitigation if all measures are applied, all impact will be less significant.

| Negative impacts               | Description of the impacts   |
|--------------------------------|--|
| <b>Surface disturbances</b>    | Surface disturbance will occur as a result of stripping of Dolomite this may cause land degradation if not mitigated. The compaction of ground will also occur during mining period.                     |
| <b>Air pollution</b>           | Dust will be generated from movement of the mining equipment. Emissions of smoke from vehicles which are not well serviced.  |
| <b>Noise pollution</b>         | Noise from vehicles will be created during the mining period which may affect the land owner, neighbouring/ adjacent farm owners.  |
| <b>Soil pollution</b>          | Contamination of soil may occur from accidental spillages from the machineries, hydrocarbon storage and refuelling point   |
| <b>Vegetation loss</b>         | -Where the firebreak will be created, the vegetation will be disturbed and/or destroyed.<br>-The vegetation cover will be disturbed and / or destroyed where the mining activities is set to take place. |
| <b>Loss of authentic value</b> | Littering of domestic and industrial waste during mining   |
| <b>Topography</b>              | Mining will disturb the topography of the area.  |
| <b>Surface and</b>             | If accidental hydrocarbons spills are not removed with immediate   |

|   |  |
|---|--|
| <b>ground water contamination</b>               | effect after they spill, this may lead to surface and ground water contamination.  |
| <b>Health risk to workers or general public</b> | This can happen if worker or general public inhale excessive dust or drink contaminated water as a result of the mining activities. This can also occur if the Mine Health and Safety Act is not implemented |
| <b>Veld Fire</b>                                | Veld fire may occur as a result of negligence or improper awareness.   |

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

**The EMP objectives:**

The main objective of the EMPR is to provide information, guideline, and management measure to be implemented during the mining period. By following the information provided on the EMPR, impacts on the environment, cultural and social aspects will be avoided. Sensitive areas will not be disturbed if this document is implemented effectively.

The applicant will operate on the principle that “prevention is better than cure” and so will institute procedures to reduce the risk of emergencies taking place. These will include ensuring that all contracts specify that the contractor is required to comply with all the environmental measures specified in this EMP, environmental awareness training, on-going risk assessment and emergency preparedness.

Through implementation of the proposed mining activities and the mitigation measures it is anticipated that the identified impacts on the environmental, heritage resource and social economic conditions aspects can be mitigated and managed effectively by implementing mitigation and management measures from the EMPR: it is anticipated that through the following management or mitigation measures impacts can be effectively managed:

- a) Surface disturbances, visual impact and topographic changes can be minimised by practising concurrent rehabilitation throughout the mining period. By doing this the area can be easily returned to an acceptable state.

- b) Surface and ground water pollution can be avoided by management of contaminated soil and by avoiding accidental spills.
- c) Noise pollution can be managed through communication with the affected parties and also environmental awareness of the employees.
- d) In term of emergencies all employees shall have the contact details of emergency services, including the local emergency response unit and firefighting service. All employees must be made aware of procedures to be followed during the environmental awareness training course.
- e) Community Involvement-Establish and provide proof of regular stakeholder engagement forums with authorities and local communities. External communication procedures. Provide a final land-use that considers the needs of local communities and can be sustainably managed by the authorities.
- f) Socio Economic Impacts-Restore as much of the mining area to a sustainable land-use capability as is practicable and record and monitor this. Provide rehabilitated areas that contribute to the long-term sustainability of the local economy. Provide proof and report on evidence that CO\_ELLEN will have provided training and resources to develop employees and build competencies related to their environmental and social responsibilities.
- g) Safety-All incidents or complaints should be recorded in their respective registers and proof provided that incidents and complaints have been properly addressed to the satisfaction of all parties. All areas within the mining area will be made as safe as practical and access will be restricted or inhibited where steep slopes present a hazard (i.e. the declines); All final landforms will be designed for physical and chemical stability (Waste rock/Top soil dump remnants); Hazardous waste and non-hazardous waste will be disposed of in an appropriate manner, which protects the environment and human health; and All decommissioning, closure and monitoring activities will be conducted in such a way that they do not pose a safety hazard to people or the environment.

- h) Topography-CO\_ELLEN should capture the closure process on a series of visualisation maps. The height and final shape of Waste rock/Top soil and overburden dumps will be designed to be similar to other land forms in the area. Drainage patterns will be designed to be similar in nature to pre-existing drainage systems. Re-vegetation will incorporate indigenous and common species found in the Kathu Bushveld and Gordonia Duneveld vegetation type, South Africa. Vegetation will be encouraged to grow in areas that are classified as non-restorable lands (and therefore not actively re-vegetated). Understand the bulking factor of the waste material being used to fill the voids and plan the concurrent backfilling to allow for settling of the material over a number of years.
- i) Surface Water- The drainage pattern for the overall site will be planned as part of the overall landscaping. Surface water discharge quality from rehabilitated areas will meet agreed standards except in cases where baseline water quality falls below those standards. Clean storm water will be diverted to natural watercourses wherever practical.
- j) Groundwater- Groundwater quality in the CO\_ELLEN mining area will meet agreed standards except in cases where baseline water quality falls below those standards. Any Waste rock/Top soil dumps and overburden stockpiles with effluent generating potential will be effectively managed and monitored.
- k) Soils and land capability- CO\_ELLEN will implement a comprehensive topsoil management plan. Topsoil resources are recovered and stockpiled prior to site development in accordance with company procedures. The topsoil stockpiles are surveyed on a regular basis. Topsoil will be reused as quickly as practical. Topsoil/subsoil will be placed prior to re-vegetation on restorable lands where the characteristics of surface materials are not suitable for post-mining land uses; Final landforms will be designed to minimise erosion. Soil contamination will be prevented through the use of sanitary facilities, bunds and the correct lubricant storage and vehicle repair facilities. Water movement over rehabilitated areas will be minimised to the extent practical until erosion protection measures are in place. Where surface soils on disturbed areas are suitable for direct re-vegetation, ripping and fertilisation will be completed as necessary to ensure re-vegetative success.

- l) Fauna and flora- Areas that have not and will not be disturbed by mining activities will be protected as far as practical; The areas classified as non-restorable will be encouraged to re-vegetate naturally. Establish rehabilitation demonstration plots for Kathu Bushveld and Gordonia Duneveld as well as grazing and arable crop farming. Restorable lands being rehabilitated will be re-vegetated with a diversity of indigenous species except where demonstration plots of commercial and/or food crop species for agriculture have been established. Top-soiling, grass seeding and planting (shrubs and trees) of the top of the MRDs will be undertaken at closure. Maintain the current seed bank of indigenous plant material by maintaining and where necessary ameliorating the topsoil. Don't allow the rehabilitation areas to cut-off and fragment the sensitive and functioning areas. Invader species will be controlled in a manner which does not cause ancillary harm to the environment. Wildlife will not be harassed or disturbed unnecessarily by employees or contractors.
  
- m) Air Quality- The air quality in all decommissioned and rehabilitated areas will conform to APPA air quality standards. Dust suppression measures will be implemented during decommissioning and closure activities. Re-vegetation, whether active or passive, will re-establish ground cover which will effectively suppress dust.
  
- n) Noise- Unnecessary site sirens will be limited. Complaints due to disturbing noise from mining activities will result in CO\_ELLEN mine responding timeously.
  
- o) Non-mineralised waste- Wastes will be separated at source in order to enable recycle and acceptable disposal. The principles of reduce, reuse and recycle will be practiced. Oil contaminated soils will be treated in the purpose designed land farm.
  
- p) Heritage Resources- Ensure that the heritage resources are clearly marked on the construction, operational and decommissioning plans as NO-GO areas if found during mining.
  
- q) Visual- Ensure wherever possible that all existing natural vegetation is retained and incorporated into the closure design; Ensure where possible that the topsoil and overburden stockpiles are vegetated; and Ensure that dust suppression is on-going



throughout the implementation of this conceptual closure plan to reduce the visual impact to the surrounding areas.

Monitoring of the required mitigation measures is to take place on site daily by the site manager. Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMR.

**n. Aspects for inclusion as conditions of Authorisation.**

*(Any aspects which must be made conditions of the Environmental Authorisation)*

- The applicant must inform the farm owners and adjacent farm owners prior to any commencement of the mining activities.
- The applicant must appoint security officers in order to control access to the farm.
- The financial provision must be adjusted annually.

**o. Description of any assumptions, uncertainties and gaps in knowledge.**

*(Which relate to the assessment and mitigation measures proposed?)*

The Gaps of this basic assessment report is that it does not include comments from Department of Environment and Nature Conservation; however, this will be forwarded to DMR as soon as comments are received from States department. Uncertainties exist in the actual final depth of pits. The final size will only be known when mining takes place.

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

**i Reasons why the activity should be authorized or not.**

All activities applied for should be authorized since there is no reason why they should not authorised. All impacts have been assessed, evaluated and mitigations are in place to minimize any disturbance as a result of mining activities. Monitoring of the required mitigation measures is to take place on site every two weeks by the environmental officer and daily by site manager. Annual monitoring audits will be done by an appointed independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMR.

## **ii Conditions that must be included in the authorisation**

- a) A copy of the authorisation and must be kept at the property where the activities will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.
- b) Where any of the applicant's contact details change, including the name of the responsible person where the applicant is a juristic person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
- c) The holder of the authorisation must notify the Department, in writing and within twenty-four (24) hours, if any condition of this authorisation cannot be or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.
- d) All areas on site that is disturbed must be rehabilitated using locally occurring indigenous plant species.
- e) The mining site must be clearly demarcated; clear signage must be erected; and access controlled.
- f) Environmental officer (EO) must visit the area at least twice a month.
- g) The EMPR, Environmental Authorisation and the layout plan must always be on site.

## **q. Period for which the Environmental Authorisation is required.**

The Environmental Authorisation is required for a period of five years. The five years will also cover the final rehabilitation and monitoring period.

## **r. Undertaking**

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to report.

The undertaking has been attached at the end of both the Basic assessment report and the Environmental Management Programme

## **s. Financial PROVISION**

STATE THE AMOUNT THAT IS REQUIRED TO BOTH MANAGE AND REHABILITATE THE ENVIRONMENT IN RESPECT OF REHABILITATION.

The financial provision has been calculated to the amount of R 168 367.00 for management and rehabilitation of environmental impacts.

### **i Explain how the aforesaid amount was derived.**

The purpose of mining activities will consist of mining of Dolomite which covers almost the entire 4.95ha applied for. However, area of 100m x 100m to a depth of 5m from the surface area will be opened and rehabilitated at any given time before moving or opening the other site. In circumstances where the said area to be opened at any given time is exceeded, the applicant will ensure that the financial provision is aligned accordingly. Overburden will be stripped and stockpiled on a temporary storage area. Stored overburden will be used for the sloping of opened area to a slope angle of 18° during rehabilitation. Dolomite stockpile will be removed and stored at a temporarily stockpile area where it will be hauled off site to market area.

Environmental Rehabilitation was calculated as follows.

|   |                   |
|---|-------------------|
| Excavations (100m x 100m at any given time) | 1ha               |
| Fence                                       | 400 m             |
| Temporary dump area (Product)               | 0.01ha            |
| Temporary storage of recovered dolomite     | 0.04ha            |
| Mobile Office                               | 0.0025 ha         |
| Ablution Facility                           | 0.0025 ha         |
| Construction of temporal access roads       | 400m <sup>2</sup> |
| Weigh bridge                                | 64m <sup>2</sup>  |
| LDV Parking                                 | 20m <sup>2</sup>  |
| Crushing and Screening                      | 25m <sup>2</sup>  |
| Maintenance area                            | 25m <sup>2</sup>  |

|                    |   | CALCULATION OF THE QUANTUM |               |                     |                                |                            |                                |  |
|--------------------|---|----------------------------|---------------|---------------------|--------------------------------|----------------------------|--------------------------------|--|
| Applicant:         | CON-ELLEN (PTY)LTD  |                            |               |                     | Ref No.:                       | NC30/5/1/1/2/10544MP       |                                |  |
| Evaluators:        | Ndi Geological Consulting Services  |                            |               |                     | Date:                          | Oct-16                     |                                |  |
| No.                | Description   | Unit                       | A<br>Quantity | B<br>Master<br>Rate | C<br>Multiplication<br>factor  | D<br>Weighting<br>factor 1 | E=A*B*C*D<br>Amount<br>(Rands) |  |
| 1                  | Dismantling of processing plant and related structures<br>(including overland conveyors and powerlines) | m3                         | 0             | 12.99               | 1                              | 1                          | 0                              |  |
| 2 (A)              | Demolition of steel buildings and structures  | m2                         | 0             | 180.92              | 1                              | 1                          | 0                              |  |
| 2(B)               | Demolition of reinforced concrete buildings and structures  | m2                         | 0             | 266.61              | 1                              | 1                          | 0                              |  |
| 3                  | Rehabilitation of access roads  | m2                         | 400           | 32.37               | 1                              | 1                          | 12948                          |  |
| 4 (A)              | Demolition and rehabilitation of electrified railway lines  | m                          | 0             | 295.49              | 1                              | 1                          | 0                              |  |
| 4 (A)              | Demolition and rehabilitation of non-electrified railway lines  | m                          | 0             | 314.22              | 1                              | 1                          | 0                              |  |
| 5                  | Demolition of housing and/or administration facilities  | m2                         | 0             | 171.39              | 1                              | 1                          | 0                              |  |
| 6                  | <b>Opencast rehabilitation including final voids and ramps</b>  | ha                         | <b>0.5</b>    | <b>183565.47</b>    | <b>0.52</b>                    | <b>1</b>                   | <b>47727.0222</b>              |  |
| 7                  | Sealing of shafts adits and inclines  | m3                         | 0             | 97.12               | 1                              | 1                          | 0                              |  |
| 8 (A)              | Rehabilitation of overburden and spoils   | ha                         | 0             | 126450.38           | 1                              | 1                          | 0                              |  |
| 8 (B)              | Rehabilitation of processing waste deposits and evaporation<br>ponds (non-polluting potential)          | ha                         | 0             | 157491.66           | 1                              | 1                          | 0                              |  |
| 8 (C)              | Rehabilitation of processing waste deposits and evaporation<br>ponds (polluting potential)              | ha                         | 0             | 457430.43           | 1                              | 1                          | 0                              |  |
| 9                  | Rehabilitation of subsided areas  | ha                         | 0             | 105883.15           | 1                              | 1                          | 0                              |  |
| 10                 | General surface rehabilitation  | ha                         | 0.08          | 100170.03           | 1                              | 1                          | 8013.6024                      |  |
| 11                 | River diversions  | ha                         | 0             | 100170.03           | 1                              | 1                          | 0                              |  |
| 12                 | Fencing   | m                          | 400           | 114.26              | 1                              | 1                          | 45704                          |  |
| 13                 | Water management  | ha                         | 0             | 38087.46            | 1                              | 1                          | 0                              |  |
| 14                 | 2 to 3 years of maintenance and aftercare   | ha                         | 0.5           | 13330.61            | 1                              | 1                          | 6665.305                       |  |
| 15 (A)             | Specialist study  | Sum                        | 0             |                     |                                | 1                          | 0                              |  |
| 15 (B)             | Specialist study  | Sum                        |               |                     |                                | 1                          | 0                              |  |
| Sub Total 1        |   |                            |               |                     |                                |                            | 121057.93                      |  |
| 1                  | Preliminary and General   |                            | 14526.95155   |                     | <b>weighting factor 2</b><br>1 |                            | 14526.9516                     |  |
| 2                  | Contingencies   |                            |               | 12105.79296         |                                |                            | 12105.793                      |  |
| Subtotal 2         |   |                            |               |                     |                                |                            | 147690.67                      |  |
| VAT (14%)          |   |                            |               |                     |                                |                            | 20676.69                       |  |
| <b>Grand Total</b> |   |                            |               |                     |                                |                            | <b>168367</b>                  |  |

- CRUSHING
  - Loading crusher with FEL
  - Fogger system on crusher to reduce dust
- SCREENING
  - Screen is fed directly from crusher
  - -6mm, 13mm and 19mm product from screen
- STOCKPILING
  - Stock piling by material size
  - Loading trucks with FEL for weighbridge and dispatch

- Crushing 50 000 tons of dolomite per month
- Expected 80% recovery
- Water for domestic purposes from Sedibeng
- Boreholes and dewatered water from the pit will be used for dust suppression
- The mine will be using between 70 000 to 10 000 litres per month
- Diesel bay with band wall to be erected for refuelling purposes

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

The financial provision of R 168 367.00 can be provided for from operating expenditure.

The applicant intends to make this financial provision in a form of bank guarantee or cash deposit.

#### **t. Specific Information required by the competent Authority**

None at this stage

#### **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:-**

There is no report which was compiled for socio-economic condition. However this will be discussed with interested and affected parties as follows:

##### **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 Prospecting, bulk sampling or alluvial diamond Prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix** .

- Noise as a results of Mining activities,
- Potential water pollution as a result of neglected soil contamination,
- Negative visual impact
- Dust
- Surface disturbances as a result of mining activities

Positive impacts on directly affected parties:

Employment opportunities will improve socio economic standard of local community from which a small labour pool will be drawn. There will be a multiplier effect which will aid families associated with the workers.

Mitigation measure to the impacts of the socio-economic condition of any directly affected person:

- Reasonable and effective methods must be implemented to reduce the liberation of dust from operational activities.
- Dust suppression measures such as water dampening from trailer to be used if and when required.
- Mine staff ECO induction will train all staff on recognition and importance of fauna and livestock.
- Hunting, snaring, capturing or interfering with any fauna and landowner's stock is forbidden.
- The areas demarcated for mining activities must be minimal reasonably required which will involve the least possible disturbance to the environment and must be fenced to restrict any fauna from entering the pits.
- Excavation must be sloped immediately when fully exploited (Concurrent rehabilitation)
- Using drip trays and taking precautions on the refuelling point. If any soil is contaminated during the life of the mining activities, it will be immediately scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility for further treatment. Small spills will be treated on site using bio-sorb, Bio-shock or oil cap. This will minimise surface or ground water pollution.

**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 Prospecting, 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)(j)(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).

No heritage features were identified on the proposed application site.

**U. 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**).

## PART B

# ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

## 1. Draft environmental management programme.

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

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

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

The description of the aspect of the activity has been already covered in part A on section 1(h)

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

Attached as an Addendum H

**d) Description of Impact management objectives including management statements**

**i Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

Closure objectives have been determined in terms of the principles of National Environmental Management Act, Act 107 of 1998 (NEMA) since NEMA is the foundation of all environmental legislation:

- With regard to the proposed mining operation, the determination of closure objective includes the rehabilitation of the area to its natural state.
- The disturbance of ecosystems and loss of biological diversity will be avoided, or, where they cannot altogether be avoided, are minimised and remedied.
- pollution and degradation of the environment will be avoided, or, where they cannot altogether be avoided, are minimised and remedied;
- The disturbance of landscapes and sites that constitute the nations cultural heritage will be avoided, or where it cannot altogether be avoided, is minimised and remedied;
- Waste will be avoided, or where it cannot altogether be avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;

- The use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- A risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;
- Negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot altogether be prevented, are minimised and remedied
- No further mining related activities will take place;
- The topography of the area will have been restored to its pre-project state (with the exception of the permanent mineralised waste facilities and possibly surface water management structures if required);
- Topsoil will have been replaced at disturbed areas; and
- Disturbed areas will have been re-vegetated.

Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and the surrounding.

## **ii Volumes and rate of water use required for the operation.**

It is anticipated that 1000L may be used on site for drinking purpose and as a dust suppression measure if required. Minimum dust will be created as a result of the mining activities.

## **iii Has a water use licence has been applied for?**

Application for water use licence is on process.



iv Impacts to be mitigated in their respective phases

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

| ACTIVITIES<br>(E.g. For mining - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc<br>E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.) | PHASE<br>(of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure). | SIZE AND SCALE of disturbance<br>(volumes, tonnages and hectares or m <sup>2</sup> ) | MITIGATION MEASURES<br>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)  | COMPLIANCE WITH STANDARDS<br>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities) | TIME PERIOD FOR IMPLEMENTATION<br>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-<br>Upon cessation of the individual activity or.<br>Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be. |
|---|--|--|--|---|---|
| Literature Review   | Planning   | -  | Mitigation not proposed  | -   | -   |
| Geological Mapping  | Planning   | --   | No mitigation proposed   | -   | -   |
| Geophysical Mapping   | Planning   | -  | Farm owners will be consulted with regard to the access to the proposed mining site.<br><br>Gates will be closed after entering and departing the proposed Mining.<br><br>No poaching will be allowed on site. | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> <li>• EATC and ECO inspection</li> </ul>                                      | Mitigation measures will be implemented when required.  |
| Site establishment  | Construction   | 4.95 ha  | <ul style="list-style-type: none"> <li>• Existing tracks must be used as far as</li> </ul>   | The applicant will make sure  | Mitigation measures will be   |

|                              |                            |                   |  |   |   |
|------------------------------|----------------------------|-------------------|--|---|---|
|                              |                            |                   | <p>practicable.</p> <ul style="list-style-type: none"> <li>• Avoid veld fires,</li> <li>• The mining area will be demarcated by means of fence.</li> <li>• The area for fuel storage will be demarcated by means constructing a cement slab with bund walls around.</li> <li>• Sensitive areas like gullies and dry wash will be avoided.</li> <li>• Large established trees and bushes will also be avoided.</li> <li>• If large shrubs to be removed preferable to brush cut at surface level and retain root structure in place.</li> <li>• If any fauna species is found during site establishment stage, they will be relocated to other portions of the farm.</li> </ul> | <p>that the employees comply with the standard laid out in the Environmental Management Programme and the Environmental Authorisation including their conditions and /or conditions identified by Competent Authority. This to be done by way of regular EATC (training) and regular Environmental inspection and auditing.</p> | <p>implemented when required. However, other mitigations measures such as existing tracks will be implemented from the commencement of this activity until cessation of activity.</p>   |
| Vegetation clearance         | Construction & Operational | 4.95 ha           | <ul style="list-style-type: none"> <li>• Existing tracks must be used as far as practicable.</li> <li>• Large trees and bushes to be left in situ as far as is practically possible</li> <li>• Avoid veld fires,</li> <li>• The individuals of any protected plant species should be retained <i>in situ</i> wherever possible. Permits have to be obtained from NCDENC and/or DAFF for the removal of protected species from the site.</li> </ul>   | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> <li>• EATC and ECO inspection</li> </ul>  | <ul style="list-style-type: none"> <li>• Mitigation measures to be in place prior to activity.</li> <li>• In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site</li> </ul> |
| Construction of access roads | Construction               | 400m <sup>2</sup> | <ul style="list-style-type: none"> <li>• Avoid unnecessary construction of newly roads and use existing roads.</li> </ul>  | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with</li> </ul>   | <ul style="list-style-type: none"> <li>• Mitigation measures to be in place prior to activity.</li> </ul>   |

|                              |                              |                  |   |  |  |
|------------------------------|------------------------------|------------------|---|--|--|
|                              |                              |                  | <ul style="list-style-type: none"> <li>• Dust suppression methods will be implemented.</li> <li>• limit a speed to 30kh/h</li> <li>• Limit road width to 3m</li> <li>• Avoid new road construction over listed trees and shrubs and other sensitively identified areas such as loose Dolomites and dry wash areas.</li> </ul>   | <p>Competent Authorities requests and regulation</p> <ul style="list-style-type: none"> <li>• EATC and ECO inspection</li> </ul>   | <ul style="list-style-type: none"> <li>• In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site</li> </ul> |
| Temporary Mobile office site | Construction & Operation     | 50m <sup>2</sup> | <ul style="list-style-type: none"> <li>• On removal and rehabilitation the compacted surface will be ripped to a depth of 300mm in order to allow regrowth.</li> <li>• When establishing the office and veg clearance is unavoidable, preferable to brush cut at surface level and retain root structure in place to bind and hold soil and to aid rehab after removal of site office.</li> </ul> | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> </ul>                                    | Immediate when office is installed on mine and after removal off site  |
| Ablution area                | Construction & Operation     | 12m <sup>2</sup> | <ul style="list-style-type: none"> <li>• The containers will be emptied by qualified applicant regularly to avoid health risk.</li> <li>• Doors will be kept latched at all times to prevent toilet paper from blowing into veld.</li> <li>• Facility will be locked during mine closure weekends when personnel on not on site</li> </ul>  | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> <li>• EATC and ECO inspection</li> </ul> | ongoing and with weekly regularity throughout life of mine   |
| Vehicle maintenance          | Construction and operational |                  | No maintenance of vehicles will be done on site.  | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities</li> </ul>  | Immediate on repair of any vehicle or plant equipment  |

|                      |                |         |  |   |  |
|----------------------|----------------|---------|--|---|--|
|                      |                |         |  | requests and regulation   |  |
| Final rehabilitation | Rehabilitation | 4.95 ha | <ul style="list-style-type: none"> <li>• Pit to be shape filled</li> <li>• Area to be profiled to assume shape and slope of surrounding land form</li> <li>• Area to be mulched to protect topsoil and root stock and allow for reseeding process</li> <li>• Ripping of all remaining compacted surface</li> <li>• Removal of all marked containers and disposed waste at a registered facility</li> <li>• All equipment and mobile infrastructure will be taken out of the site.</li> </ul> | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> </ul> | Upon cessation of Mining, during rehabilitation phase. |
| Monitoring           | Closure        | 4.95 ha | <p>Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered.</p> <p>All invader species will be monitored and removed from all rehabilitated areas</p>  | <ul style="list-style-type: none"> <li>• Compliance with EMPR</li> <li>• Compliance with Competent Authorities requests and regulation</li> </ul> | Post closure and post rehabilitation.                  |

**e) Impact Management Outcomes** (A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ());

| ACTIVITY<br>(whether listed or not listed).<br>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.). | POTENTIAL IMPACT<br>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...) | ASPECTS AFFECTED    | PHASE<br>In which impact is anticipated<br>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure) | MITIGATION TYPE<br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br>E.g.<br><input type="checkbox"/> Modify through alternative method.<br><input type="checkbox"/> Control through noise control<br><input type="checkbox"/> Control through management and monitoring<br><input type="checkbox"/> Remedy through rehabilitation.. | STANDARD TO BE ACHIEVED<br>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.                                   |
|---|---|---------------------|---|--|---|
| Literature Review   | None  | N/A                 | Planning  | No mitigation proposed   | -   |
| Geological Mapping  | None  | N/A                 | Planning  | No mitigation proposed   | -   |
| Geophysical Mapping   | Poor access control which may result into livestock theft.  | fauna and people    | Planning  | Control through management and monitoring measure as follows:<br><br>Farm owners will be consulted with regard to the access to the proposed Mining site.<br><br>Gates will be closed after entering and departing the proposed Mining.<br><br>No poaching will be allowed on site.  | Impact avoided  |
| Site establishment  | Vegetation loss<br><hr/> Compaction of ground   | Environment & fauna | Construction  | <ul style="list-style-type: none"> <li>• Remedy through rehabilitation and re-vegetation.</li> <li>• Remedy through ripping of compacted ground</li> </ul>   | Rehabilitation standards. Site to be rehabilitated to former land use with similar biodiversity component as pre- Mining and to acceptable visual standard. |
| Vegetation clearance  | Vegetation loss   |                     |   | <ul style="list-style-type: none"> <li>• Avoid unnecessary removal of vegetation Using existing</li> </ul>   | Vegetation to be regenerated to resemble former species   |

|                              |                   |                       |                            |   |  |
|------------------------------|-------------------|-----------------------|----------------------------|---|--|
|                              | soil erosion      | Environment & fauna   | Construction & operational | roads as far as practicable Remedy through rehabilitation and re-Vegetation. Control through dust suppression methods   | composition. Alien intrusion to be eradicated.   |
| Construction of access roads | Vegetation loss   | Environment & animals | Construction & operational | <ul style="list-style-type: none"> <li>Using existing roads as far as practicable</li> <li>Remedy through rehabilitation</li> <li>Control through management and monitoring.</li> </ul> | Impact avoided, dust levels and rehabilitation standards. Avoid construction as far as practically possible<br>Roads will be less than 3m width<br>Roads to avoid sensitive areas and Listed Vegetation<br>After rehab and closure new roads will be left in situ to aid landowner and provide improved farm infrastructure. |
|                              | Dust              |                       |                            |   |  |
|                              | Ground compaction |                       |                            |   |  |
| Temporal Mobile office site  | Ground compaction | Environment           | Construction & operational | Remedy through ripping of compacted ground/surface  | Surface under where structure was situated to be rehabilitated, to ensure vegetation will adequately regrow and biodiversity and former land use is re-established.  |
| Ablution area                | Health risk       | Environment & people  | Construction & Operational | Control through management and monitoring   | Regular cleaning<br>Maintain adequate health standard compliance with O H & S.<br>Keep doors closed  |

|                      |                |                     |                          |   |  |
|----------------------|----------------|---------------------|--------------------------|---|--|
| Vehicle maintenance  | Soil pollution | Environment (Water) | Operational phase        | <ul style="list-style-type: none"> <li>• Pollution control measures</li> </ul>  | No soil spoilage and hydro carbon spillage will be visible on site.  |
| Final rehabilitation | Dust           | people              | Decommissioning          | <ul style="list-style-type: none"> <li>• Topsoil will be spread over the rehabilitated soil in order to allow regrowth of vegetation.</li> <li>• Excavations will be sloped to an angle of less than 18°</li> <li>• All machinery will be removed from the site.</li> <li>• Ripping of all remaining compacted surface</li> </ul> | Rehabilitation standard to be achieved. Former vegetation species and Biodiversity to be re-instated as far as possible, alien infestation to be controlled. Former land use objectives standards to be re-instated to livestock grazing                                 |
|                      | Noise          | People and animals  |                          |   |  |
|                      | Domestic waste | environment         |                          |   |  |
| Monitoring           | -              | Environment         | Closure and post closure | <ul style="list-style-type: none"> <li>• Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered.</li> <li>• All invader species will be monitored and removed from all rehabilitated areas</li> </ul>            | Rehabilitation and end land use Rehabilitation standard to be achieved. Former vegetation species and Biodiversity to be re-instated as far as possible, alien infestation to be controlled. Former land use objectives standards to be re-instated to livestock grazing |

**f) Impact Management Actions** (A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

| <b>ACTIVITY</b><br>whether listed or not listed.<br>(E.g. Excavations, blasting, stockpiles, discard dumps or dams Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.). | <b>POTENTIAL IMPACT</b><br>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...) | <b>MITIGATION TYPE</b><br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br>E.g.<br><input type="checkbox"/> Modify through alternative method.<br><input type="checkbox"/> Control through noise control<br><input type="checkbox"/> Control through management and monitoring<br><br>Remedy through rehabilitation.. | <b>TIME PERIOD FOR IMPLEMENTATION</b><br>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.<br>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..<br>Upon cessation of the individual activity or.<br>Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be. | <b>COMPLIANCE WITH STANDARDS</b><br>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities) |
|--|--|--|---|--|
| Literature Review  | None   | No mitigation proposed   | Planning Stage  | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization.   |
| Geological Mapping   | None   | No mitigation proposed   | Planning Stage  | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization.   |
| Geophysical Mapping  | Poor access control which may result into livestock theft.   | Farm owners will be consulted with regard to the access to the proposed Mining site.<br><br>Gates will be closed after entering and departing the proposed Mining.<br><br>No poaching will be allowed on site.   | Planning Stage  | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization.   |
| Site establishment   | <ul style="list-style-type: none"> <li>Vegetation loss</li> </ul>  | <ul style="list-style-type: none"> <li>Remedy through rehabilitation</li> </ul>  | Mitigation measures will be implemented   | The applicant will make sure that the  |



|                              |  |  |   |  |
|------------------------------|--|--|---|--|
|                              | <ul style="list-style-type: none"> <li>• Compaction of ground</li> </ul>   | <ul style="list-style-type: none"> <li>• and re-vegetation.</li> <li>• Remedy through ripping of compacted ground</li> </ul>   | <p>when required. However, other mitigations measures such as existing tracks will be implemented from the commencement of this activity until cessation of activity.</p>   | <p>employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.</p>                                       |
| Vegetation clearance         | <ul style="list-style-type: none"> <li>• Vegetation loss</li> <li>• soil erosion</li> </ul>                      | <ul style="list-style-type: none"> <li>• Avoid unnecessary removal of vegetation Using existing roads as far as practicable Remedy through rehabilitation and re-Vegetation. Control through dust suppression methods</li> </ul> | <ul style="list-style-type: none"> <li>• Mitigation measures to be in place prior to activity.</li> <li>• In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site</li> </ul> | <p>The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.</p> |
| Construction of access roads | <ul style="list-style-type: none"> <li>• Vegetation loss</li> <li>• Dust</li> <li>• Ground compaction</li> </ul> | <ul style="list-style-type: none"> <li>• Using existing roads as far as practicable</li> <li>• Remedy through rehabilitation</li> <li>• Control through management and monitoring.</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Mitigation measures to be in place prior to activity.</li> <li>• In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site</li> </ul> | <p>The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.</p> |
| Temporal Mobile office site  | <ul style="list-style-type: none"> <li>• Surface compaction</li> <li>• Vegetation loss</li> </ul>                | <ul style="list-style-type: none"> <li>• Remedy through ripping of compacted ground/surface</li> </ul>   | <p>Immediate when office is installed on mine and after removal off site</p>  | <p>The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.</p> |
| Ablution area                | <ul style="list-style-type: none"> <li>• Health risk</li> </ul>  | <ul style="list-style-type: none"> <li>• Control through management and monitoring</li> </ul>  | <p>ongoing and with weekly regularity throughout life of mine</p>   | <p>The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and</p>   |

|   |  |  |  |   |
|---|--|--|--|---|
|   |  |  |  | EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.   |
| Vehicles movement within the mining area.   | <ul style="list-style-type: none"> <li>dust</li> <li>noise</li> <li>Ground compaction</li> </ul> | <ul style="list-style-type: none"> <li>Noise levels must comply with OHS regulations.</li> <li>Noise generating activities should be restricted to normal working hours. Mine is noted to be remote from any settlement and human habitation</li> <li>Vehicle exhaust systems should be in good state of maintenance with standard noise suppression equipment.</li> <li>Personnel will wear PPE, specifically ear muffs to suppress noise levels when using machinery.</li> <li>Ripping of the compacted ground to 300m in order to allow vegetation growth</li> </ul> <p>Dust suppression measure will be applied in order to control and manage dust.</p>                 | Throughout Mining period and upon cessation of the individual activity | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations. |
| Hydrocarbon storage ( <i>kindly note this is optional since mobile diesel tanker is a preferred choose to be used</i> ) | <ul style="list-style-type: none"> <li>Soil pollution</li> <li>Water pollution</li> </ul>        | <ul style="list-style-type: none"> <li>Pollution control measures</li> <li>Hydrocarbon will be stored within the storage containers and will be place on a cement slab within the bund walls.</li> <li>Drip trays will be placed under each stationary equipment or vehicles to avoid soil contamination which may lead to water pollution</li> <li>Taking precautions on the refuelling point.</li> <li>If any soil is contaminated during the life of the Mining activities, it will be immediately scooped and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility or applicant for further</li> </ul> | Throughout Operational period of the mine                              | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations. |

|                      |   |  |  |   |
|----------------------|---|--|--|---|
|                      |   | <p>treatment.</p> <ul style="list-style-type: none"> <li>• Small spills will be treated on site using bio-sorb or oil cap.</li> </ul>  |  |   |
| Final rehabilitation | <ul style="list-style-type: none"> <li>• Dust</li> <li>• Noise</li> <li>• Domestic waste</li> </ul> | <ul style="list-style-type: none"> <li>• Topsoil will be spread over the rehabilitated areas in order to allow regrowth of vegetation.</li> <li>• All machinery will be removed from the site.</li> <li>• Ripping of all remaining compacted surface</li> </ul>  | Upon cessation of mining, during rehabilitation phase. | The applicant will make sure that the employees or anyone who enters the Mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations. |
| Monitoring           | -   | <ul style="list-style-type: none"> <li>• Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered.</li> <li>• All invader species will be monitored and removed from all rehabilitated areas</li> </ul> | Post closure and post rehabilitation.                  | The applicant will make sure that the employees or anyone who enters the mining area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations. |

## **i. Financial Provision**

### **1. Determination of the amount of Financial Provision.**

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

The closure objectives are to create a post-mining state as close as possible to the pre-mining state of the environment. This can be accomplished by the correctness of rehabilitation and proper after-care activities.

- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- To safeguard the safety and health of humans and animals on the mine.
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy.
- Profiling of pits.
- Re-establishment of Biodiversity.
- Re-establishment of vegetation species.
- Return to landowner a land use that is same as the pre Mining land use.
- To leave newly constructed road in state that added value to infrastructure of the farm.
- To ensure that all fencing is left as it was in pre-mining status.

CO\_ELLEN, following the consideration of this conceptual closure framework will develop specific closure objectives and targets and these will serve as the basis for the development of all their future revisions of the conceptual closure plan and associated cost estimates for various operational sections of the CO\_ELLEN. These objectives and targets are described in the following sections.

- **Community Involvement**

#### Objectives

- To ensure effective involvement of communities in decisions that affect them;
- To ensure that community needs and concerns are addressed;
- To ensure that the proposed rehabilitation plan takes into account the John Taolo Gaetsewe (Joe Morolong) District Municipality spatial development framework plan; and
- To ensure that key authorities (DMR, DWA) and departments are involved (John Taolo Gaetsewe (Kalagadi) District Municipality, Joe Morolong Local Municipality).

#### Targets

- CO\_ELLEN to engage with authorities and local communities by means of regular stakeholder engagement forums;
- Provide a final land-use that considers the needs of local communities and can be sustainably managed by the authorities; and
- CO\_ELLEN to encourage entrepreneurial local people/businesses to participate in the execution of work programmes.

- **Socio Economic Impacts**

#### Objectives

- To ensure that post closure areas contribute to the long-term local economy and or environment.
- In terms of section 41 of the MPRDA Regulations, CO\_ELLEN will promote employment and advance the social welfare of South Africans during the implementation of the conceptual closure process, especially for the local community of Khankhudung.

#### Targets

- Restore as much of the mining area to a sustainable land-use capability as is practicable;

- Provide rehabilitated areas that contribute to the long-term sustainability of the local economy;
- Provide training and resource to develop employees and build competencies related to their environmental and social responsibilities;

- **Safety**

Objective

- To ensure that third party, livestock and wildlife safety concerns are effectively addressed in the rehabilitation plan.

Targets

- All areas within the mining area will be made as safe as practical and access will be restricted or inhibited where steep slopes present a hazard (i.e. the declines);
- Hazardous waste and non-hazardous waste will be disposed of in an appropriate manner, which protects the environment and human health; and
- All decommissioning, closure and monitoring activities will be conducted in such a way that they do not pose a safety hazard to people or the environment.

- **Topography**

Objective

- To ensure that final landforms blend with other landforms in the area to the extent practical
- To ensure that there is no surface subsidence above the mine workings; and
- To prevent subsidence occurring at the rehabilitated and closed areas (will implement slopping as a primary approach to surface rehabilitation).

Targets

- The height and final shape of Waste rock/Top soil and overburden dumps will be dumped back into the hollow ground

- Drainage patterns will be designed to be similar in nature to pre-existing drainage systems;
- Re-vegetation will incorporate indigenous and common species found in the study area falls within the Kathu bushveld and Gordonia duneveld vegetation type, South Africa; and
- Vegetation will be encouraged to grow in areas that are classified as non-restorable lands (and therefore not actively re-vegetated).

- **Surface Water**

Objectives

- To ensure that pre-mining drainage patterns are maintained where practical;
- To ensure that surface water drainage from rehabilitated areas conforms to agreed water quality standards in order to facilitate resumption of traditional land use patterns (i.e. Identify if necessary possible impacts on resource quality objectives);
- To minimise the degradation of clean storm water runoff where practical;
- To design closure features that avoid impeding watercourses and in line with gn704 (i.e. Identify if necessary possible impacts on water quantity); and
- Keep the volume of water stored within the right area to a minimum where practical.

Targets

- The drainage pattern for the overall site will be planned as part of the overall landscaping;
- Surface water discharge quality from rehabilitated areas will meet agreed standards except in cases where baseline water quality falls below those standards; and
- Clean storm water will be diverted to natural watercourses wherever practical.

- **Groundwater**

Objective

- To ensure that the groundwater quality is maintained in a condition suitable for the resumption of traditional land use patterns.

Targets

- Groundwater quality in the CO\_ELLEN mining area will meet agreed standards except in cases where baseline water quality falls below those standards; and
- Any voids, Waste rock/Top soil dumps and overburden stockpiles with effluent generating potential will be effectively managed and monitored.

- **Soils and Land Capability**

The importance of topsoil as a resource acting as a seed bank, source of nutrients, containing micro-organisms and allows rooting to take place is fully recognised. Any land clearing or land disturbance requires the approval of the mine's General Manager and plans for drainage management and topsoil recovery are developed as part of the clearing plans. Wherever practicable, topsoil will be stripped from all disturbed areas and stored for future closure activities. The topsoil will be stockpiled for the establishment of cover crops to minimise erosion and maximise the long-term viability of this growth medium.

Objectives

- To recover and preserve topsoil resources for closure purposes;
- To minimise soil erosion;
- To minimise soil compaction;
- To ensure that there is adequate closure media;
- To ensure that soils are able to support the resumption of and maintain traditional land use patterns.
- Appropriate rehabilitation of the project site to enable the land to be exploited post closure of the project; and



- Rehabilitation of land disturbed by mining will be undertaken on an on-going basis throughout the life of the mine as soon as it becomes available for rehabilitation.

#### Targets

- CO\_ELLEN will implement a comprehensive topsoil management plan. Topsoil resources are recovered and stockpiled prior to site development in accordance with company procedures (CO\_ELLEN environmental standard: ES001- Soils). The topsoil stockpiles are surveyed on a regular basis.
- Topsoil/subsoil will be placed prior to re-vegetation on restorable lands where the characteristics of surface materials are not suitable for post-mining land uses;
- Final landforms will be designed to minimise erosion;
- Soil contamination will be prevented through the use of sanitary facilities, bunds and the correct lubricant storage and vehicle repair facilities;
- Water movement over rehabilitated areas will be minimised to the extent practical until erosion protection measures are in place; and
- Where surface soils on disturbed areas are suitable for direct re-vegetation, ripping and fertilisation will be completed as necessary to ensure re-vegetative success.

- **Flora and Fauna**

#### Objectives:

- To prevent unnecessary disturbance to undisturbed habitat during decommissioning and closure activities;
- To encourage the re-establishment of productive natural ecosystems;
- To observe the construction and operational fauna and floral objectives recommended by specialist are met;
- To encourage the re-establishment of locally indigenous flora and fauna in areas where rehabilitation is undertaken;
- To encourage the establishment of corridors to link the habitats (i.e. Using drainage lines as an example); and

- To control the spread of category 1 and 2 invader species wherever practical

Targets:

- Areas that have not and will not be disturbed by mining activities will be protected as far as practical;
- The areas classified as non-restorable will be encouraged to re-vegetate naturally;
- Establish rehabilitation demonstration plots for areas that fall within the Kathu bushveld and gordonia duneveld as well as grazing;
- Restorable land being rehabilitated will be re-vegetated with a diversity of indigenous species;
- Top-soiling, grass seeding and planting (shrubs and trees) of the top of the muds will be undertaken as part of concurrent closure (will implement slopping as an primary approach to surface rehabilitation);
- Maintain the current seed bank of indigenous plant material by maintaining and where necessary ameliorating the topsoil;
- Don not allow the rehabilitation areas to cut-off and fragment the sensitive and functioning areas;
- Invader species will be controlled in a manner which does not cause ancillary harm to the environment; and
- Wildlife will not be harassed or disturbed unnecessarily by employees or contractors.

- **Air Quality**

Objective

- To ensure that dust from decommissioned and rehabilitated areas does not become a grazing quality problem or visual hazard, nuisance or aesthetically displeasing to surrounding communities.

Targets

- The air quality in all decommissioned and rehabilitated areas will conform to air quality standards;

- Dust suppression measures will be implemented during decommissioning and closure activities; and
- Re-vegetation, whether active or passive, will re-establish ground cover which will effectively suppress dust.

- **Noise**

Objective

- Limit exposure of the communities to the north east and north of the site to be disturbed by the noise generated by the closure process.

Actions

- Unnecessary site sirens will be limited; and
- Complaints due to disturbing noise from mining activities will result in CO\_ELLEN mine responding timeously.

- **Non-Mineralised Waste Materials**

Objectives

- To ensure that as far as possible the potential dangers of waste materials are rendered insignificant, or reduced to an acceptable level before disposal;
- To ensure that potentially harmful waste is disposed of in a facility that will not affect the surrounding environment or post-mining land users in an adverse manner; and
- To ensure that all waste facilities and management practices meet regulatory requirements.

Targets

- Wastes will be separated at source in accordance with existing CO\_ELLEN principles and procedures to enable recycle and acceptable disposal
- The principles of reduce, reuse and recycle will be practiced; and
- Oil contaminated soils will be treated in the purpose designed land farm.

- **Heritage and Palaeontological Resources**

Objective

- To ensure that heritage resources if any are not damaged during activities associated with the closure activities.

Targets

- Ensure that the heritage resources are clearly marked on the construction, operational and decommissioning plans as no-go areas.

- **Visual**

Objectives

- To limit the visual impacts associated with mining in the open cast and underground areas; and
- To limit the visual impacts associated with the overburden and Waste rock/Top soil stockpiles.

Targets

- Ensure wherever possible that all existing natural vegetation is retained and incorporated into the closure design;
- Ensure where possible that the topsoil and overburden stockpiles are vegetated;
- Ensure that dust suppression is on-going throughout the implementation of this conceptual closure plan to reduce the visual impact to the surrounding areas; and
- Ensure that light pollution within the closure area is kept to a minimum and where possible the lighting is directed downwards and inwards so as not to illuminate the sky.

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

The environmental objectives in relation to closure will be communicated with landowner and interested and affected parties during public participation meeting.

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

The main rehabilitation/closure objective is to ensure that in the event that water quality monitoring around any Waste rock/Top soil dumps indicates that the dumps are causing pollution, catchment paddocks and soak-aways will be provided to minimize the risk of exposure to wildlife, livestock and humans. These facilities would remain in place at the permanent Waste rock/Top soil dump at closure. These closure objectives will need to consider a number of site specific criteria in order to be incorporated and actioned within a conceptual and ultimately a working closure plan.

The goal of rehabilitation with respect to the area where mining is taking place is to leave the area similar to its previous state prior mining activity. All other equipment's and material used during operation will be removed from the area, including other waste. Removal of these materials shall be done on a continuous basis and not only at the final stage of rehabilitation and closure.

- All open pits will be shaped to prevent any fauna injuries.
- Rehabilitation of mined out areas will be done immediately after each pit is finished to prevent degradation of the environment and injuries to fauna.
- Backfilling method will be used in order to make sure that the area is returned to its natural state.
- All compacted areas will be ripped to a depth of 300mm in order to allow vegetation to grow.
- Mobile equipment will be completely removed from the site
- The slope of the rehabilitated area will round and
- Waste containers will be removed from the site.

- No latent or residual impact may have encountered after completion of rehabilitation

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

The main objectives of both rehabilitation plan and closure plans are aligned. The goal of rehabilitation with respect to the area where mining took place is to leave the area to similar to its previous state prior mining. All other equipment's and material used during operation will be removed from the area, including other waste. Removal of these materials shall be done on a continuous basis and not only at the final stage of rehabilitation and closure. To achieve this, the applicant has to practice concurrent rehabilitation from the commencement of the mining activities to the end. This can be accomplished by effectively implementation of EMP. The financial provision for rehabilitation and/ or management of the negative impact will also assist to achieve the rehabilitation plan and the closure objectives.

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

| CALCULATION OF THE QUANTUM |  |           |               |                     |                               |                            |                                |
|----------------------------|--|-----------|---------------|---------------------|-------------------------------|----------------------------|--------------------------------|
| Applicant:                 | CON-ELLEN (PTY)LTD   |           |               |                     | Ref No.:                      | NC30/5/1/1/2/10544MP       |                                |
| Evaluators:                | Ndi Geological Consulting Services   |           |               |                     | Date:                         | Oct-16                     |                                |
| No.                        | Description  | Unit      | A<br>Quantity | B<br>Master<br>Rate | C<br>Multiplication<br>factor | D<br>Weighting<br>factor 1 | E=A*B*C*D<br>Amount<br>(Rands) |
| 1                          | Dismantling of processing plant and related structures (including overland conveyors and powerlines) | m3        | 0             | 12.99               | 1                             | 1                          | 0                              |
| 2 (A)                      | Demolition of steel buildings and structures   | m2        | 0             | 180.92              | 1                             | 1                          | 0                              |
| 2(B)                       | Demolition of reinforced concrete buildings and structures   | m2        | 0             | 266.61              | 1                             | 1                          | 0                              |
| 3                          | Rehabilitation of access roads   | m2        | 400           | 32.37               | 1                             | 1                          | 12948                          |
| 4 (A)                      | Demolition and rehabilitation of electrified railway lines   | m         | 0             | 295.49              | 1                             | 1                          | 0                              |
| 4 (A)                      | Demolition and rehabilitation of non-electrified railway lines                                       | m         | 0             | 314.22              | 1                             | 1                          | 0                              |
| 5                          | Demolition of housing and/or administration facilities   | m2        | 0             | 171.39              | 1                             | 1                          | 0                              |
| 6                          | <b>Opencast rehabilitation including final voids and ramps</b>                                       | <b>ha</b> | <b>0.5</b>    | <b>183565.47</b>    | <b>0.52</b>                   | <b>1</b>                   | <b>47727.0222</b>              |
| 7                          | Sealing of shafts adits and inclines   | m3        | 0             | 97.12               | 1                             | 1                          | 0                              |
| 8 (A)                      | Rehabilitation of overburden and spoils  | ha        | 0             | 126450.38           | 1                             | 1                          | 0                              |
| 8 (B)                      | Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)          | ha        | 0             | 157491.66           | 1                             | 1                          | 0                              |
| 8 (C)                      | Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)              | ha        | 0             | 457430.43           | 1                             | 1                          | 0                              |
| 9                          | Rehabilitation of subsided areas   | ha        | 0             | 105883.15           | 1                             | 1                          | 0                              |
| 10                         | General surface rehabilitation   | ha        | 0.08          | 100170.03           | 1                             | 1                          | 8013.6024                      |
| 11                         | River diversions   | ha        | 0             | 100170.03           | 1                             | 1                          | 0                              |
| 12                         | Fencing  | m         | 400           | 114.26              | 1                             | 1                          | 45704                          |
| 13                         | Water management   | ha        | 0             | 38087.46            | 1                             | 1                          | 0                              |
| 14                         | 2 to 3 years of maintenance and aftercare  | ha        | 0.5           | 13330.61            | 1                             | 1                          | 6665.305                       |
| 15 (A)                     | Specialist study   | Sum       | 0             |                     |                               | 1                          | 0                              |
| 15 (B)                     | Specialist study   | Sum       |               |                     |                               | 1                          | 0                              |
| Sub Total 1                |  |           |               |                     |                               |                            | 121057.93                      |
| 1                          | Preliminary and General  |           | 14526.95155   |                     | weighting factor 2<br>1       |                            | 14526.9516                     |
| 2                          | Contingencies  |           |               |                     | 12105.79296                   |                            | 12105.793                      |
| Subtotal 2                 |  |           |               |                     |                               |                            | 147690.67                      |
| VAT (14%)                  |  |           |               |                     |                               |                            | 20676.69                       |
| <b>Grand Total</b>         |  |           |               |                     |                               |                            | <b>168367</b>                  |

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

The applicant is hereby confirming that the financial provision to the amount of R168 367.00 will be provided as determined either by bank guarantee or cash deposit.

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

- g. **Monitoring of Impact Management Actions**
- h. **Monitoring and reporting frequency**

- i. Responsible persons
- j. Time period for implementing impact management actions
- k. Mechanism for monitoring compliance

| SOURCE ACTIVITY  | IMPACTS REQUIRING MONITORING PROGRAMMES | FUNCTIONAL REQUIREMENTS FOR MONITORING   | ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)  | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS                                      |
|--|---|--|--|---|
| Vehicular movement   | Dust                                    | <p>-Roads are sprayed by water when there is a need.</p> <p>-This impact will be monitored throughout the day and where it is encountered it will be suppressed by means of spraying water.</p> <p>-Atmospheric pollution prevention Act will be followed at all times.</p> <p>-Dust fall-out buckets are properly located and this must also be monitored throughout the day.</p> <p>-Monitoring of dust exposure will include use of active air sampling, passive dust collectors.</p> <p>-The National Environment Management: Air Quality Act, 2004 (Act No.39 of 2004) will be adhered to at all times.</p> <p>The Mine Health and Safety Act, 1996 (Act No. 29 of 1996) as amended and other legislation or regulations will also be adhered to at all times to avoid air pollution.</p> | Site manager and environmental officer   | <p>Daily and ongoing</p> <p>Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p> |
| Contamination of soil as a result of Hydrocarbons storage and refuelling point | Soil & Water pollution                  | <p>Vehicles and equipment will be monitored before the commencement of any daily Mining activity to avoid any soil contamination which may lead to ground water contamination. Surface water will be protected by adhering to The National Water Act, 1998 (Act No. 36 of 1998).</p>   | Environmental officer will be responsible for all monitoring programmes. The site manager will be responsible overall monitoring programs. | <p>Daily and ongoing</p> <p>Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p> |
| Vehicles movement  | Noise                                   | Bureau of Standards Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes,   | Environmental officer and site manager   | <p>Daily and ongoing</p> <p>Reporting will be done weekly</p> <p>Time period for implementing</p>                                   |



|                                  |  |   |  |  |
|----------------------------------|--|---|--|--|
|                                  |  | <p>SABS 083 as amended, in any place at or in any mine or works where persons may travel or work, exceeds 82 dB (A), the site manager will take the necessary steps to reduce the noise below this level. Noise monitor machine will be used to find out if the noise generated from the Mining activities is exceeding the standard. The following will be adhered to:</p> <p>a) The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) – Section 7.</p> <p>b) The Mine Health and Safety Act, 1996 (Act No. 39 of 1996) as amended.</p> <p>c) The Road Traffic Act, 1997 (Act No. 93 of 1997);</p> |  | <p>impact management is immediately.</p>   |
| Removal of vegetation and Mining | Interference with existing land use            | <ul style="list-style-type: none"> <li>-Inform landowners in writing of intent and comply with reasonable request to reduce the impact.</li> <li>-Negotiate compensation for interference with landowner/lawful occupier</li> <li>-Visual confirmation of rehabilitation</li> <li>-Approval of rehabilitation by landowner/lawful occupier</li> </ul>   | Site manager                           | <p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p> |
| Clearance of vegetation          | Vegetation loss                                | <ul style="list-style-type: none"> <li>-Site clearance to be kept to a minimum and avoid unnecessary removal of vegetation.</li> <li>-Visual inspection to make sure that vehicle utilise the existing tracks as possible.</li> <li>-No removal, disturbance or pruning of large to medium shrubs or tress</li> <li>-Visual marking of sensitive species</li> </ul>   | Environmental officer and site manager | <p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is 3 months.</p>    |
| Movement of vehicles, poaching   | Displacement, injury and death of local fauna; | <ul style="list-style-type: none"> <li>-Site clearance to be kept to a minimum</li> <li>-Visual marking of sensitive species and areas</li> <li>-Visual inspection of fencing and/or other safety measures</li> </ul>   | Site manager                           | <p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p> |

|                               |                |  |  |   |
|-------------------------------|----------------|--|--|---|
|                               |                | -On site log to be kept  |  |   |
| Waste generation and disposal | Land pollution | -Visual inspection that waste does not accumulate inside or outside drill site.<br>-All waste such as oil spills must be stored separately and disposed of at a registered facility<br>-Proof of disposal must be kept on site.<br>-EMP checklist will be compiled and utilised during the Mining period | Environmental officer and site manager | Daily and ongoing Reporting will be done weekly<br>Time period for implementing impact management is immediately. |

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

Performance assessment or environmental audit report will be submitted annually.

**m. Environmental Awareness Plan**

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

Training will be provided to all employees. Initial environmental induction and or environmental talk will be conducted before commencement of any daily activity to all employees.

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

**Everyday Awareness**

**Littering** – All workers will be educated on how important is the wild animals that can be harmed or die if they litter any garbage such as plastics for example. Littering of non-degradable wastes such as plastics, glass, rubber and tyres can also pollute our environment since they will not be decomposed. Workers will also educate to separate their waste so that they can be recycled and reused. No glass, paper, plastics and cigarette duds are to be littered during the duration of the mining operations. Marked garbage containers will be installed and maintained to prevent littering by workers. Penalties will be communicated to the worker if they do not follow the protocol with regard to littering.

**Open fires** –. It is by law that open fire is prohibited. Due to the hot and dry conditions of the district is it very susceptible for runaway fires. No open fires will be tolerated during the mining period and as this is regarded by law as a criminal offence related penalties can be issued. The littering of self-ignitable substances or objects (e.g. matches) are also not allowed as it will always pose a danger regarding field fires, and if such happen the person responsible will be charged with arson and related penalties thereof.

### **Sanitation and Personal Hygiene**

Sanitation and personal hygiene is a very important subject for environmental and social health. Improper sanitation habits can lead to intestinal parasite infestations within humans and animals, endangering the overall health of the recipients. Unfortunately, these infestations do not stay only within the host and will spread rapidly throughout a community or herd. Human viruses like Tubercle bacillus (TB) and Herpes simplex, both are very contagious, spread vigorously throughout a community not handling good hygiene habits/practices. Strict use and cleanliness of ablution facilities will be enforced during the entire life of mine. Employees will further be advised and educated on the importance of consuming clean and fresh water.

**Fauna** –Mine employees will be advised to stay clear from any wild animal or reptile and not to try and provoke them in any manner. They will further be educated on dangerous and poisonous reptiles and the actions to be taken when such reptiles are encountered. For example, as the area is characterised by Dolomite there is high possibility to encounter snakes like puff adders.

**Flora-** No indigenous shrubs or trees will be unnecessarily uprooted and utilized for firewood, the employees will rather be advised to utilize pioneer species and be educated on which plant species are indigenous, endangered or pioneer. If any pioneer species are observed the reporting thereof to the rehabilitation site manager will be highly recommended. Penalties will be given to individuals that damage any endangered species.

### **Work Related Awareness**

- When handling chemicals make sure of non-spillage procedures are followed
- Scrap must be disposed of in the most appropriate manner
- Plastics and domestic wastes removed from the vehicles need to be discarded in the appropriate manner.
- A daily checking of oil/diesel leakage before vehicle is operated.
- Drip trays must be installed under all stationary vehicles and equipment.
- Strict adherence to the Mining roads and no off-road driving to prevent trampling to the vegetation.
- Driving speed must be complied with. Beware of animals, workers and other vehicles.
- During fencing/rehabilitation common fence wires will not be left scattered as these rust over time – any cuts to animals and humans (sepsis and tetanus risk) can lead to suffering or great discomfort.
- No metals may be left scattered as it poses the same threat as described directly above.
- All personnel handling work related chemicals must follow handling procedures (Material safety data sheet)
- Any spillage contaminating the ground will pose risk to environmental degradation.
- All workers must always wear personal protective equipment (PPE) clothing at all time to reduce health and safety risk.

### **n. Specific information required by the Competent Authority (Among others, confirm that the financial provision will be reviewed annually).**

- The applicant confirms that the financial provision will be reviewed annually and the report of such review will be submitted to the competent authority.
- The performance assessment will be conducted on a monthly basis and the report will be submitted annually or if requested by DMR.

## 2) UNDERTAKING

The EAP herewith confirms

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



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Signature of the environmental assessment practitioner:

Co\_Ellen Pty Ltd

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Name of applicant:

23 November 2016

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Date:

**-END-**

## **Addendum**

**Addendum A: Environmental Authorisation Acceptance Letter**

**Addendum B: Ndi Curriculum Vitae**

**Addendum C: Public Participation Process**

**Information provided to I&AP**

**Information received from I&AP**

**Presentation**

**Addendum D: Land Claims email communication**

**Addendum E: Water Letter**

**Addendum F: Department of Environmental affairs (DENC)**

**Addendum 4: HIA**

**Addendum H: Composite Map/Final map**