mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

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

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

NAME OF APPLICANT: **The South African National Roads Agency Soc Limited (SANRAL)**

TEL NO: 012 844-8000

FAX NO: 012 844-8200

POSTAL ADDRESS: P O Box 415, Pretoria, 0001

PHYSICAL ADDRESS: 48 Tambotie Avenue, Val De Grace, Pretoria

FILE REFERENCE NUMBER SAMRAD:

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE SCOPING PROCESS

The objective of the scoping process is to, through a consultative process-

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

SCOPING REPORT

2) Contact Person and correspondence address

a) Details of:

(i) The EAP who prepared the report

Name of the Practitioner: Dr Josephine Bothma from Chameleon Environmental

Tel No.: 012 809-1704 or 082 571 6920

Fax No.: 086 6855 080

e-mail address: ce.j@mwebbiz.co.za

(ii) Expertise of the EAP.

(1) The qualifications of the EAP
(with evidence attached as **Appendix 1**).

PhD in Environmental Management. Please find proof of qualifications of EAP in Appendix 1.

(2) Summary of the EAP's past experience
(Attach the EAP's curriculum vitae as **Appendix 2**)

The EAP that prepared this report is Dr J Bothma from Chameleon Environmental. The Environmental Assessment Practitioner (EAP) has the appropriate skills and experience to undertake the required studies for the proposed project. Dr Bothma has:

- Experience in undertaking environmental studies for linear development projects. The EAP has specific experience in EIAs for National Roads for the South African National Roads Agency Soc Limited and other clients.
- Experience in environmental studies for borrow pits and quarries.
- The EAP is registered as an Environmental Assessment Practitioner with EAPSA with registration number 0082/06.
- Proven ability to timeously produce thorough, readable and informative documents.
- Adequate recording and reporting systems to ensure the preservation of all data gathered.
- A good working knowledge of all relevant and applicable policies, legislation, guidelines, norms and standards.
- The EAP does not have any links to engineering firms, construction companies, or financial institutions, and would be able sign the required declarations of independence to be submitted to the relevant environmental authorities.

Dr Bothma has a PhD in Environmental Management with extensive experience in the environmental field. She was previously the Environmental Manager for the South African National Roads Agency Soc Limited where she was responsible for the management of the environmental section at the Agency and consequently has gained extensive experience in project management and EIAs for major national road projects. Dr Bothma is a founder member of Chameleon Environmental since August 2006, a specialist environmental consulting company based in Pretoria, South Africa but operates nationwide. The company provides a broad range of environmental consulting services to the public and private sectors.

She has:

» Twenty-seven (27) years' experience in the environmental field
» Sixteen (16) years' experience in Project Management
» Project management of large environmental assessment and environmental management projects.

Please see CV in Appendix 2.

b) Description of the property.

Farm Name:	Borrow Pit 3: Rem Erf 42, Portion 0 and Rem Erf 61 Borrow Pit 4: Rem erf 62, Portion 0
Application area (Ha)	Borrow pit 3: 4.9 ha Borrow Pit 4: 4.9 ha
Magisterial distract:	Mthatha
Distance and direction from nearest town	Borrow Pit 3: 40.4 km south to Mthatha 27.9 km north to Qumbu Borrow pit 4: 39.1 km south to Mthatha 25.6 km north to Qumbu
21 digit Surveyor general code for each farm portion	Borrow Pit 3: C1080001 00000061 00001 C1080001 00000042 00000 Borrow Pit 4: C1080001 00000062 00000

c) Locality map

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

Please see locality maps of the mining areas in Appendix 3.

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

(i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

NAME OF ACTIVITY (All activities including activities not listed) **(E.g. E**xcavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)**
Gravel material will be mined. Code: Gr, Commodity: Gravel, Type_code: MIN, Type_Description: Minerals. Access to the mining areas will be from existing gravel roads in the area. Opencast mining will take place. Borrow pit excavations will, therefore be present. The following mining components will also be found on site: - Temporary toilets, - Generator and fuel storage, - Stockpiles: Subsoil, overburden, spoil, topsoil, - Gravel stockpiles, - Crusher, - Weigh bridge; - Temporary offices. The mined gravel material will be hauled to the construction site.	Borrow pit 3: 4.9 ha Borrow pit 4: 4.9 ha	x	Activities 21, 22, 27 GNR. 983 Activity 21 GNR R. 984

Blasting will be undertaken should a bedrock be encountered.			

(ii) Description of the activities to be undertaken

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

SANRAL intends to open a number of borrow pits and quarries in order to obtain the necessary gravel material for the Rehabilitation of National Route 2 Section 19 between Nqadu (Km 22.0) and Mzeke River (Km 55.4).

Opencast mining will take place.

The size of the borrow pits are the following:

Borrow pit 3: 4.9 ha

Borrow Pit 4: 4.9 ha

The following amount of material will be mined:

Borrow pit 3: 90 000 m3

Borrow Pit 4: 30 000 m3

The mining areas will be mined to the following depth:

Borrow pit 3: 8m with maximum bench height of 5m.

Borrow Pit 4: 5m

The slopes will be developed to a 1:3 (gradient).

The following mining components will be found on site:
- Temporary toilets,
- Generator and fuel storage,
- Stockpiles: Subsoil, overburden, spoil, topsoil,
- Gravel stockpiles,
- Crusher,
- Weigh bridge;
- Temporary offices.

The topsoil from the mining areas will be stored in a perimeter berm while the remainder of the material is mined using an excavator and removed from the mining area site to the construction of the road. The vegetation material from the mining areas would be stripped and stockpiled for use during the rehabilitation phase.

The gravel mined will be stockpiled within the borrow pit or quarry.

The mined gravel material will be hauled to the construction site.

Blasting will be undertaken should a bedrock be encountered.

The following process will be undertaken during the mining operation:

a. Vegetation Stripping

The areas was mined before but will be extended during this project.

All vegetative material would be retained to ensure proper vegetation establishment during the rehabilitation phase. The vegetation material from the borrow pit would be stripped by a bulldozer and stockpiled for use during the rehabilitation phase.

b. Topsoil Stripping

All topsoil from the borrow pit or quarry would be stripped and stockpiled by a bulldozer for redistribution over the site during the rehabilitation phase. Overburden rocks and coarse material shall be placed concurrently in the excavations or stored adjacent to the excavation, if practicable, to be used as backfill material once the ore or gravel has been excavated. All topsoil, subsoil and vegetative material to be stockpiled for use during the rehabilitation phase.

c. Opencast Mining

The required gravel material will be excavated by an excavator and taken to the road construction area by trucks. Excavations shall take place only within the approved demarcated mining area.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a Description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**
NEMA, EIA Regulations 2014, GN R. 983	Activities 21 22 and 27 GNR. 983
NEMA, EIA Regulations 2014, GN R. 984	Activity 21
National Environmental Management Act, 1998 (Act No. 107 of 1998) The National Environmental Management Act, 1998 (Act No. 107 of 1998): [NEMA] was enacted in November 1998. NEMA provides for cooperative governance by establishing principles for decision-making on matters affected the environment, institutions that will	General objectives of Integrated Environmental Management as set out in section 23 of NEMA taken into account

promote co-operative governance and procedures for coordinating environmental functions, public participation and sustainable development.	
National Water Act (Act No. 36 of 1998) The application for a Water Use License in terms of the National Water Act, 1998.	Stream crossings and possible application of Water Use License or general authorization at the Department of Water and Sanitation
National Heritage Resource Act 1999 (Act No. 25 of 1999) In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) comment will be obtained from SAHRA.	Any development exceeding 5000 sq m area requires input from SAHRA.
Regulation 15 of the Conservation Act of Agricultural Resources Act, 1983 (Act 43 of 1983)	Ecological study Alien vegetation identification on site

f) Need and desirability of the proposed activities.

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

Gravel material is an essential material for road building purposes. The gravel material is obtained from of the following sources:

- From commercial sources;
- From excavations within the road reserve;
- From excavations of mining areas and quarries outside the road reserve.

During the design stage of the project, the consulting engineers to the project investigated the demand for gravel material as well as the most suitable commercial sources in close proximity to the project.

It was found that no commercial sources are available in close proximity to the site that is suitable for the road works. The use of only commercial sources of gravel/aggregates for a project of this magnitude would also be inordinately expensive, and would render the project unviable. It was therefore, decided that investigations would be conducted to obtain additional rock or gravel for the project from mining area in close proximity to the road project.

The project is needed in order to obtain the required gravel material for the rehabilitation of the N2 Section 19 between Nqadu (Km 22.0) and Mzeke River (Km 55.4). Should the opening of the borrow pits and quarries not be undertaken, the necessary gravel material for the rehabilitation of the N2 will not be available and the N2 will not be able to be upgraded and/or expanded. The traveling public could, therefore, experience increasingly unsafe driving conditions.

The N2 forms part of the strategic national road network. The additional traffic lanes are proposed to accommodate increased capacity and reduce congestion and assist traffic flow. The road rehabilitation will also cater for future traffic demand and support economic growth. This could benefit the communities in the area including local

residents, motorists, the road freight industry and its customers. The upgrade of the road could,
therefore, ensure safer driving conditions for the travelling public by enabling vehicles to travel more efficiently and smoothly with less congestion as a result of the additional passing lanes to be constructed that will allow vehicles to safely pass slower moving trucks and vehicles.

The proposed opening of the borrow pit is necessary to ensure the safety of the traveling public. This will also accommodate the predicted increase in traffic volume and avoid high driver frustration.

The volume of heavy vehicles on the N2 is expected to increase significantly over the next 20 years. Traffic volumes and design principals determine that the road needs to be maintained to ensure the safety of the traveling public.

Indirect impacts:
Possible traffic accidents as a result of poor driving conditions.
Possible injury and death of travelling public
Possible delays to travel destinations.
Increase in travel costs.

Cumulative impacts:

High health care costs as a result of traffic accidents.

g) Period for which the environmental authorisation is required

5 years

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

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

i) Details of all alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

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

a. Geological tests in the surrounding area show insufficient quality of gravel material for road construction purposes. The test showed sufficient gravel material at all the borrow pit sites to be used for the construction of the proposed rehabilitation of the National Route 2.
b. Opencast mining will take place as it they are borrow pits and quarries to be mined. Borrow pit and quarry excavations will, therefore be present.
c. The layout of the activity was determined by the following:

A specialist ecological, aquatic and heritage study was undertaken for all the sites.

All the borrow pits were previously mined areas.
There is a small semi-perennial stream south west of Borrow Pit 3. The stream is a tributary of the Xokonxa River.
There is a rocky outcrop to the north west of borrow pit 3.
There are no watercourses within the proposed Borrow Pit sites of BP 4, including rivers, streams, drainage lines and wetlands. However, the prospective Borrow Pits are close to the Xokonxa River.

d. The technology used at the activity will be a bulldozer for stripping the topsoil. An excavator will be used for the opencast mining activities. The excavated gravel material will be taken to the construction site with trucks.
e. Open cast mining will be undertaken for the excavation of the gravel material at the borrow pit during the operational phase. The gravel material will be excavated by an excavator and taken to the construction site on the N2.
f. Should the mining of the gravel not be allowed, the necessary material for the upgrade of the N2 will not be available and the improvement of the N2 will not be able to continue.

ii) Details of Public Participation Process Followed

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

Please refer to the Report on the Results of Consultation in Appendix 5.

A public participation process was undertaken in accordance with the EIA Regulations, 2014.

The public participation and communication process aims to identify issues in order to maximise the social and environmental benefits, and to minimise the social and environmental costs of the proposed project. Interested and affected parties (I&APs) were consulted and afforded the opportunity to participate. The I&APs were informed and involved in the project from the outset in order to promote participation and transparency.

The aim of this public participation process is to achieve the following broad goals:

- identification of all key I&APs and stakeholders;
- the active involvement of all I&APs with respect to decision making;
- an exchange of information relevant to the proposed project through Background Information Documents (BID), consultations and newspaper advertisements.
- the development of an understanding with regards to the broader project objectives and goals and knowledge of the project; and
- the identification of issues and concerns with regards to all potential alternatives associated with the proposed development.

The following approach was followed in undertaking the public participation process:

a. Identification of and Consultation with I&APs

The first step in the public participation process was to identify the key I&APs. A list of the registered I&APs is included in Appendix 5.

b. Advertising

In accordance with the EIA Regulations, 2014 an advertisement was placed requesting I&APs to register their interest in the project. An advertisement was placed in the **Daily Dispatch of 4 April 2016**. A copy of the advertisement is included in Appendix 5.

c. Site Notice

Site notifications in English in A2 format requesting comments or objections were placed on site on 11 March 2016 at the site and the Community Library at the corner of York and Victoria streets, Mthatha. The site notices were placed at the borrow pits. Photographs of the site notice are included in Appendix 5.

A copy of the site notice is included.

d. Notification Letter and Background Information Document

Notification letters about the project and a Background Information Document were sent out to relevant Government Departments, the particular Ward Councillor and affected landowners that would be relevant to this project.

See Appendix 5.

e. Comments and Response Report

A comments and response report was drafted that included all the issues raised by the Interested and/or Affected Parties as well as the responses to the issues raised. The Comments and Response report is included in Appendix 5.

f. Local Authority Involvement

Letters were forwarded to the King Sabata Dalindyebo Local Municipality and the Mhlontlo Municipality. The letters are included in Appendix 5.

g. Meetings

The CLO appointed had meetings with respected landowners.

The minutes of the meetings are included in Appendix 5.

h. Review of Draft Scoping Report

The Draft Scoping Report was made available to the public for review and comment, within an allocated 30-day period. A copy of the report was available to I&APs at the following venue:

- Mthatha public library, Cnr York and Victoria streets, Mthatha
- Public library, Mhlotho municipality

iii) Summary of issues raised by I&APs

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

Interested and Affected Parties **List the names of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted.**		**Date** **Comments** **Received**	**Issues raised**	**EAPs response to issues as** **mandated by the applicant**	**Section and Paragraph Reference in This report Where the Issues and or Responses were incorporated.**
AFFECTED PARTIES					
Landowner/s	X				
Mr Sebitso Thooka Department of Rural Development and Land Reform 40 Blakeway road		23 March 2016	No issues raised	No response necessary	None
Mr S Sotshongaye Municipal Manager Mhlontlo Municipality		23 March 2016	No issues raised	No response necessary	None
Lawful occupier/s of the land	X				
Mr Mncedisi Nyikisa Chairperson: Tsolo community		11 March 2016	• Who is the applicant for the project? • What is a borrow pit? • Who will handle the land acquisition and	• The South African National Roads Agency Soc Limited is the applicant for the project. • A borrow pit is a small scale mining operation in order to obtain the required gravel material for road building purposes.	None

			compensation? • The land is owned by the Municipality.	• The company Manco/Aurecon JV will contact the Municipality with regard to land acquisition and compensation pertaining to regard to the borrow pit.	
Chief Armstrong Mungu Tsolo Community		6 April 2016	I am willing to co-operate with the Contractor and SANRAL in providing material from the BP.	No response necessary	None
Chief N Dipha Tsolo Community		6 April 2016	Will co-operate with some remuneration for the borrow pit.	The Manco/Aurecon JV will contact you with regard to any land acquisition issues and remuneration pertaining to this project.	None
Landowners or lawful occupiers on adjacent properties	X				
Mr Mncedisi Nyikisa Chairperson: Tsolo community		11 March 2016	• Who is the applicant for the project? • What is a borrow pit? • Who will handle the land acquisition and compensation?	• The South African National Roads Agency Soc Limited is the applicant for the project. • A borrow pit is a small scale mining operation in order to obtain the required gravel material for road building purposes. • The company Manco/Aurecon JV will contact you with regard to land acquisition and compensation with regard to the borrow pit.	None
Mr Armstrong Mungu		6 April 2016	I am willing to co-	No response necessary	None

Tsolo Community			operate with the Contractor and SANRAL in providing material from the BP.		
Chief N Dipha Tsolo Community		6 April 2016	Will co-operate with some remuneration for the borrow pit.	The Manco/Aurecon JV will contact you with regard to any land acquisition issues and remuneration pertaining to this project.	None
Municipal councillor	X				
Councillor NV Roji King Sabata Dalindyebo Local Municipality Ward 10		23 March 2016	No response	No response necessary	None
Counsillor A Dawedi Councillor Ward 14 Qumbu		23 March 2016	No response	No response necessary	None
Municipality	X				
Mr. Mvuyisi Nofemele Municipal Manager King Sabata Dalindyebo Local Municipality		23 March 2016	No response	No response necessary	None
Mr S Sotshongaye Municipal Manager Mhlontlo Municipality		23 March 2016	No response	No response necessary	None
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA)	X				
Ms B Macamba Secretary Dept of Social Development Tsolo		23 March 2016	No response	No response necessary	None

Mr Tandile Ngcume Department of Water and Sanitation		23 March 2016	No response	No response necessary	None
Communities	X				
Mr Mncedisi Nyikisa Chairperson Tsolo Community		11 March 2016	• Who is the applicant for the project? • What is a borrow pit? • Who will handle the land acquisition and compensation?	• The South African National Roads Agency Soc Limited is the applicant for the project. • A borrow pit is a small scale mining operation in order to obtain the required gravel material for road building purposes. • The company Manco/Aurecon JV will contact you with regard to land acquisition and compensation with regard to the borrow pit.	None
Chief Armstrong Mungu Tsolo Community		6 April 2016	I am willing to co-operate with the Contractor and SANRAL in providing material from the BP.	No response necessary	None
Chief N Dipha Tsolo Community		6 April 2016	Will co-operate with some remuneration for the borrow pit.	The Manco/Aurecon JV will contact you with regard to any land acquisition issues and remuneration pertaining to this project.	None
Dept. Land Affairs	X				
Mr Sebitso Thooka Department of Rural Development and Land Reform 40 Blakeway road		23 March 2016	No response	No response necessary	None
Traditional Leaders	X				

Chief Armstrong Mungu Tsolo Community		6 April 2016	I am willing to co-operate with the Contractor and SANRAL in providing material from the BP.	No response necessary	None
Chief N Dipha Tsolo Community		6 April 2016	Will co-operate with some remuneration for the borrow pit.	The Manco/Aurecon JV will contact you with regard to any land acquisition issues and remuneration pertaining to this project.	None
Dept. Environmental Affairs	X				
Mr. Sizakele Gabula Acting Regional Director Eastern Cape Department of Economic Development, Environmental Affairs and Tourism		23 March 2016	No response	No response necessary	None
Other Competent Authorities affected					
South African Heritage Resources Agency	X	Posted on webpage	No response	No response necessary	None
OTHER AFFECTED PARTIES	X				
Dr N S Sotsopo Dr Malizo Mpehle Memorial Hospital		24 March 2016	No response	No response necessary	None
INTERESTED PARTIES	x				
Mr Zola Gwanya Landowner By phone: 4 April 2016		4 April 2016	Will people have to be relocated as a result of the widening of the road?	No people will have to be relocated as a result of the widening of the road.	None

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

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

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

- **Topography**

The topography of the study area varies between undulating plains and hilly countryside supporting species-poor, sour, wiry grassland. The grassy slopes contain patches of bush clumps. The floral species makeup differs slightly depending on whether the site is moist or dry. The height above sea level of the study area, as one drives along the National Road N2, varies from a maximum of about 1 107m to a minimum of about 780m.

Borrow Pit 3 is at a lower average height above sea level than Pit 4, at 975m. The elevation across the site varies from about 970m to 980m. The gradient average varies from 6,8% to 5,2%. The centre of the site is a hilltop, so that the site slopes downwards from here to the west and the east. To the north is a rocky outcrop, with the site sloping downwards from here to the south.

Borrow Pit 4 is situated on top of a hilly area, with an average height above sea level of 1 067m. Elevation varies from about 1 051m to 1 078m, with the average gradient being 5,2%. The overall slope is from east to west and from north to south.

- **Geology and Soils**

Mudstones of the Tarkastad and Adelaide Subgroups (Beaufort Group, Karoo Supergroup) underlie most of the study area of the Borrow pits and Quarries, with highly leached soils typical of the Fa land type (Mucina & Rutherford, 2006). Land types of the region are predominantly Fa, with Ac occur but of less importance.

- **Climate**

The study area is situated within the higher rainfall areas of South Africa. Summer rainfall, with a mean annual precipitation of between 600–970 mm is common in the region of the moist grassland of the study area. Frost is rate but does occur occasionally during the drier, winter months. The Borrow Pit and Quarry sites are situated within the Temperate Interior Climatic Zone of the country.

Tsolo receives a high average annual rainfall of around 749mm. The warmest month of the year is January, with an average temperature of 20.8 °C. July is the coldest month, with temperatures averaging 11.3 °C.

- **Land cover**

The landcover or landuse of the general region in which the Quarries (study site) are situated is a mix of open grassland (some in fair condition, but large areas degraded), grazing lands, cultivated lands and built-up areas. The urbanisation is generally characterised by rural settings of densely populated to sparsely populated patches spread across the region. Free-roaming cattle from nearby villages often graze open grassland areas. Although the quarry sites are close to small villages, none of the sites are actively used lands in terms of cultivation, housing, etc.

Both borrow pit sites are old / existing borrow pits and are therefore highly transformed and degraded areas. BP3 and BP4 are within grassland areas.

- **Vegetation**

South Africa is divided up into nine primary Biomes. The two Borrow Pits are both situated within the Grassland Biome, but close to the Savanna Biome.

Grassland vegetation types are dominated by a single, lower layer of grasses, with the occurrence of middle layers of shrub and upper layers of trees being rare to absent, except in a few localised habitats such as koppies (rocky outcrops) and rocky ridges.

The Grassland Biome is predominantly subdivided into dry and moist grassland regions. Grassland veldtypes with a rainfall of +600mm per annum tend to be dominated by sour, andropogonoid grasses. While in veldtypes with an average rainfall of below 600mm rainfall, the sweet chloridoid grasses tend to be more common. Dry and moist grassland types are divided primarily on the basis of rainfall, with 500-700mm being the broad boundary. Historically, such as with the classification of veld types by JPH Acocks (1952) and AB Low & AG Rebelo (1998), these grasslands have been divided into sweet grasses (sweetveld) and sour grasses (sourveld) based primarily on agricultural or grazing criteria. In high rainfall areas (moist grasslands) sour grasses tend to dominate, while in low rainfall areas the sweet grasses (which are more palatable for livestock) tend to dominate. Grasslands (like any vegetation type) are also influenced and shaped by numerous other environmental factors such as temperature, soils and altitude.

Mucina and Rutherford (2006) subdivided the Grassland Biome into four main bioregions. Namely, Dry Highveld Grasslands; Drakensberg Grasslands; Meisic Highveld Grasslands; and Sub-Escarpment Grasslands. The major subdivisions of the Grassland Biome are based on gradients of altitude (height above sea-level) and moisture (rainfall). Altitude has a strong influence on climatic variables and an increase in altitude usually corresponds with an increase in rainfall and a decrease in temperature.

The Borrow Pits occur within the moist grassland regions of South Africa, which tend to be the high rainfall, moist, sour grasslands of South Africa. The four Quarries are within the Sub-Escarpment Grassland Bioregion of the Grassland Biome of South Africa.

According to the classification system of Mucina & Rutherford (2006) the borrow pits are within the veldtypes of Mthatha Moist Grassland and Drakensberg Foothill Moist Grassland.

- **Vegetation of the study area**

The vegetation of the study area is a species-poor area, which is characterised by sour, wiry grassland dominated by grasses such as *Eragrostis plana*, *Sporobolus africanus* and *Themeda triandra*. Indigenous trees in the region are rare, with undulating plains and hilly countryside covered by grassland. Patches of bush clumps with *Leucosidea sericea*, in wet areas, or *Acacia karroo*, *Diospyros lycoides* and *Ziziphus mucronata* in low-lying, dry sites occur.

The overall vegetation of Borrow Pit 3 is more bushveld in character with numerous thorn trees present, while that of Borrow Pits 4 is pure grassland with no or few trees and shrubs present. The trees present in the area are oftentimes alien species such as blackwattle. The vegetation of the study area and the region in which all the Borrow Pits are situated is predominantly that of treeless, grassy plains and hills.

Over-grazing, poor cultivation practices and general high levels of utilisation have led to degradation and transformation of much of the vegetation in the study area. According to Mucina & Rutherford (2006) shifting cultivation and the effects of development have caused continuous disturbance of the soil surface, which has led to secondary succession changes in the grassland. Erosion is a serious problem in the general area, with large incised dongas prominent throughout the study area.

No Red Data species (endangered or threatened) were observed during field investigations. According to the SANBI database no Red Data species have been recorded in the study area.

It is highly unlikely that any priority species occur at Borrow Pit 4 , but a few species may occur in the rocky outcrop at Borrow Pit 3.

- **Fauna**

No large- or medium-sized mammals or other wild faunal species were observed during field investigations, with the exception of some common bird species. The habitats present in the study area are not ideal for most Red Data fauna species. Care should still be taken to avoid impacting on any animals encountered. No Red Data faunal species were observed during site investigations. None are expected to be resident. Cattle are commonly present in the area.

(Source: Flori 2016

- **Air Quality**

The region is considered rural and the air quality fairly good.

- **Noise**

The current noise levels are low due to the rural nature of the area.

- Visual

Most of the Borrow Pits and quarries were already mined and severely disturbed.

- Sensitive Landscapes

Borrow pits:
There is a small semi-perennial stream south west of Borrow Pit 3. The stream is a tributary of the Xokonxa River.
There is a rocky outcrop to the north west of borrow pit 3.
There are no watercourses within the proposed Borrow Pit site of BP 4, including rivers, streams, drainage lines and wetlands. However, the prospective Borrow Pits are close to the Xokonxa River.

- **Sites of Archaeological and Cultural Interests**

A small, informal burial place is located approximately 300m (bearing = 255° true) from the edge of the planned expansion of borrow pit 4.

- Socio-Economic Aspects

The mining areas would have a positive impact on the regional socio-economic structure through its support of the development industry, profit generation contributing to tax revenue, employment creation and the skills development of its employees.

The respective landowners will be compensated by SANRAL for the borrow pit.

- Cumulative Impacts

The cumulative impacts associated with the establishment of the proposed mining areas could be the following:

- Additional traffic on the local roads during mining of the area;
- Limited influx of people in the area during mining of the area;
- Additional water and electricity supply to the area - limited, if any.

(b) Description of the current land uses.

The landcover or landuse of the general region in which the Borrow Pits (study site) are situated is a mix of open grassland (some in fair condition, but large areas degraded), grazing lands, cultivated lands and built-up areas. The urbanisation is generally characterised by rural settings of densely populated to sparsely populated patches spread across the region. Free-roaming cattle from nearby villages often graze open grassland areas. Although the quarry sites are close to small villages, none of the sites are actively used lands in terms of cultivation, housing, etc.

Both borrow pit sites are old / existing borrow pits and are therefore highly transformed and degraded areas. BP3 and BP4 are within grassland areas.

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

There is a small semi-perennial stream south west of Borrow Pit 3. The stream is a tributary of the Xokonxa River.
There is a rocky outcrop to the north west of borrow pit 3.
There are no watercourses within the proposed Borrow Pit sites of BP 4 including rivers, streams, drainage lines and wetlands. However, the prospective Borrow Pits are close to the Xokonxa River.

There is no existing infrastructure on the various sites.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

Please see map included in Appendix 6.

v) Impacts identified

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

The ***potential*** impacts associated with the mining areas have been identified as the following. Please see significance, probability and duration of impacts in the assessment of the impacts in Appendix 7:

CONSTRUCTION PHASE:

1. Vegetation stripping

Potential Impacts:
a. Dust Pollution
b. Soil Erosion
c. Noise Impact
d. Water pollution
e. Visual impact
f. Terrestrial ecology
g. Impact on uncovered heritage aspects
h. Contamination of site due to hydrocarbon spillage
i. Emissions from heavy vehicles

2. Stripping and stockpiling of topsoil

Potential Impacts:
a. Clearing of vegetation
b. Visual intrusion as a result of establishment of borrow pit
c. Dust nuisance caused by machinery stripping topsoil
d. Noise nuisance caused by machinery stripping topsoil
e. Infestation of weeds and alien vegetation on topsoil heaps
f. Loss of topsoil due to incorrect storm water management
g. Contamination of site due to hydrocarbons
h. Impact on uncovered heritage aspects
i. Emissions from heavy vehicles

OPERATIONAL PHASE

1. Blasting

Potential Impacts:
a. Health and safety risk posed by blasting activities
b. Dust nuisance caused by blasting activities
c. Noise nuisance caused by blasting activities

2. Excavations

Potential Impacts:
a. Visual intrusion associated with the excavation activities
b. Dust nuisance caused by excavation activities

c. Noise nuisance generated by excavation equipment
d. Contamination of surface or groundwater due to effluent runoff from excavation
e. Unsafe working conditions for employees
f. Potential damage to uncovered cultural and heritage aspects
g. Contamination of site due to hydrocarbons
h. Emissions from heavy vehicles
i. Water pollution

3. Crushing

Potential Impacts:
a. Dust nuisance due to the crushing activities
b. Noise nuisance due to the crushing activities
c. Contamination of site due to hydrocarbons

4. Stockpiling and Transporting of gravel material

Potential Impacts:
a. Visual intrusion associated with the stockpiled material and heavy vehicles transporting the gravel material
b. Loss of material due to ineffective storm water handling
c. Dust nuisance from stockpiled material and heavy vehicles transporing material
d. Degradation of access roads
e. Noise nuisance caused by heavy vehicles
f. Contamination of site due to hydrocarbons
g. Emissions from heavy vehicles
h. Water pollution

DECOMMISSIONING PHASE

1. Sloping and Landscaping during rehabilitation

Potential Impacts
a. Soil erosion
b. Health and safety risk posed by unsloped areas
c. Dust nuisance caused during sloping and landscaping activities
d. Noise nuisance caused during sloping and landscaping activities
e. Contamination of site due to hydrocarbons
f. Emissions from heavy vehicles

2. Replacing the topsoil and revegetating the disturbed area

Potential Impacts:
a. Loss of reinstated topsoil due to absence of vegetation
b. Infestation of the area with weed and invader plants

ALL phases: Proper functioning of sanitation systems.

vi) Methodology used in determining the significance of environmental impacts

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

Potential environmental impacts on the environment will be determined in terms of the following in order to determine the significance of each impact:

Nature:

A brief description of the environmental aspect being impacted upon by a particular action or activity is presented. Also:

- Probability (how likely is it that the impact will occur?)
- Magnitude (how severe will the impact be?)
- Duration (how long will the impact last?)
- Scale of the impact (what size of the area will be affected?)

Thereafter, mitigation measures will be proposed in order to reduce or eliminate negative impacts and enhance positive impacts. The impact of the proposed activity on the environment will be considered for the pre- construction, construction and operational phases. The necessary mitigation measures will be consolidated in the form of an Environmental Management Programme (EMPr).

Assessment of significance – method:

The significance of every environmental impact identified will be determined using the following approach:

In assessing the potential significance of an impact two aspects will be considered:

i) Occurrence
ii) Severity

Occurrence will be sub-divided into:

- Probability of occurrence
- Duration of occurrence

Severity will be sub-divided into:

- Magnitude (severity) of impact
- Scale/extent of impact

In order to assess each of these factors for each impact, ranking scales were employed as follows:

Probability:	Duration:
5 - Definite/don't know	5 - Permanent
4 - Highly probable	4 - Long-term*
3 - Medium probability	3 - Medium-term (5-15 years)
2 - Low probability	2 - Short-term (0-5 years)
1 – Improbable	1 - Immediate
0 – None	0 - None

Scale:	Magnitude:
5 – International	10 - Very high/don't know
4 – National	8 - High

3 – Regional	6 - Moderate
2 – Local	4 - Low
1 - Site only	2 - Minor
0 – None	0 - None

*impact ceases after operational life of the activity

Once the above factors had been ranked for each impact, the overall risk (environmental significance) of each impact will be assessed using the following formula: SP = (magnitude (M) + duration (D) + scale(S)) x probability (P). The maximum value is 100 significance points (SP). Environmental impacts will be rated as either of High, Moderate or Low significance on the following basis:

SP greater or the same as 60 indicates high environmental significance;
SP 31 greater or the same as 59 indicates moderate environmental significance;
SP ≤ 30 indicates low environmental significance.

Please see assessment of the impacts in appendix 7.

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

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

There were no concerns from I&APs regarding the layout of the borrow pits and quarries.

Positive impacts pertaining to the opening of borrow pit areas:

The gravel material mined will be used for the improvement of the N2 Section 19 between Nqadu (Km 22.0) and Mzeke River (Km 55.4). The N2 is part of the national road infrastructure. The road not only plays an important role in inter-regional trade within South Africa, but is extensively used by the travelling public for recreational use. The opening of the borrow pits for the upgrade of the N2 will provide a safer road and will, therefore, have a positive impact on the traveling public. The upgrade of the N2 could encourage business, industry and investment and assist in alleviating the high unemployment in the region as a whole.

The opening of the borrow pits for the upgrade of the N2 will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The construction of the road will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.

The construction of the road could also provide employment opportunities to the area.

Possible negative impacts pertaining to the opening of the borrow pit area:

The negative impacts associated with the opening of the borrow pits are the possible short term impacts associated with the construction phase i.e.

a. Dust Pollution
b. Soil Erosion

c. Noise Impact
d. Visual impact
e. Terrestrial ecology
f. Impact on uncovered heritage aspects
g. Contamination of site due to hydrocarbon spillage
h. Emissions from heavy vehicles
i. Possible water pollution

With the implementation of the EMPr, the significance of the impacts associated with the opening of the mining area are foreseen to be low.

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

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

There were no concerns from I&APs regarding the layout of the borrow pits and quarries. The following measures will be implemented by SANRAL to prevent or remedy any possible pollution or degradation of the environment by means of the appointed contractor that is contractually bind to implement the project after the tender process:

a. Possible dust and air pollution

- Dust generated will be carefully monitored by the OHS&E and should be suppressed by means of watering regularly, should it be required.
- Access roads will be watered regularly, especially in the dry winter months and in periods of high wind.
- Vegetation will not be unnecessary stripped.
- Domestic fires will be prohibited on site.
- Heavy vehicle will be serviced regularly to ensure emission control.
- All heavy vehicles, excavators and generators used for the mining will be in good working condition and will be serviced regularly.
- Should a vehicle have a break down, it will be serviced immediately.

b. Soil Erosion

- Topsoil will be removed over the whole mining area and stored in a perimeter berm. The height of the topsoil berm will not exceed 3m.
- The topsoil berm will be inspected for erosion daily.
- Minimal amounts of topsoil shall be lost due to erosion, either by wind or water. This can be facilitated through the grassing of topsoil stockpiles.
- Condition of soil in walk or drive areas should be checked daily for erosion.
- Access road condition will be checked daily.
- If erosion is noted at walk and drive areas, access road or topsoil berms, the erosion channel will be fixed by placing cut vegetation, sandbags or rocks within the erosion channel and the cause of the erosion will be mitigated through the creation of runoff channels.

c. Possible Noise Pollution

- The working hours shall be limited to between 07:00 hrs and 18:00 hrs on weekdays, and 07:00 hrs and 17:00 hrs on Saturdays, or as per contract documentation. No work on Sundays.
- Vehicles must be driven at a moderate speed (50 kph) on private roads.
- Noise generated from the trucks that transport the material and the excavator that is used to mine the material shall only be carried out during normal working hours.
- Extended working hours will be in accordance with contract documentation.
- SANRAL shall be obligated to maintain vehicles used at the mining area in a good condition;
- SANRAL will be obliged to ensure that all personnel on site apply occupational health and safety requirements with respect to hearing protection.
- Noises that could cause a major disturbance (e.g. blasting) should only be carried out during normal working hours in those areas located in close proximity to communities and/or residences. Should noise generating activities have to occur at night (e.g. drilling of blast holes), communities and/or landowners in the vicinity of the drilling should be warned about the noise well in advance and the activities should be kept to a minimum. Compliance with the appropriate legislation with respect to noise will be mandatory.
- Noise generated by the crushing plant with the conveyor belt, asphalt facility and screening plant should only be carried out during normal working hours in those areas located in close proximity to communities and/or residences.

Blasting:

- Blasting should only be carried out during normal working hours as per SANRAL's blasting specification.
- Should noise generating activities have to occur at night (e.g. drilling of blast holes), communities and/or landowners in the vicinity of the drilling should be warned about the noise well in advance and the activities should be kept to a minimum. Compliance with the appropriate legislation with respect to noise will be mandatory.
- All surrounding structures should be checked for stability and current condition. Appropriate measures should be taken to minimise the risk to nearby structures and to ensure that nobody is present inside any potentially unsafe structures during blasting.
- Residents, businesses and farmers should be informed in time to ensure enough time to make appropriate arrangements. In particular, owners of domestic animals must be given sufficient warning so as to make proper arrangements to ensure the safety of their animals.
- The blasting specification should be adhered to pertaining to fly-rock etc.

d. Possible Visual impact

- Rehabilitation of the mining areas will take place after the mining has ceased.
- The stockpiles shall be vegetated with an indigenous grass seed to maintain fertility.
- All unused material would be levelled to ensure that the mining area blends back into the existing landscape fabric.
- No stockpiled material is to be retained on site.
- The mining areas will be shaped to ensure no stockpiled heaps and that the area blends in with the existing landscape.
- All stockpiled topsoil and vegetative material will be spread over the bottom of the mining area to ensure proper seed bed for the re-establishment of vegetative growth.
- Re-vegetation of the mining area after mining operation has ceased.
- The access gravel road will be rehabilitated and the fencing of the borrow pit reinstated following the mining of the area.

e. Aquatic and Terrestrial Ecology

Construction & Operation Phase

- No temporary accommodation or temporary storage sites to be erected within 100m of the any river, stream, drainage line, pan, wetland or farm dam.
- No temporary facilities (including portable toilets) to be positioned within a 50m bufferzone of any watercourses.
- Only existing roads to be used by vehicles during construction as far as possible.
- No indigenous trees or shrubs, outside of the site to be removed.
- Disturbed surface areas in the construction phase to be rehabilitated. No open trenches to be left. No mounds of soils created during construction to be left. Soils around erected poles to be levelled and sculptured to the original contours of the surrounding soils.
- All construction material, equipment and any foreign objects brought into the area by contractors and staff to be removed immediately after completion of construction or operation phase.
- Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site. Once again only by officially registered waste-disposal companies and only to official waste sites.
- Ensure as small as possible footprint during construction & operation phase.
- Avoid excavation within the demarcated area of the watercourse.
- Avoid excavation within the demarcated area of the rocky outcrop.
- Regular maintenance on Borrow Pit 3 to prevent erosion gullies forming.
- Regular maintenance on Borrow Pit 3 to prevent siltation of watercourse due to stormwater run-off.
- No water may be extracted for any purposes related to the BP whatsoever, without the necessary permission or WULAs.
- Dust suppression to be used along gravel access roads.
- Small low water level bridges to be routinely maintained.
- Erosion is a serious problem in the study area. All precautions must be taken to avoid increasing erosion, especially in areas where large dongas already exist. Weekly monitoring of erosion gullies and open, bare soil work areas to be inspected. Any signs of erosion to be rectified immediately. This is especially important during the rainy season.

Maintenance Phase (to be implemented in defect liability period for 1 year)

- Mechanical control of alien plants around disturbed areas to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous grasses and other pioneers to colonise the previously disturbed areas, thereby keeping out alien invasives.
- No chemical control (herbicides) of alien plants to be used within 100m of any watercourses.
- Access roads to be maintained rehabilitated.
- Low level water bridges routinely used to access sites to be rehabilitated.
- Any erosion areas to be rehabilitated.

f. Possible Impact on Uncovered Cultural or Archaeological site

- If an artefact or grave on-site is uncovered, work in the immediate vicinity shall be stopped immediately and it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article.

- The South African Heritage Resources Agency (SAHRA) shall be contacted such that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work may only resume once clearance is given in writing by the archaeologist/heritage resources consultant.

g. Possible contamination of site due to hydrocarbons spillage

- All heavy vehicles, excavators and generators used for the mining will be in good working condition.
- A drip tray will be available to place underneath haul vehicles while the vehicles are parked at night.
- Should a vehicle have a break down, it will be serviced immediately. If soil contamination with diesel and oils occurred, the spill will be cleared up promptly. If the spill is small, it will be cleaned with a spill kit. If the spill is large, a spill clean-up company will be used to clean-up the spill;
- Proper functioning of heavy vehicles will be ensured.

h. Possible establishment and spread of alien vegetation

- Every 3 months casual labour will be employed to circumnavigate the site to hand pull out known alien vegetation that may have established in the disturbed area. Special attention will be given to the perimeter topsoil berm.
- Casual labour will be provided with photographs of the alien vegetation that could establish.

i. Sanitation Facilities

- Chemical toilet facilities shall preferably be used on site. The toilets shall be services every second week by a service provider.

j. Safety of sloped areas

- All unused material should be levelled. No stockpiled material is to be retained on site.
- The mining area will be shaped to ensure no stockpiled heaps.
- The sides of the excavation of the borrow pits and quarries will be sloped using the material not suitable for the road building purposes and stored for such purposes. The walls of the mining area will be sloped to a slope of at least 1:3 in order to prevent dangerous vertical and to ensure that the mining area will be free draining.

k. Unsafe working conditions for employees

- Appropriate safety clothing will be worn at all times i.e. head gear, shoes, ear plugs.

With the inclusion of the mitigation measures in the EMPr and the implementation of the EMPr by the appointed contractor, the risk pertaining to the impacts associated with the opening of the borrow pits and quarries are foreseen to be low.

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

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

Please find site layout plan in Appendix 4.

x) Statement motivating the preferred site.

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

The following provides a motivation for the preferred site alternatives:

- The only priority species observed is *Aloe ferox*, which is predominantly confined to the rocky outcrop near Borrow Pit 3. There are no priority species observed on the other borrow pit or quarry sites during field investigations.
- No protected trees occur on any of the sites.
- No Red Data flora species (endangered, threatened or vulnerable) were observed during field investigations.
- No Red Data fauna species were observed or are expected to regularly occur in the study area itself.
- No fatal flaws were identified at the sites.
- No no-go zones, or highly sensitive habitats or areas are present at the proposed borrow pit site.
- The watercourses in the area will be avoided.
- The borrow pits and quarries have the required gravel material to be used for construction purposes.
- The mining areas are in close proximity to the construction site.
- Discussions were held with the relevant landowners and they do not have any objections to the proposed opening of the borrow pit on his farm.

Plan of study for the Environmental Impact Assessment process

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

Layout alternatives will be further investigated in the EIA report.

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

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

The aspects to be assessed as part of the EIA process are the following:

CONSTRUCTION PHASE:

1. Vegetation stripping

2. Stripping and stockpiling of topsoil

OPERATIONAL PHASE

1. Blasting

2. Excavations

3. Crushing

4. Stockpiling and transporting of gravel material

DECOMMISSIONING PHASE

1. Sloping and landscaping during rehabilitation

2. Replacing the topsoil and revegetating the disturbed area

iii. Description if aspects to be assessed by specialists

The following specialists reports were already undertaken by specialist consultants:

a. Aquatic and ecological reports by Flori Environmental;
b. Heritage resources impact report by Dr J van Schalkwyk.

The reports will be included in the EIA report.

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

Potential impacts on the environment will be determined in terms of the following in order to determine the significance of each impact:

Nature:

A brief description of the environmental aspect being impacted upon by a particular action or activity is presented. Also:

- Probability (how likely is it that the impact will occur?)
- Magnitude (how severe will the impact be?)
- Duration (how long will the impact last?)
- Scale of the impact (what size of the area will be affected?)

Thereafter, mitigation measures will be proposed in order to reduce or eliminate negative impacts and enhance positive impacts. The impact of the proposed activity on the environment will be considered for the pre- construction, construction and operational phases. The necessary mitigation measures will be consolidated in the form of an Environmental Management Programme (EMPr).

Assessment of significance – method:

The significance of every environmental impact identified will be determined using the following approach:

In assessing the potential significance of an impact two aspects will be considered:

i) Occurrence
ii) Severity

Occurrence will be sub-divided into:

- Probability of occurrence
- Duration of occurrence

Severity will be sub-divided into:

- Magnitude (severity) of impact
- Scale/extent of impact

In order to assess each of these factors for each impact, ranking scales were employed as follows:

Probability:	Duration:
5 - Definite/don't know	5 - Permanent
4 - Highly probable	4 - Long-term*
3 - Medium probability	3 - Medium-term (5-15 years)
2 - Low probability	2 - Short-term (0-5 years)
1 – Improbable	1 - Immediate
0 – None	0 - None

Scale:	Magnitude:
5 – International	10 - Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 - Site only	2 - Minor
0 – None	0 - None

*impact ceases after operational life of the activity

Once the above factors had been ranked for each impact, the overall risk (environmental significance) of each impact will be assessed using the following formula: SP = (magnitude (M) + duration (D) + scale(S)) x probability (P). The maximum value is 100 significance points (SP). Environmental impacts will be rated as either of High, Moderate or Low significance on the following basis:

SP greater or the same as 60 indicates high environmental significance;
SP 31 greater or the same as 59 indicates moderate environmental significance;
SP ≤ 30 indicates low environmental significance.

Layout alternatives will be investigated during the EIA phase.

v. The proposed method of assessing the duration significance

The method of assessing the duration significance will be the following:

5 - Permanent
4 - Long-term*
3 - Medium-term (5-15 years)
2 - Short-term (0-5 years)
1 - Immediate
0 – None

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

A copy of the draft documents (Scoping and EIR) will be submitted to the competent authority for comment. The competent authority will also be consulted when guidance is required with regard to the process.

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

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

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

The landowners will be consulted by means of one and one consultations by the CLO appointed for the project. Registered I&APs will be consulted by means of e-mails during the EIA phase.

Continuing consultation will take place during the EIA phase for the project.

2. Details of the engagement process followed.

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

The landowners were consulted by means of one and one consultations. The minutes of the meeting are included in the report. The registered I&APs will be consulted by means of e-mails during the EIA phase. Please refer to the detailed report in Appendix 5.

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

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

A one on one meeting was conducted with the relevant landowners by the CLO appointed for the project. At the meetings, the relevant plans of the borrow pit were shown and handed to the landowners. The land acquisition process will be handled by land acquisition consultants that are appointed by SANRAL for the project. The individual landowners will be contacted directly to negotiate the land acquisition process with them.

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

The following tasks will be undertaken during the EIA phase:

- Site visit and desk study of available information and identification of key issues;
- Inform I&APs that the EIA phase will commence.
- Synthesis issues for preliminary investigation;
- Incorporate specialist studies conducted for the project into the EIR;
- Compile a Draft Environmental Impact Report (EIR) and Environmental Management Programme (EMPr) and make it available for public comment;
- Submit Final Environmental Impact Report (EIR) and EMPr to environmental authorities for approval.

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

ACTIVITY whether listed or not listed. **E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, beams, roads, pipelines, power lines, conveyors, etc…etc…etc.)**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution etc….etc…)**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g.** **Modify through alternative method.** **Control through noise control** **Control through management and monitoring through rehabilitation.**	**POTENTIAL FOR RESIDUAL RISK**
Vegetation stripping	- Dust - Soil Erosion - Noise - Visual - Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through dust suppression - Control measures to prevent soil erosion - Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	Low. The measures in the Environmental Management Programme must be implemented during the construction and operational phases of the mining areas.
Stripping and stockpiling of topsoil	- Dust - Soil Erosion - Noise - Visual	- Control through dust suppression - Control measures to prevent soil erosion	Low. The measures in the Environmental Management

	- Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	Programme must be implemented during the construction and operational phases of the mining areas.
Excavations	- Dust - Soil Erosion - Noise - Visual - Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through dust suppression - Control measures to prevent soil erosion - Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	Low. The measures in the Environmental Management Programme must be implemented during the construction and operational phases of the mining areas.
Crushing	- Dust - Noise - Hydrocarbon spillage	- Control through dust suppression - Control through noise control measures - Control measures for hydrocarbon spillage - Control measures to lower	Low. The measures in the Environmental Management Programme must be implemented during the construction and operational phases for the

			quarry.
Stockpiling and transporting of gravel material	- Dust - Soil Erosion - Noise - Visual - Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through dust suppression - Control measures to prevent soil erosion - Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	Low. The measures in the Environmental Management Programme must be implemented during the construction and operational phases of the borrow pit.
Sloping and Landscaping	- Dust - Soil Erosion - Noise - Visual - Terrestrial Ecology - Uncovering graves or artefacts - Hydrocarbon spillage - Emissions from heavy vehicles	- Control through dust suppression - Control measures to prevent soil erosion - Control through noise control measures - Control measures to lower visual intrusion - Control measures to lower impacts on terrestrial ecology - Control measures for uncovering graves or artefacts - Control measures for hydrocarbon spillage - Control measures to lower emissions from heavy vehicles - Control measures for removal of alien vegetation	Low. The measures in the Environmental Management Programme must be implemented during the decommissioning and closure phases of the mining areas.

l) Other Information required by the Competent Authority

i) Compliance with provisions of sections 24(4)(a) and (b) read with section 24(3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the: -

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

A potential socio-economic impact is that the landowners will not be able to use the land for grazing and ploughing purposes for the duration of the mining activity. However, the landowners of the proposed mining areas will be compensated by the SANRAL for the areas to be used for the excavation of the gravel material.

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

A heritage assessment was undertaken by Dr J van Schalkwyk in compliance with the National Heritage Resources Act and the results of the assessment will be included in the EIR for the mining areas.

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

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

Layout alternatives will be further investigated in the EIA phase.

j) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

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

Signature of the EAP
DATE:

k) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I _____herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP
DATE:

-END-