

**Mining License Application:  
Wolwekop Hard Rock Quarry outside Middelburg, Eastern Cape.**

**ENVIRONMENTAL MANAGEMENT PROGRAMME**

**Prepared for:**



**C/O Arcus Gibb**  
PO Box 19844  
Tecoma  
5241

**Prepared by:**



**Coastal & Environmental Services**  
EAST LONDON  
2 Marine Terrace, Hampton Court  
East London, 5201  
043 742 3302  
*Also in Grahamstown*  
[www.cesnet.co.za](http://www.cesnet.co.za)

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## GLOSSARY OF TERMS

In this document the following words and expressions shall have the meanings hereby assigned to them. The definitions contained within this document are for explanatory purposes only. In the event that any conflict occurs between the definitions contained herein and those contained within the final Contract, those within the Contract shall prevail.

**Alien Vegetation:** Alien vegetation is defined as undesirable plant growth which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

**Developer:** The developer is the entity responsible for the development.

**Contaminated Water:** Water contaminated by the Quarry Operators' activities e.g. water containing cement and runoff from plant/personnel wash areas.

**Construction Activity:** A construction activity is any action taken by the Quarry Operator, his subcontractors, suppliers or personnel during the construction process.

**Construction Camp:** Construction camp (site camp) refers to all storage and stockpile sites, site offices, container sites, workshops and other areas required to undertake construction activities.

**Construction Manager:** The Construction Manager (CM).

**Environmental Management Programme:** The Environmental Management Programme (EMPr) provides specific environmental guidance for the construction and operation of the quarry in use for the N9 Road Upgrade. The EMPr consists of both a management system and environmental specifications which contain detailed specifications that need to be undertaken or adhered to by the Quarry Operator. Two types of specifications need to be complied with by the Quarry Operator namely; standard and specific. Standard specifications apply to all project components and specific specifications outline specific instructions for managing and minimising environmental impacts resulting from the actual activity.

**Quarry Operator(s):** Any firm or individual contracted by, or on behalf of the South African National Road Ltd. to perform services or provide goods to the mining operations associated with the N9 Road Upgrade and who has a presence on site and shall include any Quarry Operator, subcontractors and suppliers.

**Environment:** The surroundings within which humans exist and that are made up of:

- The land, water and atmosphere of the earth
- Micro-organisms, plant and animal life
- Any part or combination of i) and ii) and the interrelationships among and between them
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

**Environmental Control Officer (ECO):** A suitably qualified person contracted by the developer tasked with monitoring the environmental performance and compliance of Quarry Operators involved in the construction of the development. The ECO's duties shall include inter alia:

- Monitoring all activities relating to the project, on a monthly basis (or as agreed), for compliance with the provisions of environmental legislation and recommendations of the EMPr;
- Conducting monthly environmental performance audits in respect of the activities undertaken relating to the project.

**Environmental Impact:** An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

**Environmental Management System:** The internationally accepted and recognized environmental management system (EMS) which enables companies, organizations and operations to systematically manage, prevent and reduce environmental problems and associated costs. In terms of ISO 14001 an EMS is defined as, “that part of the overall management system includes organizational structure, planning activities, responsibilities, procedures, processes and resources for developing, implementing, reviewing and maintaining the environmental policy.”

**Environmental Policy:** A statement by the organisation of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.

**Environmental Site Officer:** An Environmental Site Officer (ESO) is the site-based designated person responsible for implementing the environmental provisions of the Construction Contract and is appointed by the service provider that carries out construction activities. The ESO shall record and communicate environmental issues (as they occur) to the Quarry Operator and maintain records thereof. The ESO shall report concurrently to the Quarry Operator and the ECO.

**Method Statement:** A written submission by the Quarry Operator to the Quarry Manager in response to the specification, or as requested by the QM, setting out the plant, materials, labour and method the Quarry Operator proposes to use to carry out an activity.

**Material Safety Data Sheets (MSDS):** A form containing data regarding the properties of a particular substance. An important component of product stewardship and workplace safety, it is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill handling procedures.

**Mitigate:** The implementation of practical measures to reduce the adverse impacts, or to enhance beneficial impacts of a particular action.

**Pollution:** According to the National Environmental Management Act, No. 107 of 1998 and amended in 2010, pollution can be defined as, “Any change in the environment caused by (i) substances; (ii) radioactive or other waves; or (iii) noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future”

**Potentially Hazardous Substance:** A substance which, in the reasonable opinion of the Quarry Manager or ECO, can have a deleterious effect on the environment.

**Restoration:** The process of reconstituting a degraded system to its original state.

**Replacement:** The establishment of a different type of vegetation on the degraded environment following construction, for example agriculture.

**Re-vegetation:** The physical process of establishing a vegetation cover.

**Rehabilitation:** A general term that encompasses the three processes, restoration, replacement and re-vegetation, and is the process or programme implemented to achieve restoration or replacement.

**Site:** The area in which construction is taking place.

**Solid Waste:** Refers to all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

**Species of Special Concern:** Those species listed in the Rare, Indeterminate, or Monitoring categories of the South African Red Data Books, and/or species listed in Globally Near Threatened, Nationally Threatened or Nationally Near Threatened categories (Barnes, 1998).

**Threatened species:** Threatened species are defined as: (a) species listed in the Endangered or Vulnerable categories in the revised South African Red Data Books or listed in the Globally Threatened category; (b) species of special conservation concern (i.e. taxa described since the relevant South African Red Data Books, or whose conservation status has been highlighted subsequent to 1984); (c) species which are included in other international lists; or (d) species included in Appendix 1 or 2 of the Convention of International Trade in Endangered Species (CITES).

**Topsoil:** Means the top 100mm of soil and may include top material e.g. vegetation and leaf litter.

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# 1 INTRODUCTION

## 1.1 Current Environmental authorisation in South Africa

The current application is for a hard rock quarry larger than 1.5 hectares in terms of the Mineral and Petroleum Resources Activity Act, 2002 (Act 28 of 2002) (MPRDA).

The overarching principles for Environmental management are however contained in NEMA and as such, the guidelines as set out in GN.R 543 were applied for this Report.

## 1.2 Details and Expertise of Environmental Assessment Practitioner (EAP)

**Dr Alan Carter**, as Director of the East London Office, Alan has extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He is a member of the American Institute of Certified Public Accountants and holds a PhD in Plant Sciences. He is also a certified ISO14001 EMS auditor with the American National Standards Institute and the British Standards Institute.

**Mr Roy de Kock** holds a BSc Honours in Geology and an MSc in Botany from the Nelson Mandela Metropolitan University in Port Elizabeth. His MSc thesis focussed on Rehabilitation Ecology with the focus on Mine Rehabilitation. He has been working for CES since 2010, and is based at the East London branch where he focuses on ecological impact assessments, geological and hydro geological analysis, environmental management plans and various environmental impact studies.

## 1.3 Details of the proponent

<b>The Proponent:</b>	South African National Roads Agency Ltd. (SANRAL)
<b>Name of person:</b>	Mr. Isak Botha
<b>Name of mine:</b>	Wolwekop Quarry
<b>Physical address:</b>	SANRAL House, 70 2 <sup>nd</sup> Avenue, Newton Park, Port Elizabeth
<b>Postal address:</b>	PO Box 27230, Greenacres, Port Elizabeth 6057
<b>Telephone number:</b>	(041) 398 3200
<b>Fax number:</b>	(041) 398 3222
<b>Location of Quarry:</b>	31° 22.477'S; 25° 0.952'E
<b>Located within:</b>	Inxuba Yethemba Local Municipality Chris Hani District Municipality Eastern Cape Province

## 1.4 Relevant Authorities

### Department of Mineral Resources - Port Elizabeth

Postal Address:	Private Bag X 6076 PORT ELIZABETH 6000
Physical Address:	C/o of Mount Road and Diaz, Mount Croix, PORT ELIZABETH
Telephone number:	(041) 396 3900
Fax number:	(041) 373 8171



## **2 BACKGROUND INFORMATION**

### **2.1 Introduction**

SANRAL is proposing to upgrade 23 kilometres of the N9 National Road between Middelburg and Carlton Heights in the Eastern Cape.

CES is also in the process of submitting an Environmental Authorization in terms of NEMA (National Environmental Management Act) for the road upgrade to the Department of Environmental Affairs (DEA). The current application to the Department of Mineral Resources (DMR) relates to the establishment of a rock quarry in order to supply the road upgrade with the necessary rock and other material. The selected site for the quarry is an existing quarry site that was used by the South African Roads Department in the early 1970-1980's (possibly even earlier) during construction of the N9 and N10 in the area.

As agreed with the DMR, the current report covers the following:

- Environmental Management Programme (EMPr)

As SANRAL is a State Road authority, and as such is exempted from submitting a Scoping Report, the process does not include an Environmental Impact Assessment Scoping Report.

The floristic diversity was assessed and the identification of potential fatal flaws was determined and recommendations were made concerning from an environmental and ecological perspective.

The road upgrade will create empowerment and development of the local community through the creation of sustainable infrastructural services and facilities. It is expected the proposed road upgrade will provide job creation, training and skills development of local community.

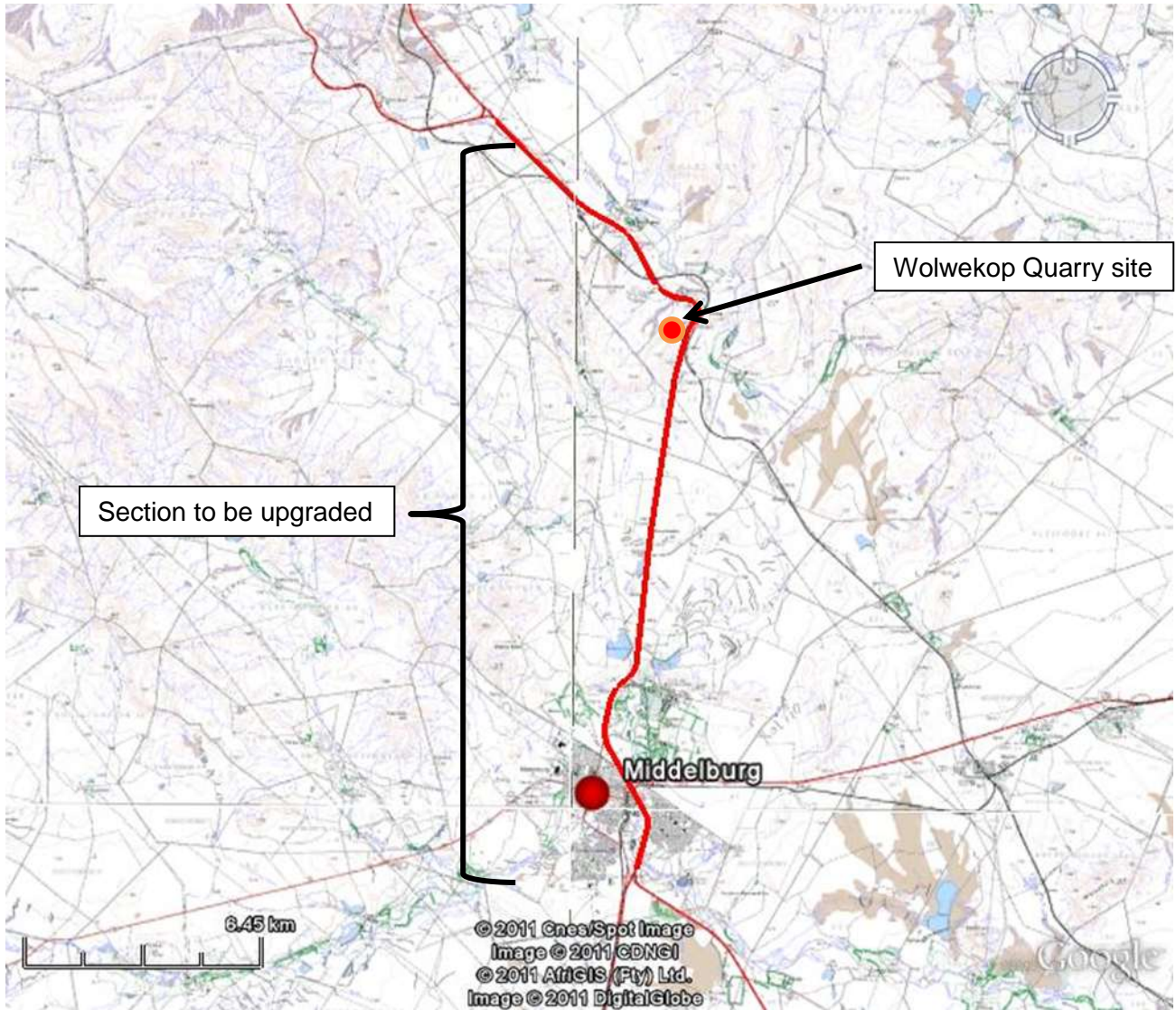


Figure 2.1. Map indicating the road to be upgraded between Middelburg and Carlton Heights, and the location of the proposed quarry site.

## 2.2 Scope and content

The scope and content of the current report, relating to authorization for a rock quarry, is primarily guided by the requirements in terms of the Mineral & Petroleum Resources Development Act of 2002 (MPRDA), and in particular, the following sections:

### 39. Environmental management programme and environmental management plan

#### Mining right (license)

(1) Every person who has applied for a mining right in terms of section 22 must conduct an **environmental impact assessment** and submit an **environmental management programme** within 180 days of the date on which he or she is notified by the Regional Manager to do so.

#### Scope and content of EMPr

(3) An applicant who prepares an environmental management programme or an environmental management plan must:

(a) Establish **baseline information** concerning the affected environment to determine protection, remedial measures and environmental management objectives;

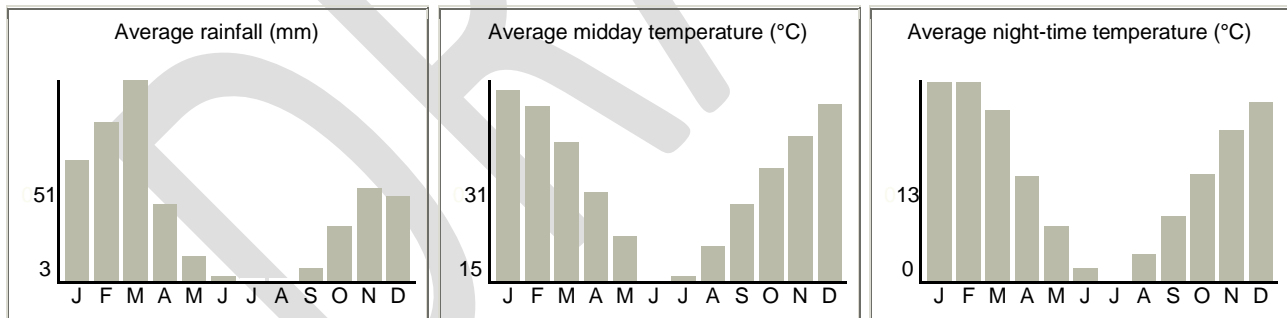
- (b) **Investigate, assess and evaluate the impact** of his or her proposed prospecting or mining operations on:
- (i) The environment;
  - (ii) The socio-economic conditions of any person who might be directly affected by the prospecting or mining operation; and
  - (iii) Any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act;
- (c) Develop an **environmental awareness plan** describing the manner in which the applicant intends to inform his or her employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment; and
- (d) Describe the manner in which he or she intends to:
- (i) Modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
  - (ii) Contain or remedy the cause of pollution or degradation and migration of pollutants; and
  - (iii) Comply with any prescribed waste standard or management standards or practices.

## 2.3 Baseline information

### 2.3.1 Biophysical environment prior to mining

#### Climate

The area normally receives about 234mm of rain per year, with most rainfall occurring mainly during autumn. The chart below (lower left) shows the average rainfall values for Middelburg per month. It receives the lowest rainfall (3mm) in July and the highest (51mm) in March. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures range from 15.3°C in June to 30.2°C in January. The region is the coldest during July when temperatures drop to 0.2°C on average during the night.



**Figure 2.2. Showing average rainfall and temperature variation over a 12 month period.**

#### Geology and Soils

The study area falls within the Main Karoo Basin which signifies a large scale basin that was infilled with up to 12 km of sedimentary strata and capped by a 1.4 km thick unit of basaltic lava (today the remnants of the lava layer is called the Drakensberg Mountain).

More locally the rocks consist of a sandstone-rich layer called the Katberg Formation, although there are some mudstones present, increasing slightly towards the north. Intraformational mud-pellet conglomerates are common, with red coloured mudstone units and predominant arenaceous sandstones.

Intruding through all the sediment layers are dolerite dykes and sills of various sizes.

## **Flora**

Vegetation types found in the area includes Eastern Upper Karoo vegetation and Tarkastad Montane Scrubland. Over 95% of the affected and surrounding area makes up Eastern Upper Karoo vegetation that consists of gently sloping plains dominated by dwarf microphyllous scrubs and 'white' grasses of the genera *Aristata* and *Eragrostis*. Tarkastad Montane Scrubland is found on ridges and hills characterised by high surface rock cover. The vegetation is low, semi-open mixed scrubland with grasses and dwarf scrubs. Both vegetation types are considered **Least Threatened** by SANBI.

## **Fauna**

Faunal populations along the proposed road upgrade are limited. No endemic or threatened species were observed.

## **Palaeontological/Archaeological/Cultural Heritage**

A heritage assessment has been carried out for the quarry (Appendix B).

## **Sensitive Landscapes**

No sensitive landscapes of conservation areas have been identified within 1km of the road upgrade or the Wolwekop quarry site.

### ***2.3.2 Socio-economic environment***

## **Demographics**

The proposed project is located in the Inxuba Yethemba Local Municipality, formerly known as Cradock Local Municipality, which is a local municipality in Chris Hani District Municipality, Eastern Cape Province.

## ***Population***

The most recent population data for Inxuba Yethemba LM is provided by Statistics SA Community Survey 2007 data. Based on these data, the population in 2007 was determined to be about 48,000 with 40% of the population under the age of 19 years.

## ***Settlements***

The Inxuba Yethemba LM is categorised by the following settlement patterns:

- Urban settlement
- Scattered Peri-Urban and Rural settlements
- Rural/Agriculture areas

The vast majority of people (92%) live in of households described as "brick houses on separate stands" with most of the remainder (7%) living in "flats, townhouses, etc."

## ***Income and poverty levels***

The Inxuba Yethemba LM is characterised by poor socio economic conditions and low levels of development which is not an uncommon trend in the region.

It is evident that a significant number of people in the age group 15 – 65), receive no income (45%) while about 70% receive an income of less than R1, 600 per month.

## ***Employment***

In terms of employment data for Inxuba Yethemba LM, a significant proportion of "potentially employable" people are unemployed (23%).

**Economic Activity**

The predominant employment sector in the Inxuba Yethemba LM includes agriculture (6%), manufacturing (4%), wholesale and retail (5%) and community services (9%).

**2.4 Hard Rock Quarry**

The Wolwekop quarry has been in use for some time (around 30 years), although it is now abandoned (see figure table below). There are existing buildings and loading infrastructure on the site that may be used again. The entire Wolwekop Hill has been severely disturbed.

The presence of steep slopes (90°) and unfilled holes allowed surface water to accumulate onsite in large volumes. This water will need to get pumped out before mining can proceed.

There is also a well maintained access gravel road to the site with a locked gate. This road crosses the Wolwekop Stream once before reaching the quarry site 1km further. The whole site is fenced in.

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Figure 2.3. Google Earth aerial photo of the proposed Wolwekop quarry site. The mined out areas can be clearly seen as well as the access road that connects the quarry site to the N9.



**Figure 2.4. Edited photos of the whole Wolwekop quarry site**



**Figure 2.5. Various views of the Quarry site showing water filler holes on site**



Figure 2.6. Existing infrastructure



Figure 2.7. Surface condition of the access road to the quarry site





**Figure 2.8. Access road bridge over the Wolwekop Stream**

## 2.5 Quarry design criteria

It should be noted that the design of the quarry (as seen in Figure 2.7) has been informed by the following criteria, which are seen as an essential prerequisite to the EMPr (see Box 2.1).

### **Box 2.1. Criteria for the quarry design (per CES)**

- 1) This drawing (Figure 2.10.) shall be read and implemented in conjunction with the requirement of the EMPr for the quarry.
- 2) All topsoil shall be cleared from the quarry, stockpile, crushing and access road areas and stockpiled and maintained in heaps not exceeding 2m in height.
- 3) No fauna or flora shall be removed without prior authorization.
- 4) All haul roads and stockpile areas shall be rehabilitated as per the EMPr including the ripping of compacted areas, covering with the available topsoil and revegetation.
- 5) Some of the overburden stockpiled and any oversize material generated during the mining phase shall, on completion of the mining, be placed in the floor of the quarry so that the floor drains through the excavated outlet, or placed and compacted on the sides of the quarry to flatten the slopes. The slopes and the floor shall be covered with the available topsoil and re-vegetated.
- 6) On site sanitation shall be provided in accordance with the EMPr.
- 7) Dust suppression measures shall be implemented in the mining, crushing, hauling and stockpiling areas.
- 8) The perimeter fencing shall be standard stock-proof fencing which shall be maintained at all times.
- 9) Twenty-four hour controlled access shall be maintained at all access points to the mining and stockpile areas.
- 10) No personnel shall be housed on site and no fires are permitted on the site.
- 11) Provision for diesel storage on site shall be made including all necessary approvals and risks according to the EMPr.

## 2.6 Quarry size

The proposed quarry comprises the following elements:

Activity	Area (m <sup>2</sup> )
Quarry	164 250
Overburden stockpile	7 029
Crusher site, offices and ablutions	2 000
Stone stockpile (adjacent to road)	33 390
Topsoil stockpile	4 632

Approximately 11 661 m<sup>3</sup> of topsoil and overburden will be taken off the top of the quarry site. The overburden is expected to have an average depth of 2 m and is to be stockpiled adjacent to the quarry excavation. The quarry should yield approximately 300 000m<sup>3</sup> of hard rock for crushing and 250 000 m<sup>3</sup> of G6/G7 and fill material.

After mining has been completed, all the overburden and any surplus oversize rock material will be used to fill the excavation and level the slopes.

## 2.7 Vegetation type

The quarry site is situated in Eastern Upper Karoo Vegetation (Figure 2.9, Mucina & Rutherford 2006). The general landscape consists of flats and gently sloping grassland plains interspersed with scrubland, and are considered **LEAST THREATENED** by SANBI.

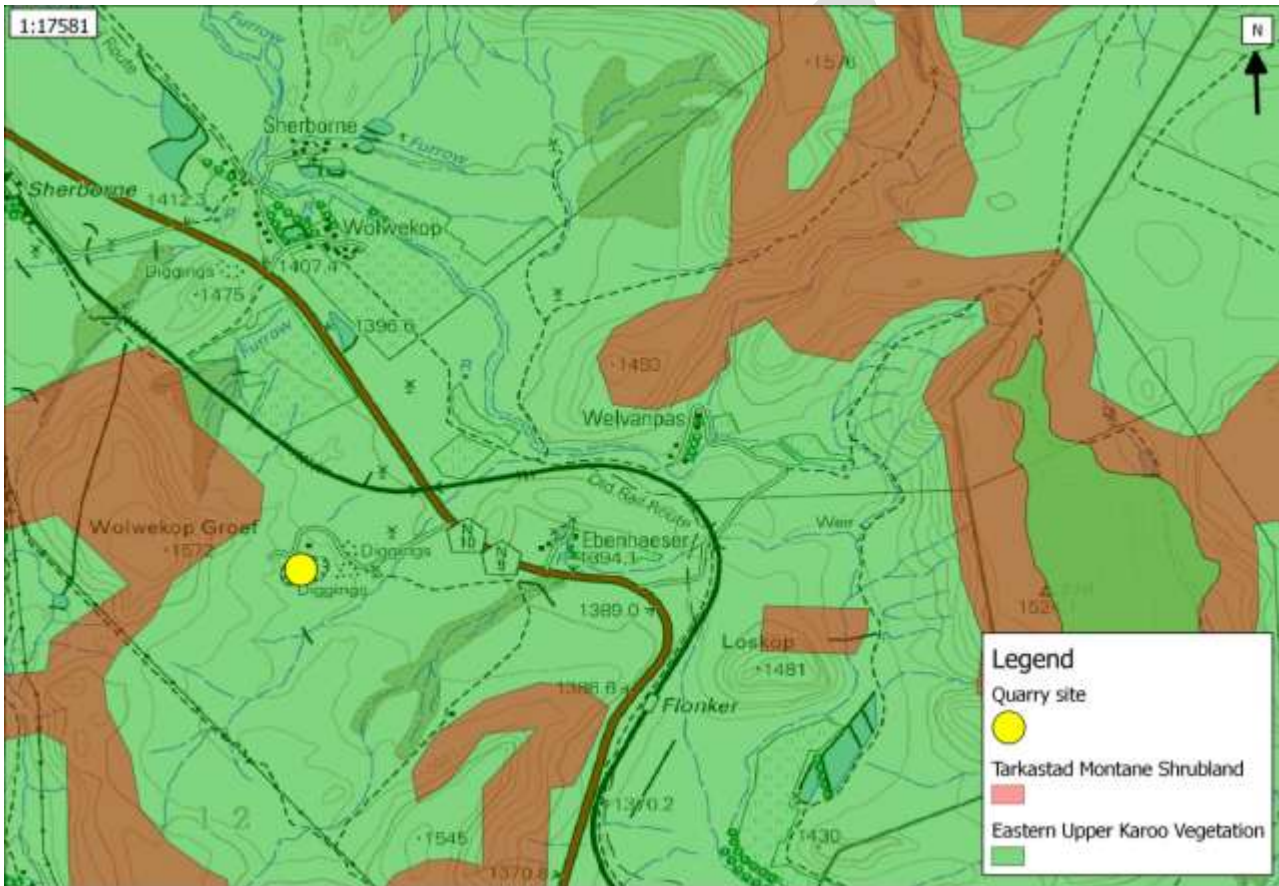


Figure 2.9. Vegetation map of the proposed quarry site and surrounding environment.

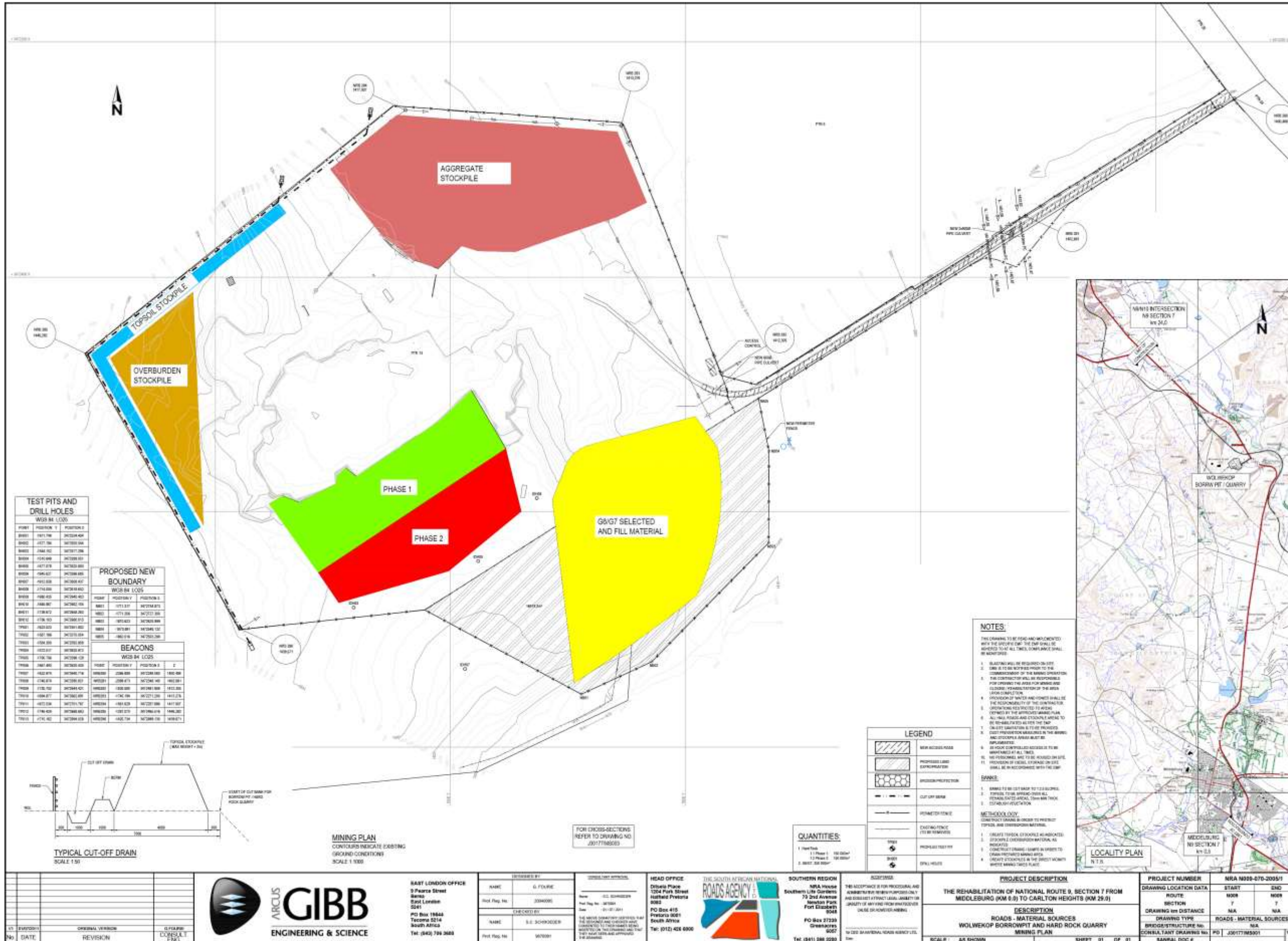


Figure 2.10. Quarry Plan for the Wolwekop quarry.

### **3 INTRODUCTION TO THE EMPr FOR THE HARD ROCK QUARRY**

The current section of the report assesses the environmental impacts associated with the proposed Hard Rock Quarry for the Middelburg N9 upgrade.

This EMPr forms part of a road upgrade, in which mining activities only form one part. The impacts discussed in this section are those arising from mining and processing activities during the life of the hard rock quarry needed for the Middelburg N9 upgrade.

#### **3.1 Approach**

For the purposes of assessing impacts, it is convenient to divide the mining or rock quarrying activity into the following four main phases:

##### **Planning and design phase**

This phase comprises determining site location and assessing the site selection against various criteria.

##### **Construction phase**

This phase comprises the setting up of the quarry as well as the land clearing, and building of necessary ancillary structures including workshops and roads.

##### **Operational phase**

This phase is the actually lifespan of the quarry, the phase in which the rock is removed.

##### **Closure or decommissioning phase**

This phase is the rehabilitation phase of the project, when the hard rock quarry are no longer in use.

#### **3.2 Environmental impacts**

Potential environmental impacts were identified based on various sources. These included:

- Site assessments
- Knowledge of mining operations
- Issues raised by Interested and Affected Parties (I&APs) during the Basic Assessment process (refer to Appendix E)

Impacts identified included:

##### **Planning and design phase**

- Impacts associated with planning and designing the quarry, such as determining site location, resource size, proximity to usage, etc, and include:
- Compliance with relevant policy and legislation
- Design of quarry
- Location of quarry, to avoid:
  - Sites of archaeological and cultural significance
  - Sensitive landscapes
- Visual aspects
- Regional socio-economic aspects
- Geology – loss of non-renewable resources
- Topography - disturbance of the topography of the quarry area.
- Impacts on natural fauna and flora

**Construction phase**

- Impacts associated with setting up the quarry, and include:
- Location of sanitation facilities
- Demarcation of quarry site
- Removal and stockpiling of overburden
- Noise due to operation of machinery
- Compliance with EMPr
- Identification of archaeological artefacts during construction
- Impacts on natural fauna and flora
- Management of waste

**Operational phase**

- Impacts associated with the actual rock quarrying activities, and include:
- Pollution of surface and ground water
- Quality of air due to dust, fires, etc.
- Noise due to operation of machinery
- Sites of archaeological and cultural significance
- Compliance with EMPr
- Identification of archaeological artefacts during operations
- Impacts on natural fauna and flora
- Management of waste

**Closure or decommissioning phase**

- Impacts associated with closure of the site after mining has terminated, and includes:
- Residual impacts such as pollution of surface and ground water
- Failure to properly rehabilitate site
- Compliance with EMPr

**3.3 Assessment of impacts**

The significance of impacts was assessed based on the significance rating scale described below:

Overall Significance (The combination of all the above criteria as an overall significance)	
VERY HIGH NEGATIVE	VERY BENEFICIAL
<p>These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or social) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.</p> <p>Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.</p> <p>Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.</p>	
HIGH NEGATIVE	BENEFICIAL
<p>These impacts will usually result in long term effects on the social and/or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.</p> <p>Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.</p> <p>Example: The change to soil conditions will impact the natural system, and the impact on affected parties (such as people growing crops in the soil) would be HIGH.</p>	
MODERATE NEGATIVE	SOME BENEFITS
<p>These impacts will usually result in medium to long term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by society as constituting a</p>	

fairly important and usually medium term change to the (natural and/or social) environment. These impacts are real but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

**LOW NEGATIVE**

**FEW BENEFITS**

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people who live some distance away.

**NO SIGNIFICANCE**

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a particular formation may be regarded as severe from a geological perspective, but is of NO significance in the overall context.

**DON'T KNOW**

In certain cases it may not be possible to determine the significance of an impact. For example, the primary or secondary impacts on the social or natural environment given the available information.

Example: The effect of a particular development on people's psychological perspective of the environment.

**3.4 Alternatives**

No other alternative sites are considered.

**3.5 Public Participation**

A public participation process in terms of *Regulation 54 GN 543* was conducted for the road upgrade, and quarry site (see Appendix E for information gathered during the Basic Assessment process).

The public participation process included the following elements:

- Advertisement
- Comments and response reporting
- Local authority participation
- Consultation with other stakeholders
- Background information document preparation

## 4 ENVIRONMENTAL IMPACT ASSESSMENT

For the purposes of the current mining applications, the assessment of identified impacts was taken into consideration for the planned quarry development and rehabilitation.

### 4.1 Planned quarry development

The following information relates to the planned quarry development and rehabilitation and is relevant to assessing the likely severity of impacts (assuming that the proposed design and remediation programme are adhered to).

#### 4.1.1 Planned quarry development

The proposed quarry comprises the following elements:

Activity	Area (m <sup>2</sup> )
Quarry	164 250
Overburden stockpile	7 029
Crusher site, offices and ablutions	2 000
Stone stockpile (adjacent to road)	33 390
Topsoil stockpile	4 632

Approximately 11 661 m<sup>3</sup> of topsoil and overburden will be taken off the top of the quarry site. The overburden is expected to have an average depth of 2 m and is to be stockpiled adjacent to the quarry excavation. The quarry should yield approximately 300 000m<sup>3</sup> of hard rock for crushing and 250 000 m<sup>3</sup> of G6/G7 and fill material.

### 4.2 Planned rehabilitation

Rehabilitation has been divided into two sections namely on-going rehabilitation and final rehabilitation.

#### 4.2.1 On-going rehabilitation

This refers to rehabilitation guidelines during the active phase of the quarry. Here 'active' refers to the potential mining period of the site when hard rock will be removed.

The key objectives of on-going rehabilitation will be to ensure that impacts are minimised that may have a negative influence on the surrounding area during the lifespan of the quarry. This includes storm water management, slope stabilising, safety issues and alien vegetation monitoring.

The following rehabilitation plan will be undertaken during the mining phase:

1. Ensure that storm water flows away from the mining site by diverting flow from high rising areas away from the steep cliff mining face.
2. Avoid surface erosion by creating berms and/or trenches. These structures must be made on the edge of the mined out area to deflect stormwater and prevent tunnelling below. The trenches must be approximately 10m apart. These trenches must slope gradually (3-5°) to the level of the quarry floor.
3. Stabilise slopes to avoid rock fall. As this is a hard rock quarry with highly weathering resistant rocks, slope angles are not specified.
4. Fence the whole site off and limit access with a controlled access point (locked gate).

#### **4.2.2 Final rehabilitation**

Complete rehabilitation of the site will only commence when the whole Wolwekop Hill has been mined out. This is when the site will be restored to as natural a state as possible by filling the void with overburden, replacing the original topsoil, planting the areas with indigenous vegetation and removing all building footprints (debris etc.) from the site.

Sheep should not be allowed to graze extensively in the areas of the quarry and therefore fencing of the rehabilitated areas will be necessary.

The following rehabilitation plan will be undertaken at the end of the mining phase:

1. Fill all holes with soil. Ensure slopes are less than 25°.
2. Berms and/or trenches must be made on the edge of the mined out area to deflect stormwater and prevent tunnelling below. The trenches must be approximately 10m apart. These trenches must slope gradually (3-5°) to the level of the quarry floor.
3. Remove all existing infrastructure (buildings, debris, etc.)
4. Revegetate the area with natural grasses. Planting should be done in the rainy season.
5. Ensure that the site is fenced off and unauthorised access is limited (with locked gates).

#### **4.3 Impact assessment**

The following table assesses the significance of the impacts identified and makes recommendations for reducing impact significance:

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Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
<b>Planning and design phase</b>				
Compliance with relevant policy and legislation	The activity must comply with relevant mining policy and legislation	HIGH NEGATIVE	<ul style="list-style-type: none"> <li>– Ensure all activities comply with the Mineral and Petroleum Resources Development Act 28 of 2002.</li> <li>– Appoint an ECO to monitor compliance with legislation and policy and with the approved EMPr</li> </ul>	MODERATE NEGATIVE
Design of quarry	An inappropriately designed quarry can lead to subsidence, face collapses and erosion.	HIGH NEGATIVE	<ul style="list-style-type: none"> <li>– Quarry must be designed by an appropriately qualified engineer.</li> </ul>	MODERATE NEGATIVE
Sites of archaeological and cultural significance	Possible loss of sites of archaeological and cultural significance.	LOW NEGATIVE	<ul style="list-style-type: none"> <li>– Refer to Heritage Survey by Umlando in Appendix B.</li> <li>– The Wolwekop quarry has been in use for some time although it is currently abandoned. All of the buildings indicate that the quarry is not over 60 years in age. The entire hill has been severely disturbed. Three Late Stone Age stone tools were observed on the hill. Thus the area would have been an archaeological site in the past. Only this specific hill was surveyed. If the quarry extends beyond this hill, then it will need to be surveyed.</li> </ul>	LOW NEGATIVE
Sensitive landscapes	Mining activities could impact on sensitive landscapes.	LOW NEGATIVE	<ul style="list-style-type: none"> <li>– An appropriate mining rehabilitation plan must be implemented</li> </ul>	LOW NEGATIVE
Access road and bridge maintenance	Existing gravel road crossing the Wolwekop Stream may lead to blocking water flow after a while	HIGH NEGATIVE	<ul style="list-style-type: none"> <li>– Ensure that the road and bridge is maintained and inspected on a regular basis.</li> </ul>	MODERATE NEGATIVE
Removing surface water from the quarry site	Possible erosion from incorrect methods used when pumping surface water from the mined area.	MODERATE NEGATIVE	<ul style="list-style-type: none"> <li>– Water must be pumped to a site where it will not negatively influence the natural environment through erosion of permanent flooding, possibly the Wolwekop Stream to the east.</li> </ul>	LOW NEGATIVE
Regional socio-	The quarry will provide some job	MEDIUM	NONE	MODERATE

Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
economic aspects	opportunities until it is closed	POSITIVE		POSITIVE
Geology – loss of non-renewable resources	Mining will affect the geology of the mined area. The whole Wolwekop Hill will be potentially mined, and the impact will be permanent.	MODERATE NEGATIVE	– An appropriate mining rehabilitation plan must be implemented.	LOW NEGATIVE
Topography - disturbance of the topography of the quarry area.	The mining method will result in a complete disturbance of the topography of the quarry area. A basin will be left, but filled as far as possible with overburden	MODERATE NEGATIVE	– An appropriate mining rehabilitation plan must be implemented	MODERATE NEGATIVE
Land use and land-use capacity	Loss of land for grazing and other community usage (possible recreational use). The land is largely unmanaged. The Hill itself is highly degraded, while the surrounding environment is considered natural.	MODERATE NEGATIVE	– Land use will be returned to its previous state after completion of mining.	LOW NEGATIVE
Impacts on natural flora	Mining the quarry site will result in the loss of flora	MODERATE NEGATIVE	– The area being mined is relatively small and mitigation measures in the form of rehabilitation must ensure the return of the vegetation into its natural state.	LOW NEGATIVE
Impacts on natural fauna	Associated activities e.g. transport of material, may result in occasional animal road fatalities.	LOW	NONE	LOW

Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
<b>Construction phase</b>				
Location of sanitation facilities	Inappropriate siting of sanitation facilities can result in contamination of surface and ground water.	MODERATE NEGATIVE	<ul style="list-style-type: none"> <li>– Ensure that sanitation facilities are NOT located near any water resources or water drainage areas.</li> <li>– Latrines must be emptied regularly</li> </ul>	LOW NEGATIVE
Demarcation of quarry site	Inaccurate marking out of quarry site can result in uncontrolled and greater than anticipated damage to the local environment	MODERATE NEGATIVE	<ul style="list-style-type: none"> <li>– Quarry and areas ancillary activities must be clearly demarcated.</li> </ul>	LOW NEGATIVE
Compliance with construction component of the EMPr	Risks associated with Quarry Operator not complying with the EMPr	HIGH NEGATIVE	<ul style="list-style-type: none"> <li>– Contract to include requirements in terms of the approved EMPr and must abide by the EMPr.</li> <li>– Appointment of an ECO to ensure EMPr is adhered to.</li> </ul>	MODERATE NEGATIVE
Identification of archaeological material and sites during construction	There is the potential for archaeological material and sites being uncovered during construction. Although no archaeological material and sites were observed and documented it is therefore highly unlikely that any archaeological material or sites would be uncovered during the construction activities	LOW NEGATIVE	<ul style="list-style-type: none"> <li>– If any concentration of heritage material (including graves, burials or human remains) are uncovered during construction, it should be reported to the South African Heritage Resources Agency immediately so that systematic and professional investigation/excavations can be undertaken. Sufficient time should be allowed to remove/collect such material.</li> <li>– It is recommended that any graves found should be fenced off to protect it against possible damage during the development.</li> </ul>	LOW NEGATIVE

Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
<b>Operational phase</b>				
Pollution of surface and ground water	Runoff from the mining activities is expected. If left unmitigated, runoff can impact on the surface water quality and cause erosion.	MODERATELY NEGATIVE	– Water runoff must be controlled and a storm water plan implemented.	LOW NEGATIVE
	Mining and the processing activities could impact on the ground water quality and quantity.	LOW NEGATIVE	– Water runoff must be controlled and a storm water plan implemented.	LOW NEGATIVE
	Pollution of surface and ground water may occur from run-off from equipment and machinery maintenance and storage areas.	HIGH NEGATIVE	– ALL equipment and must be stored in a specified area. – All oils, diesel fuel and other maintenance equipment and supplies must be stored in a secure area with compacted surface. – Appropriate facilities must be provided for maintenance waste (e.g. used oils, etc.) which must be taken off-site and disposed of in an appropriate manner. – There must be NO burying or burning of any waste on site. – An ECO must carefully monitor equipment and machinery maintenance and storage activities.	MODERATE NEGATIVE
Quality of air due to dust, fires, etc.	The hard rock quarry: Air quality is affected by mining, as dust is generated. This occurs on a localised scale, and represents a short to medium term impact, since dust is only generated during windy conditions.	LOW NEGATIVE	– Conduct dust suppression when appropriate, using water or other appropriate eco-friendly product. – Monitor dust emissions.	LOW NEGATIVE
	Un-surfaced roads generate dust, which is caused by vehicle traffic. This	LOW NEGATIVE	NONE	LOW NEGATIVE

Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
	is a localised impact			
	Burning of waste on site can result in air quality impacts.	HIGH NEGATIVE	– There must be NO burning of any waste on site	LOW NEGATIVE
Noise due to operation of machinery and blasting	Noise will be generated during mining (especially when blasting).	LOW NEGATIVE	– Limit mining blasting to normal working hours (8 AM to 5 PM)	LOW NEGATIVE
Identification of archaeological material and sites during operational phase	There is the potential for archaeological material and sites being uncovered during operational phase	LOW NEGATIVE	– As above for construction	LOW NEGATIVE
Compliance with EMPr	Risks associated with Quarry Operator not complying with the EMPr	HIGH NEGATIVE	– Contract to include requirements in terms of the approved EMPr and must abide by the EMPr	MODERATE NEGATIVE
Impacts on natural fauna and flora	Encroachment into areas of fauna and flora	MODERATE NEGATIVE	– Surveyed mining area must be demarcated and no excavation to go beyond demarcated area.	LOW NEGATIVE

Issue	Impact	Significance pre mitigation	Mitigation measure	Significance post mitigation
<b>Closure or decommissioning phase</b>				
Impacts associated with closure of the site after mining has terminated	Risks associated with: Non-compliance with legislation and closure requirements of EMPr. Residual impacts such as pollution of surface and ground water. Failure to properly rehabilitate site and refilling of site with water.	HIGH NEGATIVE	<ul style="list-style-type: none"> <li>– Ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.</li> <li>– Contract to include requirements in terms of the approved EMPr and must abide by the EMPr.</li> <li>– Ensure the site is contoured and covered with locally occurring indigenous vegetation (grasses only).</li> <li>– Ensure the closed quarry poses no safety risks.</li> </ul>	MODERATE NEGATIVE

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## 5 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

### 5.1 INTRODUCTION TO THE EMPr

The purpose of the Environmental Management Programme (EMPr) is to provide, based on the assessment of potential environmental impacts, specifications for "good environmental practice" into a contractual environmental specification for application of the Wolwekop hard rock quarry on the N9 road upgrade between Middelburg and Carlton Heights in the Eastern Cape.

The EMPr provides specifications that the Quarry Operator shall adhere to, in order to minimise adverse environmental impacts associated with construction and quarry activities. The provisions of this EMPr must be binding on the Quarry Operator and quarry operator during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract.

**In the event that any conflict occurs between the terms of this EMPr and the project specifications, the terms herein shall be subordinate.**

This EMPr has been designed to suite the particular activities and needs of Wolwekop hard rock Quarry for the N9 road upgrade, and incorporates the following:

- General mining mitigation measures, and;
- Specific project mitigation measures;

The EMPr therefore identifies the following:

- Mining/quarry activities that will impact on the environment;
- Specifications with which the quarry operator shall comply in order to protect the environment from the identified impacts, and;
- Actions that shall be taken in the event of non-compliance.

The guidelines for execution of the EMPr include the following:

- Ensure that the mining/quarry activities associated with the Wolwekop hard rock quarry are carefully managed so that impacts on the environment are kept to a minimum and the benefits are maximised.
- Provide the quarry operator with adequate information early on in the process so that they can adequately cost the environmental specifications and define their obligations. Only through costing and allowing for environmental management will impacts associated with the operational phase be reduced and benefits maximised.
- Responsibilities for the environmental performance of the quarry are known by the quarry staff.
- Communication channels to report on environmental performance, problems and priorities are in place.
- A monitoring schedule is established to identify potential negative environmental impacts associated with the operation of the quarry.
- Method Statements (detailed action plans) are implemented to avoid or minimise the identified negative environmental impacts (such as rehabilitation of eroded areas and bush clearings) as well as to enhance the positive impact on the environment.

It is important to note that the EMPr is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the South African National Roads Agency (SANRAL) in writing for approval. It must be emphasised that some changes may have budget and timeframe implications.

## 5.2 SCOPE OF THE EMPr

This EMPr covers the construction, operation and decommissioning phases of the Wolwekop hard rock quarry outside Middelburg, Eastern Cape.

Quarry Operators will be required to adhere to all of the lead Quarry Operator's environmental guidelines and standards as well as South African legislation.

The Quarry Manager (QM) will act as the Environmental Site Officer (ESO), who must ensure that the EMPr is implemented and adhered to. An independent Environmental Control Officer (ECO) must be appointed. The ECO must meet on a quarterly basis on site, with the CM, and conduct an audit of the adherence to the EMPr, highlighting areas of non-compliance. The ECO will then prepare a report for submission to SANRAL.

## 5.3 ENVIRONMENTAL POLICY

The Quarry Operator (Quarry Operator is defined as principal contractor, sub-contractors and any employees retained on this project) is required to familiarise themselves with the environmental policy and all that it implies, and to adopt and implement the policy throughout the course of construction and operation of the quarry.

The environmental policy is as follows:

- The environmental specifications and intentions of the specifications must be upheld.
- Natural resources will not be degraded, and no unnecessary environmental degradation must take place.
- Quarry activities will be conducted in a manner that does not create a nuisance, risk or hazard to the natural environment.
- Employee and public health and safety must be considered a priority.
- The whole site and its surroundings are considered environmentally sensitive.

### 5.3.1 Environmental legislation and guidelines

The quarry activities must be according to the best industry practices. This EMPr, which forms an integral part of the contract documentation, informs the Quarry Operator as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by activities associated with the project. The Quarry Operator should note that obligations imposed by the EMPr are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

The Quarry Operator must ensure that all South African legislation concerning the natural environment, pollution and the built environment is strictly enforced. The list of applicable legislation provided below is intended to serve as a guideline only and is not exhaustive:-

- The Constitution of the Republic of South Africa Act No. 108 of 1996.
- Water Act No. 54 of 1956 and National Water Act No. 36 of 1998.
- National Environmental Management Act No. 107 of 1998.
- National Heritage Resources Act, No 25 of 1999.
- National Environmental Management: Biodiversity Act 10 of 2004
- National Environmental Management: Waste Management Act 59 of 2008
- Health Act 63 of 1977
- Occupational Health and Safety Act 85 of 1993
- Hazardous Substances Act No. 15 of 1973.



## 5.4 HEALTH AND SAFETY GUIDELINES

Health and Safety guidelines seek to ensure the health and safety of the employees of SANRAL and Quarry Operators. To fulfil this commitment, the lead Quarry Operator and sub-contractors will:

- Strive to identify and assess potential risks and hazards early and manage them in a way that avoids or mitigates adverse effects.
- Reduce the risk of harm to employees of the Department of Roads and Transport, Province of the Eastern Cape and Quarry Operators.
- Monitor risks and reassess risk, thereby aiming to improve results continuously.
- Train employees to ensure that they have the correct skills and competencies.
- Develop an emergency response programme/preparedness plan to deal with potential risks.

## 5.5 ENVIRONMENTAL GUIDELINES

The conservation of the environment is essential for long term sustainable development. The lead-Quarry Operator must recognize that their activities have the potential to cause environmental harm, and that their aim is to reduce the impact on the environment over time. To fulfil this commitment the lead Quarry Operator and sub-Contractors must:

- Comply with all current laws and regulations of South Africa.
- Apply the precautionary principle approach to environmental management in order to ensure opportunities for environmentally sustainable development.
- Set environmental standards and targets to assess performance.
- Assess potential impacts.
- Integrate environmental factors into construction.
- Ensure the protection, maintenance and rehabilitation of the environment.
- Promote environmental awareness of employees and Quarry Operators through training.
- Promote the wise use of water - construction workers must switch off taps when not using water.
- Ensure that construction workers limit energy use to activities essential to the building process.
- Where possible, source environmentally friendly products for use in construction, with limited excess packaging.
- Develop an emergency response programme/preparedness plan to deal with potential risks.

## 5.6 IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

### 5.6.1 Personnel

#### The Quarry Manager

The Quarry Manager (QM) has the following responsibilities:

- Ensuring necessary environmental authorizations and permits have been obtained.
- Monitoring and verifying that the EMP is adhered to at all times and taking action if the specifications are not followed.
- Monitoring and verifying that environmental impacts are kept to a minimum;
- Reviewing and approving quarrying method statements with input from the ECO.
- Assisting the Quarry Operator in finding environmentally responsible solutions to problems with input from the ECO.
- Keeping records of all activities/incidents on Site in the Site Diary concerning the environment.
- Keeping a register of complaints in the Site Office and recording and dealing with any community comments or issues.
- Ordering the removal of person(s) and/or equipment not complying with the specifications.
- Issuing of penalties for transgressions of site rules.

- Providing input into the ECOs on-going internal review of the EMPr

### **The Quarry Operator**

The overall responsibility for ensuring compliance lies with the Quarry Operator. The Quarry Operator shall ensure that:

- All staff members, sub-contractors and suppliers understand and adhere to the EMPr.
- That all sub-contractors and suppliers are contractually bound to adhere to the EMPr and Environmental Code of Conduct.

The QM shall submit regular written reports to the ECO, but not less frequently than once a quarter.

### **Environmental Control Officer (ECO)**

For the purposes of implementing the conditions contained herein, the Developer shall appoint an Environmental Control Officer (ECO) for the duration of the construction contract. The ECO shall be the responsible person for ensuring that the provisions of the EMPr are complied with during the life of the construction contract. The ECO will be responsible for issuing instructions to the Quarry Operator and where environmental considerations call for action to be taken. The ECO shall submit regular written reports to SANRAL, but not less frequently than once a month.

The ECO will be responsible for the monitoring, reviewing and verifying of compliance with the EMPr by the Quarry Operator. The ECO's duties in this regard will include, inter alia, the following:

- Confirming that all the environmental authorisations and permits required in terms of the applicable legislation have been obtained prior to construction commencing.
- Monitoring and verifying that the EMPr are adhered to at all times and taking action if specifications are not followed.
- Monitoring and verifying that environmental impacts are kept to a minimum.
- Reviewing and approving construction method statements with input from the ESO and Quarry Manager, where necessary, in order to ensure that the environmental specifications contained within this EMPr are adhered to.
- Inspecting the site and surrounding areas at least once a month regarding compliance with the EMPr.
- Monitoring the undertaking by the Quarry Operator of environmental awareness training for all new personnel on site.
- Ensuring that activities on site comply with all relevant environmental legislation.
- Ordering the removal of, or issuing spot fines for person/s and/or equipment not complying with the specifications of the EMPr.
- Undertaking a continual internal review of the EMPr and submitting any changes to SANRAL.
- Checking the register of complaints kept on site and maintained by the ESO and ensuring that the correct actions are/were taken in response to these complaints.
- Checking that the required actions are/were undertaken to mitigate the impacts resulting from non-compliance.
- Reporting all incidences of non-compliance to SANRAL.
- Conducting monthly environmental performance audits in respect of the activities undertaken relating to the project.
- Keeping a photographic record of progress on site from an environmental perspective.
- Recommending additional environmental protection measures, should this be necessary.
- Providing report back on any environmental issues at site meetings.

The ECO must have:

- A good working knowledge of all relevant environmental policies, legislation, guidelines and standards;

- The ability to conduct inspections and audits and to produce thorough, readable and informative reports;
- The ability to manage public communication and complaints;
- The ability to think holistically about the structure, functioning and performance of environmental systems; and
- Proven competence in the application of the following integrated environmental management tools:
  - Environmental Impact Assessment.
  - Environmental management programmes.
  - Mitigation and optimisation of impacts.
  - Monitoring and evaluation of impacts.

The ECO must be fully conversant with the all relevant environmental legislation.

SANRAL shall have the authority to replace the ECO if, in their opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMPr or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required and within what timeframe.

### **Senior and Supervisory Personnel**

- All of the Quarry Operators' senior and supervisory staff members shall familiarise themselves with the full contents of the EMPr.
- They shall understand and know how to implement the control measures of the EMPr, and shall be able to assist other staff members in matters relating to the EMPr.

### **Sub-contractors**

- A representative of all sub-contractors will receive a copy of the EMPr.
- A representative of the sub-contractor will be required to sign the Environmental Code of Conduct to give assurance that they understand the EMPr and that they undertake to comply with conditions therein.

### ***5.6.2 Procedures***

#### **Environmental Compliance by Quarry Operators**

The Quarry Operator will be deemed not to have complied with the EMPr if:

- There is evidence of contravention of the EMPr specifications within and outside the construction area.
- The Quarry Operator fails to comply with corrective or other instructions issued by the QM within a time specified by the QM.
- Environmental damage ensues due to negligence.
- Construction activities take place outside the defined boundaries of the site
- The Quarry Operator fails to respond adequately to complaints from the public, as determined by the Quarry Manager and the ECO to require action on the part of the Quarry Operator.

The Quarry Operator shall act immediately when a notice of non-compliance is received and correct whatever was the cause for the issuing of the notice.

Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. The Quarry Manager's decision with regard to what is considered a violation, its seriousness and the action to be taken against the Quarry Operator shall be final.

### **Environmental Awareness Training/Induction**

The Quarry Operator shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities (see Appendices);
- The environmental benefits of improved personal performance;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.
- The importance of not littering.
- The need to use water sparingly.
- Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible.
- Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered.
- Details regarding flora of special concern, including protected/endangered plant and species, and the procedures to be followed should these be encountered during the construction phase.

In the case of permanent staff, the Quarry Operator shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Quarry Operator shall inform the QM when and how he intends concluding his environmental training obligations.

A training needs analysis shall be conducted by the QM and/or ECO to identify the appropriate environmental and health training programmes, and the appropriate target groups amongst the employees of the Quarry Operator. Recommended Basic Environmental Education Material is provided in Appendix A

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes should contain the following information:

- The names, positions and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarised content of each training course.
- A schedule for the presentation of the training courses.

The Quarry Operator shall ensure that records of all training interventions are kept in accordance with the record keeping and documentation control requirements as set out in this EMPr. The training records shall verify each of the targeted personnel's training experience. The ECO shall monitor the records and listed and undertake regular follow ups.

### **Record Keeping**

The QM and the ECO will continuously monitor the Quarry Operator's adherence to the approved impact prevention procedures and the QM shall issue to the Quarry Operator a notice of non-compliance whenever transgressions are observed. The ECO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the QM in the monthly report.

A list of reports likely to be generated during the operation of the hard rock quarry for the N9 road upgrade between Middelburg and Carlton Height, Eastern Cape is provided below, and all applicable documentation must be included in the environmental filing system catalogue or document retrieval index.

- Environmental Management Plan (EMPr).
- Final design documents and diagrams issued to and by the Quarry Operator.
- All communications detailing changes of design/scope that may have environmental implications.
- Quaterly site monitoring reports.
- Occupational Health and Safety reports.
- Complaints register.
- Medical reports.
- Training manual.
- Training attendance registers.
- Incident and accident reports.
- Emergency preparedness and response plans.
- Permits and legal documents, including letters authorising specific personnel of their duties as Occupational Health and Safety representatives or as part of emergency preparedness teams e.g. fire teams, etc.
- Site meeting minutes during construction.
- All relevant permits.
- All method statements from the Quarry Operator for the construction phase of the project.

### **Document Control**

The Quarry Operator and Quarry Manager shall be responsible for establishing a procedure for document control. The document control procedure should comply with the following requirements:

- Documents must be identifiable by organisation, division, function, activity and contact person.
- Every document should identify the personnel and their positions, who drafted and compiled the document, who reviewed and recommended approval, and who finally approved the document for distribution.
- All documents should be dated, provided with a revision number and reference number, filed systematically, and retained for at least a five year period.
- The Quarry Operator shall ensure that documents are periodically reviewed and revised, where necessary, and that current versions are available at the location where operations essential to the functioning of the EMPr are performed. All documents shall be made available during auditing.

### **Environmental incidents Reporting and Remedy**

- An Environmental Incidents Register and an Environmental Complaints Register will be kept on site at all times and will be maintained by the QM.
- If a leakage or spillage of hazardous substances occurs on site, the local emergency services must be immediately notified of the incident (within 24 hours). The following information must be provided:
  - The location;
  - The nature of the load; and
  - The status at the site of the accident itself (i.e. whether further leakage is still taking place, whether load is on fire).
- Written records must be kept on the corrective and remedial measures decided upon and the progress achieved therewith over time. Such progress reporting is important for monitoring and auditing purposes. The written reports may be used for training purposes in an effort to prevent similar future occurrences. Appendices provide examples of environmental incidents and complaints registers.

### **Method Statements**

- The Quarry Operator shall not commence an activity until the Method Statement has been approved and such approval shall not unreasonably be withheld. The ECO or QM may require changes to a Method Statement if the proposal does not comply with the specification or if, in the reasonable opinion of the ECO or QM, the proposal may result in, or carries a greater than reasonable risk of damage to the environment in excess of that permitted by the specifications.
- Approved Method Statements shall be readily available on the site and shall be communicated to all relevant personnel. The Quarry Operator shall carry out the works in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Quarry Operator from any of his obligations or responsibilities in terms of the contract.

### **Environmental Emergency Response Plans and Procedures**

The Quarry Operator shall compile and maintain environmental emergency procedures to ensure that there will be an appropriate response to unexpected or accidental actions or incidents that will cause environmental impacts, throughout the duration of the construction contract. This plan must be developed in accordance with industry best practice.

Such activities may include, inter alia:

- Accidental discharges to water and land.
- Accidental exposure of employees to hazardous substances.
- Accidental spillage of hazardous substances.
- Specific environmental and ecosystem effects from accidental releases or incidents.

These plans should include:

- Emergency organisation (manpower) and responsibilities, accountability and liability.
- A list of key personnel.
- Details of emergency services applicable in the area (e.g. the fire department, spill clean-up services, etc.).
- Internal and external communication plans, including prescribed reporting procedures where required by legislation.
- Actions to be taken in the event of different types of emergencies.
- Incident recording, progress reporting and remediation measures required to be implemented.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.
- Training plans, testing exercises and schedules for effectiveness.

The Quarry Operator shall comply with the emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and/or any other relevant legislation.

### **Environmental Financial Provision**

The tendered rate must cover any cost associated with complying with the EMPr and its associated specifications, and shall allow for all materials, labour and plant required to execute and complete the work as specified.

### **Environmental Spot Fines**

The ECO shall be authorised to impose spot fines for any of the transgressions detailed below:

- Littering on site.
- Lighting of illegal fires on site.
- Persistent or un-repaired oil leaks.
- Any persons, vehicles or equipment related to the Quarry Operator's operations found within designated "no-go" areas.

- Excess dust or excess noise emanating from site.
- Possession or use of intoxicating substances on site.
- Removal and/or damage to flora or cultural or heritage objects on site.
- Urination and defecation anywhere except in designated areas.

These activities, along with the appropriate guidelines to determining the fines shall be agreed to by SANRAL. Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the Environmental Specifications and or legal obligations. The QM will inform the Quarry Operator of the contravention and the amount of the fine.

### **Penalty Fines**

Where environmental damage is caused or a pollution incident, and/or failure to comply with any of the environmental specifications contained in the EMPr, the Quarry Operator shall be liable to pay a penalty fine. The ECO shall recommend to the Quarry Operator the issuing of penalties for contravention of the EMPr or environmental legislation. The following transgressions should be penalised:

- Hazardous chemical/oil spill.
- Damage to sensitive environments.
- Damage to cultural and historical sites.
- Unauthorised removal/damage to indigenous trees and other vegetation, particularly in identified sensitive areas.
- Uncontrolled/unmanaged erosion.

In addition to the above, where the Quarry Operator inflicts non-repairable damage upon the environment or fails to comply with any of the environmental specifications, he shall be liable to pay a penalty fine over and above any other contractual consequence. The Quarry Operator is deemed **NOT** to have complied with this specification if:

- Within the boundaries of the site, site extensions and haul/access roads and servitudes there is evidence of contravention of the specification.
- Environmental damage ensues due to negligence.
- The Quarry Operator fails to comply with corrective or other instructions issued by the ECO or the QM within a specific time.
- The QM has the power to remove from site, any person who is in contravention of the EMPr, and if necessary, the QM can suspend part or all of the works, as required.
- The Quarry Operator fails to respond adequately to complaints from the public, as determined by the QM and the ECO to require action on the part of the Quarry Operator.
- The amount of the penalty fine shall be determined by the ECO and the QM.
- Payment of any fines in terms of the contract shall not absolve the offender from being liable from prosecution in terms of any law.
- Environmental performance by the Quarry Operator shall be one of the measures used by the QM when evaluating contract completion and payment of the retention amount, as defined in the main contract.

### **Environmental Control Measures**

- This section contains “on the ground” specifications which will need to be complied with by the Quarry Operator and must be included in the tender documents as well as the final contract documents. The standard specifications are relevant to all construction activities of all project components and are in addition to the standard engineering specifications.

### **Interaction with Local Residents**

- Contact with the local administration by the ECO must precede any activity on the ground.
- All attempts must be taken to minimise the amount of disturbance to local residents.

- Should the construction team need to traverse private land outside of the servitudes then permission must be obtained from the land owner.
- All complaints from local residents must be recorded in the Environmental Complaints Register and dealt with by the ECO, RE and if necessary, the developer.

### **Management Review**

A formal management review needs to be conducted on a regular basis in which the quarterly internal audit reports written by the ECO and based on frequent inspections and interactions with the QM based on the latter's daily/weekly/monthly reports will be reviewed. The purpose of the review is to critically examine the effectiveness of the EMPr and its implementation and to decide on potential modifications to the EMPr as and when necessary. The process of management review is in keeping with the principle of continual improvement. Management review will take place at least every two months for the duration of the construction contract.

## **5.7 ENVIRONMENTAL SPECIFICATIONS**

This Chapter of the EMPr outlines the environmental specifications which are required to be implemented for the use of the Wolwekop hard rock quarry for the N9 Road Upgrade.

Comprehensive environmental audits are to be undertaken periodically (at least quarterly), in order to verify compliance with the measures listed below and all applicable environmental legislation. If compliance with any of these measures cannot be met, it will be the responsibility of the Quarry Operator to motivate for this non-compliance.

### **5.7.1 General site procedures**

#### **Good housekeeping procedures**

The development site is situated in an open space which is visible to people who walk and drive nearby. Therefore the Quarry Operator should maintain good housekeeping on site to avoid litter and minimise waste.

Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

#### **Demarcation of the site**

The "site" refers to all areas required for construction purposes i.e. buildings and infrastructure. The boundary of the site must be agreed with the ECO. All activities must be conducted within this area so as to facilitate control and to minimise the impact on the existing natural environment. The ECO and QM must ensure that the construction is done according to the final site layout only.

The Quarry Operator must demarcate the boundaries of the site in order to restrict construction and other (eating, washing and ablution) activities. The Quarry Operator must ensure that all his plant, labour and materials remain within the demarcated boundaries.

All botanical material to be removed must be done at this stage and plants to remain must be marked with danger tape. The Quarry Operator must be present when this is done so that he is aware of which plants are to be protected.

#### **Location of construction camp and depot**

The Quarry Operator must establish his construction camp and depot on the site in a manner that does not adversely affect the environment. However, before construction can begin, the Quarry Operator shall submit to the QM and ECO for his approval a site layout plan detailing plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Quarry Operator proposes to put in place. In particular, this plan must include:-



- Site access (including entry and exit points).
- Access and haulage routes.
- All material and equipment storage areas (including storage areas for hazardous substances such as fuel and chemicals) - Only designated areas may be used for the storage of materials, machinery, equipment and site offices.
- Security requirements (including temporary and permanent fencing, and lighting).
- Areas where vegetation will be cleared.
- The locality as well as the layout of the temporary waste storage facilities for litter, kitchen refuse, sewage and workshop-derived effluents. Waste storage facilities for sewage, grey water and workshop-derived effluents, where no formal facilities exist.
- Stormwater control measures.
- Provision of potable water and temporary ablution facilities.
- Potential pollution hazards and mechanisms to manage these.
- Intended mitigation measures for approval by the ECO.

The site plan shall be submitted no later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the QM for consultation during rehabilitation of the site.

Throughout the period of construction, the Quarry Operator shall restrict all activities to within the designated areas on the approved construction layout plan. Any relaxation or modification of the construction layout plan is to be approved by the QM and ECO.

### **Vegetation clearing**

- The Quarry Operator has a responsibility to inform all staff of the need to be vigilant against any practice that will have a harmful effect on vegetation. This information shall form part of the Environmental Education Programme to be effected by the Quarry Operator (see Appendices).
- The natural vegetation encountered on the site is to be conserved and left as intact as possible.
- Where appropriate, these plants must be kept in an off-site nursery and used in the rehabilitation of the areas disturbed during construction and alien vegetation clearing and any other areas requiring rehabilitation.
- Re-vegetation of disturbed areas must be undertaken with site appropriate indigenous species and in accordance with the instructions issued by the ECO.
- Only trees and shrubs directly affected by the works, and such others as may be indicated by the ECO in writing, may be felled or cleared.
- A suitable qualified Quarry Operator, nursery or botanist may need to be contacted and should undertake a targeted survey of protected trees to identify any individuals of protected species. These must be marked with red tape.
- Where necessary, sensitive areas adjacent to the construction site, including all potential habitats for threatened species, must be demarcated and no construction activities or impacts must be permitted to occur across these demarcations. Demarcated areas must be fenced off and no personnel or equipment must be permitted to enter these areas.
- Any proclaimed weed or alien species that germinates during the contract period shall be cleared by hand before flowering.
- Fires shall only be allowed in facilities or equipment specially constructed for this purpose.
- A firebreak shall be cleared and maintained around the perimeter of the site camp.
- On-going monitoring and maintenance of re-vegetation works should be undertaken following construction of the road.

### **Slope stabilisation**

- The Quarry Operator shall take measures to protect all areas susceptible to erosion by installing all the necessary temporary and permanent drainage works as soon as possible. The Quarry Operator shall take any other measures that may be necessary to prevent surface water from being concentrated in streams and from scouring the slopes, banks or other areas.

- If runnels or erosion channels develop, they shall be back-filled and compacted, and the areas restored to a proper condition. The Quarry Operator shall not allow erosion to develop on a large scale before effecting repairs.
- Where artificial slope stabilisers are used, these shall be applied to the slope, preferably before top-soiling, but according to the detailed construction plan and as specified in this specification:
- Where the slopes are 1.3 to 1:6 they shall be logged or otherwise stepped in order to prevent soil erosion. Logs must be laid in continuous lines following the contours and spaced vertically 0.8-1.2 m apart, depending on the steepness of the slope. These logs must be secured by means of steel pegs and wire in rocky areas, and treated wooden pegs in other areas.
- In areas where slopes are less than 1:6, horizontal grooves, shallow steps or ledges parallel to contours shall be made on the cut slopes. They shall be made at random to appear natural.
- Shallow slopes shall be stabilised by using brushwood to initially minimise soil erosion until revegetation has been successful.

### **Site Clearance**

In all areas where the Quarry Operator intends to, or is required to clear the natural vegetation and soil, a plan of action shall first be submitted to the QM and ECO for approval. The plan shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the QM and ECO for their records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.

The Quarry Operator shall be responsible for the re-establishment of vegetation disturbed during construction. This includes, for example, service roads, stockpile areas, windrows and wherever material generated for, or from, construction has to be stored temporarily or otherwise within the construction site, or at designated or instructed areas outside the boundaries of the construction site. This responsibility shall extend until expiry of the defects notification period.

- All cleared areas shall be stabilised as soon as possible. Areas that are, in the reasonable opinion of the ECO less stable, shall be stabilised immediately following vegetation clearance.
- The disposal of vegetation by burying or burning is prohibited, suitable arrangements with the community will be made for the use of the vegetation as fire wood.
- Vegetation, apart from trees identified for retention on site, shall be cleared by hand to minimise secondary damage from large machinery (bush cutters, bulldozers, etc.). Care shall be taken to minimise disturbance to topsoil during this process.
- During site clearance, any old concrete, rubble or refuse shall be removed from the site, or stockpiled for disposal at an approved disposal site. All stockpiles shall be managed so as to avoid damage to vegetation.
- Indigenous mulch shall be harvested in such a manner that loss of seed and biomass shall be at a minimum.

### **Topsoil Removal and Stockpiling**

- Prior to site establishment and any earthmoving operations, the Quarry Operator shall strip and stockpile all topsoil within the works areas for subsequent use in the rehabilitation and re-vegetation of the site.
- All topsoil shall be stripped and stockpiled separately from subsoil for subsequent use during rehabilitation and re-vegetation.
- Soil shall be stripped in a phased manner, so as to retain vegetation cover for as long as possible.
- The top 100mm of topsoil shall be stripped unless otherwise stipulated by the ECO.
- Topsoil from different soil types shall be stockpiled separately and replaced in the same areas from which they were taken. This shall be supervised by the ECO.
- The ECO will identify a suitable site for stockpiling and this must be approved by the ECO and QM.

- Topsoil shall be treated with care and precautions shall be taken to prevent unnecessary handling and compaction. In particular, topsoil shall not be subject to compaction greater than 1 500 kg/m<sup>2</sup> and shall not be pushed by a bulldozer for more than 50m. Trucks may not drive over the stockpiles.
- Unless otherwise instructed, topsoil shall not be mixed with any other type of material, nor contaminated with machine oils or any other pollutant.
- Topsoil stockpiles shall be convex and should not exceed 2m in height to minimise wind and water erosion. The Quarry Operator shall ensure that the material does not blow or wash away. If the topsoil is in danger of being washed or blown away, or requires storage for more than 2 weeks, the Quarry Operator shall cover it with a suitable material, such as mulch and/or seed it with a fast-growing annual grass.
- Topsoil areas shall be demarcated in order to ensure the safekeeping of topsoil and to separate different stockpile types.
- Soil shall be stockpiled for as short a period as possible.
- Stockpiles shall be monitored at weekly intervals to identify invasive plants, which shall be removed when they germinate, to prevent contamination of the seed bank. The ECO shall assist in the identification of alien plants.
- Stockpiles shall not be covered with materials such as plastic that may cause it to compost, or kill any seeds. The soil in the stockpiles contains a valuable seed bank reserve which can be used in rehabilitation of the area.
- The Quarry Operator, before indigenous vegetation clearing or soil removal for stockpiling begins, shall remove alien invasive weeds present within the construction area.
- The Quarry Operator shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the ECO.

#### **Protection of Flora and Fauna**

- Except to the extent necessary for the carrying out of the works i.e. defining the construction sites and construction camps / lay-down areas, flora shall not be removed, damaged or disturbed nor shall any vegetation be planted, other than as specified in the re-vegetation specifications.
- Trapping, poisoning and/or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on site.
- Where the use of herbicides, pesticides and other poisonous substances is required, the Quarry Operator shall submit a Method Statement (with product MSDS's) for approval by the ECO and Quarry Manager.
- Construction activities must remain within defined construction areas.
- No construction / disturbance will occur outside these areas.

#### **Workshop, Equipment Maintenance and Storage**

- Where practical, all maintenance of equipment and vehicles on site shall be performed in a workshop.
- The Quarry Operator shall ensure that there is no contamination of water, soil or vegetation.
- The Quarry Operator shall ensure the workshop is kept neat and clean at all times.
- The workshop shall have a smooth impermeable (concrete or thick plastic covered with sand) floor. The floor shall be bunded and sloped towards an oil trap or sump to contain any spillages of substances (e.g. oil).
- Drip trays shall be provided in construction areas for stationary and "parked" plant, and when servicing vehicles.
- All vehicles and equipment shall be kept in good working order and serviced regularly. Leaking equipment shall be repaired immediately or removed from the site.
- The workshop shall be appropriately ventilated and vehicle exhaust shall be discharged to the open air (not indoors).

### **Materials Handling, Use and Storage**

- The Quarry Operator shall ensure that drivers are informed of all procedures and restrictions required to comply with the specifications.
- The Quarry Operator shall ensure that these drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the specifications.
- Materials shall be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to, sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent spillage from the vehicle during transit.
- The Quarry Operator shall be responsible for any and all clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.
- All manufactured and/or imported material shall be stored within the Quarry Operator's camp, preferably out of the rain.
- All lay-down areas outside of the construction camp shall be subject to the QM and ECO's approval, which shall not be withheld unreasonably.

### **Solid Waste Management**

- All solid waste shall be disposed of in accordance with Inxuba Yethemba Municipality Integrated Waste Management Plan (IWMP) and /or DAFFs waste management procedures.
- The Quarry Operator shall set up a solid waste control and removal system and a Method Statement is required in this regard. The system shall comply with the requirements detailed in this section.
- No on-site burying, dumping or burning of any waste materials, vegetation, litter or refuse shall occur.
- Bins, with lids, shall be positioned within the working areas and shall be emptied daily.
- All solid waste shall be disposed of at a designated public disposal site.
- Receipts for hazardous waste disposal shall be copied to the ECO.
- Waste and litter shall be disposed of into scavenger- and weather-proof bins. The Quarry Operator shall remove the refuse collected from the working areas from site at least once a week.
- The Quarry Operator must where possible limit the amount of waste produced on the construction site, and ensure that wherever possible, waste materials are re-used or recycled, or donated or sold to an organisation for this purpose.
- Biodegradable items should be separated from other waste and used either in composting or mulching.

### **Hazardous Substances**

- If potentially hazardous substances are to be stored on site, the Quarry Operator shall provide a Method Statement to the ECO and QM, detailing the substances/materials to be used, together with the storage, handling and disposal procedures of the materials.
- Hazardous chemical substances used during construction shall be stored in secondary containers.
- The relevant Material Safety Data Sheets (MSDS) must be available on site. Procedures detailed in the MSDS must be followed in the event of an emergency situation.

### **Paint**

- No paint products may be disposed of on site.
- Brush / roller wash facilities shall be established to the satisfaction of the QM.
- Oil based paints and chemical additives and cleaners such as thinners and turpentine shall be strictly controlled. A Method Statement, approved by the QM and ECO, is required.

### **Spillages**

Downstream water courses and wetlands shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, and organic materials. In the event of a spillage, the Quarry Operator shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the Quarry Operator. The individual responsible for, or who discovers a hazardous waste spill must report the incident to QM. The ECO must assess the situation in consultation with the QM and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the Quarry Operator in consultation with the ECO and the RE. Areas cleared of hazardous waste shall be revegetated according to the QM's instructions

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the QM. The costs of containment and rehabilitation shall be for the Quarry Operator's account, including the costs of specialist input.

### **Servicing/fuelling of construction equipment**

- Servicing and fuelling should preferably occur off-site. If these activities occur on-site, the Quarry Operator shall ensure that it takes place in designated areas. All waste generated during these activities shall be collected and disposed of at an appropriate off site facility capable of handling such waste. All equipment that leaks shall be repaired immediately. In the case of changing oil or lubricants on-site, the Quarry Operator shall have Drizit pads (or equivalent) and/or drip trays available to collect any oil, fluid, etc.
- The Quarry Operator shall take all reasonable precautions to prevent the pollution of the ground and/or water resources by fuels and chemicals as a result of construction activities. No oil, diesel, petrol, etc., must be discharged onto the ground. Pumps and other machinery requiring oil, diesel, petrol, etc. that is to remain in one position for longer than two days shall be placed on drip trays. The drip trays shall be emptied regularly and the contaminated water disposed of offsite at a facility capable of handling such waste water. Drip trays shall be cleaned before any possible rain events that may result in the drip trays overflowing and before weekends and holidays.
- The Quarry Operator shall remove all oil, petrol and diesel-soaked sand immediately and shall dispose of it as hazardous waste. Tanks containing fuel shall have lids and shall remain firmly shut. Fuel stores shall be placed on a bunded seal base, and waste water or spilled fuel collected within the bund shall be disposed of as hazardous waste. Only clean, empty tanks may be stored on the ground.
- The Quarry Operator shall take the necessary precautions to prevent fires or spills at the fuel stores. No smoking or other activities that can initiate fires shall be allowed in the vicinity of the stores. Any hazardous waste substances must be disposed of off-site at a licensed landfill site.

### **Fuel Storage**

- Fuel should preferably not be stored on site, but if this is required, fuel storage must comply with the specifications presented in this section.
- The fuel storage area shall be located in an area approved by the QM and ECO, and must not be located in or be less than 100m from any surface or underground water source.
- The Quarry Operator shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are kept firmly shut.
- The tanks shall be situated on a smooth impermeable surface (plastic or concrete) base with an earth bund (plastic must have sand on top to prevent UV degradation). The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% of the total capacity of all the storage tanks. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed, or the bunded area shall be covered.
- The Quarry Operator shall keep fuel under lock and key at all times, and the fuel storage area should preferably be fenced.
- No smoking or naked flame shall be allowed in the vicinity of the stores.

- Only empty and externally cleaned tanks may be stored on the bare ground. All empty and externally dirty tanks shall be sealed and stored in an area where the ground has been protected. In addition, if fuel is dispensed from 200 litre drums, the proper dispensing equipment shall be used, and the drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a water proof container when not in use.
- Symbolic safety signs depicting “No Smoking”, “No Naked Lights” and “Danger” are to be provided, and are to conform to local standards. The volume capacity of the tank shall be displayed.
- The product contained within the tank shall be clearly identified, using an appropriate emergency information system.
- Any electrical or fuel-driven pump shall be equipped and positioned so as not to cause any danger of ignition of the product.
- Areas for storage of fuels and other flammable materials shall comply with fire safety regulations.
- The Quarry Operator shall ensure that there is adequate fire-fighting equipment at the fuel stores.

### **Eating Areas**

- The Quarry Operator shall designate eating areas which shall contain bins with lids and cooking facilities, if necessary.
- Eating outside of these designated areas is prohibited.
- The feeding or leaving of food for wild animals is strictly prohibited.

### **Ablution Facilities**

- Washing, whether for personal hygiene or of personal effects, and acts of excretion and urination are strictly prohibited other than at the facilities provided.
- The QM and ECO shall approve the exact location of temporary toilets prior to establishment, should these be required.
- The Quarry Operator shall ensure that temporary toilets are emptied and serviced regularly and that no spillage occurs when the toilets are cleaned or emptied.
- Discharge of waste from toilets into the environment and burial of waste is strictly prohibited.
- Sanitation facilities shall be located within 100m from any point of work, but not closer than 50m to any water body.
- Toilet facilities supplied by the Quarry Operator for the workers shall occur at a maximum ratio of 1 toilet per 15 workers. Toilet paper shall be provided.

### **Litter**

- No littering by construction workers shall be allowed.
- During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.
- Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse.
- At all places of work the Quarry Operator shall provide litter collection facilities for later safe disposal at approved sites.

### **Contaminated Water**

- The Quarry Operator shall set up a contaminated water management system for which a Method Statement is required. The Method Statement shall state the collection facilities that are to be used to prevent pollution, as well as the method of disposal of the contaminated water.
- Refuse screens and oil traps shall be installed at runoff concentration points from where litter and/or oil will gather as a result of the construction activities.
- These facilities shall be serviced and monitored at the discretion of the ECO.

- Wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted. The ECO must approve the location of wash areas.
- Non-phosphorous detergents and no chlorinated solvents are to be used except where no suitable alternative exists.
- The Quarry Operator shall prevent discharge of any pollutants, such as cements, concrete, lime, chemicals and fuels into any water sources.

### **Dust**

- The Quarry Operator shall be solely responsible for the control of dust.
- The Quarry Operator shall take all reasonable measures to minimise the generation of dust, as a result of construction activities, to the satisfaction of the ECO.
- Removal of vegetation shall be avoided until such time as soil stripping is necessary. Exposed surfaces shall be re-vegetated or stabilised as soon as is practically possible, as per the rehabilitation specifications provided below.
- Where possible, soil stockpiles shall be located in sheltered areas where they are not exposed to the erosive effects of the wind. Where erosion of stockpiles becomes a problem, erosion control measures shall be implemented. These could include grassing, reducing the size of stockpiles or positioning them in areas where they are protected from wind erosion.
- Vehicle speeds shall not exceed 20km/h in the site.
- Appropriate dust suppression measures shall be used during high dust conditions e.g. dampening with water or the use of other suppression measures.
- Stabilisation methods using mulch, straw, etc. will be applied to areas where earthworks are complete and the area is left exposed.

### **Noise**

- The Quarry Operator shall endeavour to keep noise generating activities to a minimum.
- Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out between 7h30 and 17h00.
- The Quarry Operator shall limit noise levels (e.g. install and maintain silencers on machinery).
- Appropriate directional and intensity settings are to be maintained on all hooters and sirens.
- No amplification equipment shall be allowed on site.
- Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.
- Compliance with the appropriate legislation with respect to noise shall be mandatory.

### **Access Roads**

- Only roads and tracks allocated as access roads shall be used (no informal tracks or roads to be created)
- The Quarry Operator shall control the movement of all vehicles and plant (including that of his suppliers) so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic, and that all relevant laws are complied with.
- In addition, such vehicles and plant shall be so routed and operated as to minimise disruption to regular users of the routes not on the site.
- In the event of a vehicle getting stuck or bogged down in a wet section or road, any damage from digging and attempts to extract the vehicle (holes, deep ruts, etc.) shall be repaired.

### **Fire Control**

- No fires may be lit on site, other than in designated areas.
- A Fire Officer shall be appointed by the Quarry Operator and shall be responsible for establishing a fire drill, fire procedures and ensuring that all fire-fighting equipment is readily accessible and in good working order.
- Any fires that occur shall be reported to the ECO immediately.
- Smoking shall not be permitted in those areas where there is a fire hazard e.g. workshop, fuel storage areas and in the vicinity of dry vegetation.
- Smoking shall only be permitted in clearly marked designated areas.

### **Storm Water Controls**

- The Quarry Operator shall take reasonable measures to control the erosive effects of storm water runoff at the construction areas by creating storm water channels and berms, if deemed necessary by the ECO.
- The Quarry Operator shall be liable for any damage to downstream areas caused by the diversion of overland storm water flows.
- The Quarry Operator shall use silt screens to prevent overland flowing water from causing erosion and shall use bales of straw as filters, if necessary.
- The Quarry Operator must ensure that erosion or pollution of ground water, drainage courses, wetlands and the river does not occur as a result of site activities. Pollution could result from the release, accidental or otherwise, of contaminated runoff from construction camps, discharge of contaminated construction water, chemicals, oils, fuels, sewage, run off from stockpiles, solid waste, litter, etc. All equipment and machinery, e.g. cement mixers, generators etc., must be placed on drip trays.
- The Quarry Operator shall ensure that any polluted runoff is collected in a lined sump and not discharged overland. Natural run-off shall be diverted away from the work site and storage areas. The Quarry Operator shall take appropriate measures e.g. the erection of silt traps, or drainage retention areas, to prevent silt and sand entering drainage courses, the river and wetlands.
- Stormwater retention ponds will be constructed prior to the onset of construction of the rest of the site to prevent stormwater from the adjacent areas running through the construction site and damaging the sensitive coastal areas.

### **Erosion**

- The removal of the natural vegetation cover must be avoided and where this cannot be done, minimised.
- Agricultural drainage methods must be used in fill materials to remove water that could trigger slumping.
- Perched water tables must be identified early and adequate drainage for these trigger points provided.
- The disturbance of the natural soil structure must be prevented and excavations planned carefully.
- The moving of heavy machinery into areas unnecessarily must be avoided.
- All fill material must be very well compacted and innovative use of geo-textile materials in the retention of soil fill areas made.
- Rainwater runoff from cut slopes must be prevented as far as possible.
- Cut off drains in areas above cut slopes must be created and these cut off drains must be lined in such a way that they do not create, rather than, alleviate problems.
- Sufficient storm water take off points must be created in such a way that water does not have an opportunity to gather momentum.
- Storm water ditches must contain structures that will reduce velocity of the run off.
- The use of vegetated swales must be investigated in less steep areas.
- Only local indigenous vegetation shall be used for mulching.

### **Discharge of construction water**

Construction water refers to all water dirtied as a result of construction activities. Silt laden water may be discharged overland and be allowed to filter into the ground, but the Quarry Operator shall ensure that no erosion results from this procedure. The Quarry Operator shall ensure that silt-laden water is not discharged directly into the stream or wetlands or any other surface water courses, and shall take suitable measures to prevent this.

Cement-laden water, i.e. water from washings from trowels, wheelbarrows, etc., may not be discharged overland but must be disposed of offsite at a facility capable of handling such waste water. Where possible, water should preferably be collected and reused for mixing new concrete.



### **Access to Site and Safety**

- The Quarry Operator shall ensure that access to the various work sites and associated infrastructure and equipment is off-limits to the public (especially children) at all times during construction.
- Additional areas restricted to the public and suggested detours shall be clearly marked on information boards to the satisfaction of the ECO.
- Any access to site that may pose a danger to the public must be suitably provided with warnings.

### **Cement and Concrete Batching**

- Concrete shall not be mixed directly on the ground, or in any area where runoff may pose a pollution threat.
- Any concrete batching activity shall be located in an area of low environmental sensitivity.
- The permitted location of the batching plant (including the location of cement stores, sand and aggregate stockpiles) shall be indicated on the site layout plan and approved by the QM and ECO.
- All wastewater resulting from batching of concrete shall be disposed of via the wastewater management system.
- The cement/concrete batching works shall be kept neat and clean at all times.
- No batching activities shall occur on unprotected substratum of any kind.
- Contaminated water storage facilities shall not be allowed to overflow and appropriate protection from rain and flooding shall be implemented.
- Used bags shall be stored in weather-proof containers to prevent windblown cement dust and water contamination. Used bags shall be disposed of on a regular basis and shall not be used for any other purpose.
- Spillage of concrete must not occur during batching and laying.
- With respect to exposed aggregate finishes, the Quarry Operator shall collect all contaminated water and fines and store it in sumps for disposal at an approved waste site.
- All visible remains of excess concrete shall be physically removed on completion of the plaster or concrete pour section and disposed of. Washing the remains into the ground is not acceptable. All excess aggregate shall also be removed.

### **Earthworks**

- The excavation of any material along the routes shall be done in accordance with applicable standards.
- All earthworks shall be undertaken in such a manner so as to minimise the extent of any impacts caused by such activities.
- Prior to earthworks, a search and rescue operation must be initiated to ensure all plants, cuttings and seeds of value are removed.
- Soil removed during earthworks must be removed and replaced in the same order in which it is found.
- No equipment associated with the earthworks activity shall be allowed outside of these areas unless expressly permitted by the QM.

### **Power Tools**

- The Quarry Operator shall take preventative measures, such as screening, muffling, dust control, timing and pre-notification of affected parties to minimise complaints regarding dust, noise and vibration nuisances.

### **Pumping and Sumping**

- Pumps shall be placed over a drip tray in order to prevent fuel spills and leaks from contaminating the water in the pumped area.
- Contaminated water may not be discharged into existing watercourses or streams, and a Method Statement approved by the ECO and QM for discharge of this contaminated water shall be required.

- Silt-laden water shall be cleaned by filtering through a drum containing sand and stone or by ensuring that the overland flow of water disperses widely through vegetation.
- Settlement ponds should be used for large amounts of silt-laden water. A Method Statement must be submitted to the QM prior to construction of the ponds.

### **Retaining Walls and Gabions**

- The reason for use and positions of retaining walls and gabions must be approved by the ECO and QM.
- Rocks for use in gabion baskets / Reno mattresses shall be obtained from a source approved by the QM which shall not be from a water course.

### **Archaeological**

- Should any archaeological artefacts or graves be encountered on site, construction activities must be suspended and the appropriate authorities and ECO contacted. The South African Heritage Resources Agency (SAHRA) or the National Monuments Council shall be contacted and they will appoint an archaeological consultant to record the site and excavate if necessary. Work may only resume once clearance is given in writing by the archaeologist.

### **Site closure and rehabilitation**

- Areas disturbed as a result of construction activities will require rehabilitation.

Any areas disturbed during the construction phase will be rehabilitated at the expense of the Quarry Operator, using only the naturally occurring indigenous vegetation. The Quarry Operator shall be responsible for rehabilitating any areas cleared or disturbed for construction purposes at the completion of construction. He will also be responsible for repairing any damage to fences and other infrastructure as a result of construction activities.

All construction equipment and excess aggregate, stone, gravel, concrete, etc. shall be removed from the site upon completion of work. No discarded materials shall be buried. Locally indigenous vegetation, only, shall be used for rehabilitation. The Quarry Operator and Project Manager should agree for how long the Quarry Operator will be responsible for erosion control.

The Quarry Operator shall be responsible for the elimination of alien plants and weeds in the areas disturbed by construction for the duration of the contract, and the first month thereafter, after which time the project proponent will be responsible.

The recommended new access road must be used by Quarry Operators as the increased amount of traffic will result in a rapid deterioration of the existing road. If there is a need for the establishment of additional access roads, the Quarry Operator will be responsible for their rehabilitation. Further, if additional access tracks are required in the more sensitive sections of the proposed development they must be approved by an appointed botanist or ECO who will establish the presence of any species of special concern in order to mitigate their disturbance. Also, selective clearing must be implemented. For example, not clearing larger woody thicket species that can be used for screening purposes must be considered.

Re-vegetation of disturbed areas disturbed during the construction phase consists of the following steps:

1. Spreading of stored topsoil i.e. that which has been removed from the site for the purposes of construction.
2. Planting. Indigenous grasses should be planted on steep slopes.
3. Watering of newly planted plants. The amount and duration of watering will be dependent on the season in which the plants are planted.
4. Regular audits and maintenance programmes to ensure that plants are growing and serving the purpose for which they were planted (i.e. to prevent erosion).

Once the grass cover is in place the natural successional processes should result in the incorporation of bush species. During this process however the encroachment of any alien vegetation must be prevented by active removal.

## **5.8 General Rehabilitation Guidelines**

### **Trees and Shrubs**

1. Indigenous plants shall be obtained either from the Site prior to clearing or from an area in close proximity to and of the same veld type as the Site.
2. Nursery plants shall be grown from locally obtained seed.
3. No plants or plants with exposed roots shall be subjected to prolonged exposure to drying winds and sun, or subjected to water logging or force-feeding at any time after purchase.
4. There shall be sufficient topsoil around each plant to prevent desiccation of the root system. Where plants are stored on site prior to planting they shall be maintained to ensure that the root systems remain moist.

### **Indigenous vegetation sods**

1. Sods (or clumps) of indigenous vegetation will be obtained from areas where they are removed during clearing for mining.
2. Indigenous vegetation sods shall be clean of weeds or invasive plants in specified areas before planting.
3. Re-vegetation sods shall be planted in strips to reduce erosion.
4. Sodding shall take place on moist, rock free topsoil that has been scarified.
5. Sods, once harvested, shall not be allowed to dry out and shall be planted within 30 hours of being removed from the soil or growing medium. If necessary, they shall be lightly watered prior to planting.
6. Sods shall be planted so they abut tightly against one another. The first row shall be in a straight line with subsequent rows planted so that the joints are staggered. Any gaps shall either be planted with a sod reduced to the gap size or filled with topsoil.
7. Where grass sods are planted on slopes steeper than 1:2, wooden stakes of 500 mm diameter shall be used to anchor the sods in position.
8. In the absence of rain, sods shall be well watered after planting and not be allowed to deteriorate through a lack of moisture.
9. Where grass sods are planted in the floodplain, wooden stakes of 500mm in diameter shall be used to anchor the sods in position.

### **Harvested seed**

1. Indigenous seed shall be harvested in areas which are free of alien/invasive vegetation, either at the site prior to clearance or from suitable neighbouring sites.
2. Following harvesting, the seed shall be dried under cool airy conditions. The seed shall be insect free and shall be stored in containers under cool conditions that are free of rodents or insects. No wet, mouldy or otherwise damaged seed is acceptable. Seed harvested by hand from selected species, should be treated and stored separately.
3. Seed gathered by vacuum harvester or other approved mass collection method, from suitable shrubs or from the plant litter surrounding the shrubs shall be kept apart from individually harvested seed.
4. Harvested seed obtained by means of vacuum harvesting, shall be free of excessive quantities of organic and/ or substrate material.

### **Planting trees, shrubs and herbs**

1. Where planting is not direct, the plants must be brought to an approved holding area in the intended planting area where they shall be suitably maintained. The operation of relocation from the nursery to the planting site must occur on the same day so as to minimise losses through death and to maintain or improve their condition at delivery.

2. During transplanting of indigenous plants, care shall be taken to ensure that they are not exposed to the sun. The roots as well as the leaves shall be covered with wet hessian to limit transpiration during transportation and storage. Plants shall be kept in this state for as short a time as is reasonably possible.
3. Planting shall occur as specified in this specification or planting/ landscaping plan.

### **Planting guidelines**

1. The size of holes shall be sufficiently large to ensure that the entire root system is well covered with topsoil, without having to be compressed. The soil around the roots of the plants being transplanted shall not be disturbed. Topsoil and subsoil from the hole shall be stored nearby to be replaced to the same depth intervals from which it was originally removed.
2. Shrubs shall be planted 1-2 m apart.
3. Plugs of herbs shall be planted at densities of up to 12 per 1 m<sup>2</sup>.
4. Bulbous plants shall be planted in selected areas and shall be protected from moles using rock linings to the holes and surface soil.
5. Before the placement of the plant specimens into prepared holes, the holes shall be watered substantially.
6. Plants shall be carefully transplanted into holes.
7. Plant holes shall be back-filled using soil removed from the hole.
8. The topsoil shall be replaced at the same depth intervals at which it was excavated. The soil shall be lightly compacted and well watered.
9. Care shall be taken to keep root damage to a minimum when transplanting seedlings. Where plants have a taproot this shall not be cut. Excess foliage, flowers and side branches shall be pruned.
10. Leaf litter or cleared vegetation should be placed around the planted tree to retain water.
11. Large rocks shall be placed around the base of planted trees in fire-prone environments.
12. Plants planted at the water's edge in wetlands and rivers shall be planted as follows:
  - a. Wetland material harvested from existing wetland areas shall be transplanted directly to the newly created wetland area, along with as much soil, and surrounding material as possible.
  - b. Indigenous shrubs and small trees shall be planted 3 m apart
  - c. Bulrushes, reeds, sedges and herbs shall be planted in sods 0.4-0.5 m apart or as circumstances dictate.
13. Plants shall be watered immediately after transplanting to ensure that the soil is wet around the plants. If necessary additional soil must be added after initial watering to fill any subsidence back up to ground level.

### **Monitoring**

All areas disturbed during construction will be monitored for a two to three year period until a suitable vegetation cover is obtained.

## **5.9 CONCLUSION**

Although an effort has been made to ensure that all foreseeable actions and potential mitigations or management actions are contained in this document, the EMPr should be seen as a day to day management document. The EMPr thus sets out the environmental standards, which would be required to minimise the negative impacts and maximise the positive benefits of the hard rock quarry. The EMPr could thus change daily, and if managed correctly lead to a successful operation.

All attempts should be made to have this EMPr available, as part of any tender documentation, so that the engineers and Quarry Operators are made aware of the potential cost and timing implications needed to fulfil the implementation of the EMPr, thus adequately costing for these.

## APPENDIX A RECOMMENDED BASIC ENVIRONMENTAL EDUCATION MATERIAL

### WHAT IS THE ENVIRONMENT?

- Soil
- Water
- Plants
- People
- Animals
- Air we breathe
- Buildings, cars and houses



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### WHY MUST WE LOOK AFTER THE ENVIRONMENT?

- It affects us all as well as future generations
- We have a right to a healthy environment
- A contract has been signed
- Disciplinary action (e.g. construction could stop or fines issued)

## HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/ foreman
- Team work
- Follow the rules in the EMP



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## WORKING AREAS

Workers & equipment must stay inside the site boundaries at all times



## ANIMALS

- Do not injure or kill any animals on the site
- Ask your supervisor or Contract's Manager to remove animals found on site



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## TREES AND FLOWERS

- Do not damage or cut down any trees or plants without permission
- Do not pick flowers



## SMOKING AND FIRE

- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Do not light any fires without permission
- Know the positions of fire fighting equipment
- Report all fires
- Do not burn rubbish or vegetation without permission



## PETROL, OIL AND DIESEL

- Work with petrol, oil & diesel in marked areas
- Report any petrol, oil & diesel leaks or spills to your supervisor
- Use a drip tray under vehicles & machinery
- Empty drip trays after rain & throw away where instructed





## DUST

Try to avoid producing dust –  
Use water to make ground &  
soil wet



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## NOISE

- Do not make loud noises around the site, especially near schools and homes
- Report or repair noisy vehicles



## TOILETS

- Use the toilets provided
- Report full or leaking toilets



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## EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins



## RUBBISH

- Do not litter – put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly



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## TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers - check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill



## FINES AND PENALTIES

- Spot fines may be issued
- Your company may be fined
- Removal from site
- Construction may be stopped



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## PROBLEMS - WHAT TO DO!

- Report any breaks, floods, fires, leaks and injuries to your supervisor
- Ask questions!



**Example of an environmental complaints and incidents register**

ENVIRONMENTAL COMPLAINTS REGISTER							
CONTRACT TITLE:							
CONTRACT NUMBER:							
DATE	COMPLAINT	COMPLAINT MADE BY (Include Contact Details)	ACTION REQUIRED	RESPONSIBLE PERSON	ACTION IMPLEMENTED	DATE ACTION IMPLEMENTED	CHECKED BY ECO

**ENVIRONMENTAL INCIDENTS REGISTER**

**CONTRACT TITLE:**

**CONTRACT NUMBER:**

<b>DATE</b>	<b>INCIDENT (What, where, how, possible impacts)</b>	<b>REPORTED BY</b>	<b>ACTION REQUIRED</b>	<b>RESPONSIBLE PERSON</b>	<b>ACTION IMPLEMENTED</b>	<b>DATE ACTION IMPLEMENTED</b>	<b>CHECKED BY ECO</b>


**APPENDIC B**  
**HERITAGE IMPACT ASSESSMENT**

DRAFT



## APPENDIX C PUBLIC PARTICIPATION DOCUMENTATION

### Newspaper Advert:



**PROPOSED REHABILITATION OF SECTION 7 ON THE N9 BETWEEN MIDDELBURG AND CARLTON HEIGHTS, EASTERN CAPE.**

**NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT  
AND INVITATION TO REGISTER AS AN I&AP**

Notice is hereby given in terms of Regulation 54(2) published in Government Notice No. R543 under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) (NEMA), of the intent to submit an Environmental Impact Assessment (EIA) application to the Department of Environmental Affairs (DEA).

**Proponent and Location:**  
SANRAL (South African National Roads Agency Ltd.) is proposing the rehabilitation of Section 7 on the N9 National Road between Middelburg and Carlton Heights.

**Project Activities:**  
The proposed project includes widening of the existing road, demolishing and reconstructing the rail over the road bridge, and the upgrade and reconstruction of a number of river bridges. The process will also include a Water Use License application as regulated by the National Water Act (Act No. 36 of 1998), and a quarry mining license as regulated by the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002).

**Listed Activities:**  
The proposed project requires a BASIC ENVIRONMENTAL ASSESSMENT due to the following activities listed in terms of GN R 544:

- Activity 47 (i & ii): The widening of a road by more than 8 meters, or the lengthening of a road by more than 1 kilometer
  - (i) Where the existing reserve is wider than 13.5 meters
  - (ii) Where no reserve exists, where the existing road is wider than 8 meters.
- As well as Activities 11 (ii) and 39 (ii) of GN R544.

Coastal & Environmental Services has been commissioned to undertake the Environmental Impact Assessment. You are hereby invited to register as an Interested & Affected Party (I&AP). Please submit your name, contact information and any comments to the contact person below within 30 days.

For more information, registration as an I&AP or submission of written comments contact by post, phone, fax or e-mail:

Contact details: Mr Roy de Kock, PO Box 8145, East London, 5210, Tel 043 742 3302, Fax: 043 742 3306, e-mail:  
[r.dekock@cesnet.co.za](mailto:r.dekock@cesnet.co.za)

Date of advert: 21 July 2011



**I&AP Database:**

Organisation/association	Name/contact person	Address	e-mail	Tel:	Fax:	cell
<b>Identified Stakeholders</b>						
DWA	Landile Jack (WQM)		<a href="mailto:jackl@dwa.gov.za">jackl@dwa.gov.za</a>	(043) 748 5340		082 887 6458
	Lizna Fourie (Licensing & WMA 12)		<a href="mailto:FourieL4@dwa.gov.za">FourieL4@dwa.gov.za</a>			
	Mgxwati Lungiswa (WMA 15)		<a href="mailto:MgxwatiL@dwa.gov.za">MgxwatiL@dwa.gov.za</a>			
SAHRA	M Galimberti		<a href="mailto:mgalimberti@sahra.org.za">mgalimberti@sahra.org.za</a>			
Municipal Manager (IYM)	Mr Mzwandile Sydney Tantsi	PO Box 24, CRADOCK, 5880	-	(048) 801 5000	(048) 881 1421	
Dept of Public Works	Mr Johan van der Walt	Private Bag X3913, Port Elizabeth, 6056	<a href="mailto:johan.vanderwalt@dpw.gov.za">johan.vanderwalt@dpw.gov.za</a>	041 408 2003	041 484 4226	
DEDEA	Mr M Makosonke	PO Box 9636 Queenstown, 5320	<a href="mailto:mncedisi.makosonke@deaet.ecape.gov.za">mncedisi.makosonke@deaet.ecape.gov.za</a>			
			-			
<b>Surrounding Landowners</b>						
F12/3, F12/5	John Moore (Wolwekop)	PO Box 441 Middelburg		049 842 3011		
F12/11	Gerhard Beets (Ebenhaeser)	PO Box 542 Middelburg				
Beskuitfontein trust	B.P. ERASMUS (Pieter)	P.O. BOX 62 Middelburg 5900	<a href="mailto:bpe@intekom.co.za">bpe@intekom.co.za</a>	049842 2017	049842 2017	0825587178
Peet Hough Family Trust	F12/2					
RSA	F81/0					
<b>I&amp;AP's</b>						
African Crane Conservation Programme, Endangered Wildlife Trust	Bradley Gibbons	P O Box 40, Middelburg, Eastern Cape, 5899	<a href="mailto:bradleyg@ewt.org.za">bradleyg@ewt.org.za</a>			

**Copy of notification letter:**

18 July 2011

Dear Stakeholder, Landowner and I&AP

**Notification of intent to submit an application for Environmental Impact Assessment-Proposed rehabilitation of Section 7 on the N9 National Road between Middelburg and Carlton Heights, Eastern Cape.**

CES has been appointed to undertake an Environmental Impact study (EIA) in accordance with the regulations set out in the National Environmental Management Act 1998 (Act No. 107 of 1998). Notice is hereby given in terms of Regulation 56(2) published in Government Notice No. R543 under Chapter 5 of the National Environmental Management Act (Act 107 of 1998), of the intent to submit an application for an Environmental Impact Assessment for the proposed rehabilitation of Section 7 on the N9 National Road between Middelburg and Carlton Heights, Eastern Cape. The process will also include a Water Use License application as regulated by the National Water Act (Act No. 36 of 1998), and a quarry mining license as regulated by the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002).

In order to apply for authorisation for the investigation, assessment and communication of potential impacts of the activities must follow the procedure as described in regulations 27 to 36 of the Environmental Impact Assessment Regulations, (2010), promulgated in terms of section 24(5) of the Act.

The proposed project is subject to a Basic Impact Assessment in terms of the following listed activities:

<b>GN R 544, 18 June 2010</b>	<ul style="list-style-type: none"><li>• <b>Activity 11 (iii):</b> The construction of bridges within a watercourse or within 32 meters of a watercourse.</li><li>• <b>Activity 39:</b> The expansion of bridges within a watercourse of within 32 meters of a watercourse.</li><li>• <b>Activity 47 (i &amp; ii):</b> the widening of a road by more than 6 meters where the existing reserve is wider than 13.5 meters or where no reserve exists and the existing road is wider than 8 meters.</li></ul>
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This proposed project will be registered with the Department of Environmental Affairs (DEA).

CES invites you as an Interested and Affected Party (I&AP) to actively participate in the Environmental Impact Study (EIA) through a public participation process. This is to ensure that the environmental impact is taken in consideration, to ensure public insets, and to supply sufficient information to make an informed decision on the proposed activity.

Included is the Background Information Document (BID). This document supplies information on the proposed project, as well as the EIA process and the public participation process that will be followed during the EIA of the proposed project.

We would like to thank you beforehand for taking part in this public participation process, and is looking forward to your valuable input.

Please contact the following person more information or to register as an I&AP.

**Consultant:**

Coastal & Environmental Services  
Attn: Roy de Kock  
PO Box 8145  
East London  
Tel: 043 742 3302  
Fax: 043 742 3306  
E-mail: [r.dekock@cesnet.co.za](mailto:r.dekock@cesnet.co.za)

Kind regards

Roy de Kock  
Environmental Consultant  
Coastal and Environmental Services

**Proof of notification:**

**List of REGISTERED LETTERS**  
**Lys van GEREГИSTREERDE BRIEWE**  
*(with an insurance option/met 'n versekeringsopsie)*



**Full tracking and tracing/Volledige volg en spoor**

Name and address of sender:  
 Naam en adres van afsender: Es. Zimane Tenace,  
Hampton Court, Quigley, Et, 5201

Engineered Navras  
 Toll-free number  
 Tolvry nommer  
**0800 111 502**

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekeringsbedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Alpha Track and Trace customer copy Plak Volg-en-Spoor-Merkafskrif
1	<u>Mr M S. Tantsi, Municipal Manager, Po Box 24, Cradock, 5370</u>					REGISTERED LETTER GEREГИSTREERDE BRIEF RIP 480 297 356 ZA CUSTOMER COPY 30208
2	<u>Mr. J. Moore, Po Box 441, Middelburg, Eastern Cape, 5400</u>					REGISTERED LETTER GEREГИSTREERDE BRIEF RIP 480 297 356 ZA CUSTOMER COPY 30208
3	<u>Mr G. Brown, Po Box 542, Middelburg, Eastern Cape, 5400</u>					REGISTERED LETTER GEREГИSTREERDE BRIEF RIP 480 297 356 ZA CUSTOMER COPY 30208
4						
5						
6						
7						
8						
9						
10						

Number of letters posted: 3 Total  
 Getal briewe gepos: 3 Totaal R R R R

Signature of client:

Signature of accepting officer:



The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurances of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

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7/12/08



**Comments and Reports:**

