caseID: 1767

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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Directorate Minerals Regulations: Limpopo Region

Enquiries: M.D. Mudau
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Reference nr: LP30/5/1/3/3/2/1(1726) EM

REGISTERED MAIL
The Manager:
The Provision- SAHRA Limpopo
P. O. Box 137
Polokwane
0700

Attention: Mr. Donald Lithole/ Victor Mathivha

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) FOR THE APPROVAL OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR MINING PERMIT IN RESPECT OF PORTION 1 OF THE FARM ROERFONTEIN 161 LT, SITUATED IN THE MAGISTERIAL DISTRICT OF LETABA, LIMPOPO REGION.

APPLICANT: MOPANI DISTRICT MUNICIPALITY.

Attached herewith, please find a copy of an EMP received from the above-mentioned applicant, for your comments.

It would be appreciated if you could forward any comments or requirements your Department may have in the case in hand to this office and to the applicant within 30 days as from **06 June 2011 to 06 July 2011**, failure of which will lead to the assumption that your Department has no objection(s) or comments with regard to this application and this Department will in that instance proceed with the finalisation thereof.

Your co-operation will be appreciated.

Mudau M

THE REGIONAL MANAGER
LIMPOPO REGION – POLOKWANE
06 JUNE 2011

ENVIRONMENTAL MANAGEMENT PLAN (EMPLAN):

APPLICATION FOR MINING PERMIT FOR PROPOSED BORROWPIT AT SEPHUKUBJE VILLAGE ON THE FARM ROERFONTEIN 161LT WITHIN GREATER LETABA LOCAL MUNICIPALITY, WATERBERG DISTRICT OF LIMPOPO PROVINCE

APLLICANT:

Mopani District Municipality

Private Bag X9687

GIYANI

0826

Tel: 015 811 6300

Fax: 015 812 4301

Contact Person: I. Letwaba

Email: iletwaba@webmail.co.za

Mobile: 076 135 4163

MOPANI DISTRICT MUNICIPALITY

CONSULTING ENGINEERS

SML Projects

75 Jorissen Street

POLOKWANE

0699

Tel: 015 291 2112

Fax: 015 291 2116

Contact Person: K. S Mojapelo

Email: info@smlprojects.co.za

Mobile: 082 707 6298

SML Projects

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Vhu Hone Hawe Trading Enterprise cc (SHE Consultants)

P O Box 2414

POLOKWANE

0700

Fax: ~~086 604 0476~~

Mobile: 079 504 3878

Contact Person: M. L Moifo

Email: vhuhonehawe@webmail.co.za

Vhu hone hawe TRADING ENTERPRISE

RECEIVED
MINERAL RESOURCES
REGIONAL MANAGER
LIMPOPO REGION
SIGNATURE.....DATE 25/05/11
NAME OF OFFICIAL:.....

March 2011

File number: *LP30/5/1/3/2/1726MP*

DEPARTMENT OF MINERALS AND ENERGY

ENVIRONMENTAL MANAGEMENT PLAN

Submitted in support of application for a prospecting right or mining permit.

Section 39 and Regulation 52 of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

Application for:	Mining Permit
Applicant:	Mopani District Municipality
Farm:	Roerfontein 161LT
District:	Mopani
Mineral:	Gravel
Date:	May 2011

Release Version (1.3.1) 01 May 2004

Contents

A.1 INTRODUCTION

This document aims to provide a simplified national standard for applicants for prospecting rights and mining permits to comply with the relevant legislation and environmental regulations as apply to their respective applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)(MPRDA).

Applicants in this sector of the mining industry typically disturb smaller surface areas of land, whether drilling boreholes, small trenches, or mining on a small area, less than 1,5 hectares of land, under a mining permit as contemplated in Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

A.2 SCOPE

This document is intended for use by applicants for mining permits and prospecting rights.

Typically, operations in this sector of the mining industry:

- Use little or no chemicals to extract mineral from ore,
- Work on portions of land of 1,5 hectares in size or smaller,
- Disturb the topography of an area somewhat but have no significant impact on the geology

A.3 PURPOSE

This document aims to:

- Provide a national standard for the submission of Environmental Management Plans for the types of applications mentioned above.
- Ensure compliance with Regulation 52 of the MPRDA.
- Assist applicants by providing the information that the Department of Minerals and Energy (DME) requires in a simple language and in a structured, prescribed format, as contemplated in Regulation 52 (2) of the (MPRDA).
- Assist regional offices of the DME to obtain enough information about a proposed prospecting/ reconnaissance or mining permit operation to assess the possible environmental impacts from that operation and to determine corrective action even before such right is granted and the operation commences.

This document aims both to provide the DME regional offices with enough information about applicants for mining permits and applicants with guidance on environmental management matters pertaining to the mitigation of environmental impacts arising from their operations. Given this dual focus and the generic nature of the document, it might not be sufficient for all types of operations under various circumstances.

The document may therefore be altered or added to as the particular circumstances of the application in question may require.

A.4 USE OF THE DOCUMENT:

This document is designed for use by non-professionals and newcomers to the environmental management industry and it incorporates a *very simple* Environmental Impact Assessment (EIA). The EIA is contained in Section C of this document and was designed specifically with the target sectors of the mining industry (described in A.2 above) in mind.

The aim is ultimately to (a) gather information from applicants themselves; (b) to assess the impact of the operation based on that information and then (c) to guide the applicant to mitigate environmental impacts to limit damage to the environment.

Section B of the document gathers demographic information about the applicant. Section C gathers the information that will be used in the Environmental Impact Assessment. The applicant must complete the relevant sections of this document, but the regional office of the DME will do the scoring of these for the impact assessment rating in Section D.

Section F (the Environmental Management Plan) of the document is prescriptive and gives guidance to the miner or prospector on how to limit the damage of the operation on the environment. This part may be added to by the regional manager, who has the prerogative to decide whether this Environmental Management Plan will adequately address the environmental impacts expected from the operation or whether additional requirements for proper environmental management need to be set. Where these additional requirements are set, they will appear in Section G of this document. The Environmental Management Plan (Section F) of the document is legally binding once approved and, in the undertaking contained in Section H, the applicant effectively agrees to implement all the measures outlined in this Environmental Management Plan.

A.5 LEGISLATION/ REGULATIONS

The relevant sections of Mineral and Petroleum Resources Development Act and its supporting Regulations are *summarised below* for the information of applicants. The onus is on the applicant to familiarise him/herself with the provisions of the full version of the Mineral and Petroleum Resources Development Act and its Regulations.

Section of Act	**Legislated Activity/ Instruction/ Responsibility or failure to comply**	**Penalty in terms of Section 99**
5(4)	No person may prospect, mine, or undertake reconnaissance operations or any other activity without an approved EMP, right, permit or permission or without notifying land owner	R 100 000 or two years imprisonment or both
19	Holder of a Prospecting right must: lodge right with Mining Titles Office within 30 days; commence with prospecting within	R 100 000 or two years imprisonment or both

	120 days, comply with terms and conditions of prospecting right, continuously and actively conduct prospecting operations; comply with requirements of approved EMP, pay prospecting fees and royalties	
20(2)	Holder of prospecting right must obtain Minister's permission to remove any mineral or bulk samples	R 100 000 or two years imprisonment or both
Section of Act	**Legislated Activity/ Instruction/ Responsibility or failure to comply**	**Penalty in terms of Section 99**
26(3)	A person who intends to beneficiate any mineral mined in SA outside the borders of SA may only do so after notifying the Minister in writing and after consultation with the Minister.	R 500 000 for each day of contravention
28	Holder of a mining right or permit must keep records of operations and financial records AND must submit to the DG: monthly returns, annual financial report and a report detailing compliance with social & labour plan and charter	R 100 000 or two years imprisonment or both
29	Minister may direct owner of land or holder/applicant of permit/right to submit data or information	R 10 000
38(1)(c)	Holder of permission/permit/right MUST manage environmental impacts according to EMP and as ongoing part of the operations	R 500 000 or ten years imprisonment or both.
42(1)	Residue stockpiles must be managed in prescribed manner on a site demarcated in the EMP	A fine or imprisonment of up to six months or both
42(2)	No person may temporarily or permanently deposit residue on any other site than that demarcated and indicated in the EMP	A fine or imprisonment of up to six months or both
44	When any permit/right/permission lapses, the holder may not remove or demolish buildings, which may not be demolished in terms of any other law, which has been identified by the Minister or which is to be retained by agreement with the landowner.	Penalty that may be imposed by Magistrate's Court for similar offence
92	Authorised persons may enter mining sites and require holder of permit to produce documents/ reports/ or any material deemed necessary for inspection	Penalty as may be imposed for perjury
94	No person may obstruct or hinder an authorised person in the performance of their duties or powers under the Act.	Penalty as may be imposed for perjury
95	Holder of a permit/right may not subject employees to	Penalty as may be

	occupational detriment on account of employee disclosing evidence or information to authorised person (official)	imposed for perjury
All sections	Inaccurate, incorrect or misleading information	A fine or imprisonment of up to six months or both
All sections	Failure to comply with any directive, notice, suspension, order, instruction, or condition issued	A fine or imprisonment of up to six months or both

A.6 OTHER RELEVANT LEGISLATION

Compliance with the provisions of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but is not limited to:

- National Monuments Act, 1969 (Act 28 of 1969).
- National Parks Act, 1976 (Act 57 of 1976)
- Environmental Conservation Act, 1989 (Act 73 of 1989)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)
- The National Water Act, 1998 (Act 36 of 1998)
- Mine Safety and Health Act, 1996 (Act 29 of 1996)
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

A.7 WORD DEFINITIONS

In this document, unless otherwise indicated, the following words will have the meanings as indicated here:

Act (The Act) Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

Borehole A hole drilled for the purposes of prospecting i.e. extracting a sample of soil or rock chips by pneumatic, reverse air circulation percussion drilling, or any other type of probe entering the surface of the soil.

CARA The Conservation of Agricultural Resources Act

EIA An Environmental Impact Assessment as contemplated in Section 38(1) (b) of the Act

EMP an Environmental Management Plan as contemplated in Section 39 of the Act

Fauna All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.

Flora All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and capable of photosynthesis.

Fence	A physical barrier in the form of posts and barbed wire and/or "Silex" or any other concrete construction, ("palisade"- type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
House	any residential dwelling of any type, style or description that is used as a residence by any human being
NDA	National Department of Agriculture
NWA	National Water Act, Act 36 of 1998
Pit	Any open excavation
"Porrel"	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
Topsoil	The layer of soil covering the earth which- (a) provides a suitable environment for the germination of seed; (b) allows the penetration of water; (c) is a source of micro-organisms, plant nutrients and in some cases seed; and (d) is not of a depth of more than 0, 5 meters or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.
Trench	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 meters in length. Also a prospecting trench.
Vegetation	Any and all forms of plants, see also Fauna
DWAF	The Department of Water Affairs and Forestry – both national office and their various regional offices, which are divided across the country on the basis of, water catchment areas.
MPRDA	the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
EMPlan	An Environmental Management Plan as contemplated in Regulation 52 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – this document.

B. BIOGRAPHIC DETAILS OF THE APPLICANT:

B 1.1 Full name (and surname) of person or company applying for permit or ~~right~~	**Mopani District Municipality**
B 1.2 ID number of person or company/ CC registration number	
B 1.3 Postal address	**Private Bag X9687** **GIYANI** **0826**
B 1.4 Physical/ residential address	**Old Government Building** **GIYANI** **0826**
B 1.5 Applicant's telephone number	**015 811 6300**
B 1.6 Applicant's cellular phone number	**076 135 4163**
B 1.7 Alternative contact's name	**Itumeleng Letwaba**
B 1.8 Alternative contact's telephone/cell phone numbers	
B 2.1 Full name of the property on which mining/ ~~prospecting~~ operations will be conducted	**Roerfontein 161LT**
B 2.2 Name of the subdivision	**Sephukubje**
B 2.3 Approximate center of mining/prospecting area:	**A: 30°10'53.32"E** **23°24'37.34"S** **B: 30°10'55.04"E** **23°24'35.57"S** **C: 30°10'57.40"E** **23°24'35.57"S** **D: 30°10'59.20"E** **23°24'37.35"S** **E: 30°10'56.09"E** **23°24'38.71"S**
B 2.4 Magisterial district	**Mopani**
B 2.5 Name of the registered owner of the property	**Greater Letaba Local Municipality**
B 2.6 His/her Telephone number	**015 309 9246**
B 2.7 His/ her Postal address	**P O Box 36** **MODJADJIEKLOOF** **0835** **Contact Person: R. Shipalana**
B 2.8 Current uses of surrounding areas	
The current use of surrounding area is vacant/unspecified land which being used as a grazing area by the local community *(Refer to Land use map – Appendix 1).*	

B 2.9 Are there any other, existing land uses that impact on the environment in the proposed mining/~~prospecting~~ area?
No
B 2.10 What is the name of the nearest town?
Modjadjiekloof

C. ENVIRONMENTAL IMPACT ASSESSMENT:

The information provided in this section will enable officials to determine how serious the impact of the prospecting/mining operation will be.

DESCRIBE THE ENVIRONMENT THAT WILL BE AFFECTED BY THE PROPOSED PROSPECTING/MINING OPERATIONS UNDER THE FOLLOWING HEADINGS:

C.1 DESCRIPTION OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY PROPOSED PROSPECTING/MINING OPERATIONS: (REGULATION 52(2)(a))			
C 1.1 What does the landscape surrounding the proposed operation look like? (Open veldt/ valley/ flowing landscape/ steep slopes)			
The landscape surrounding the proposed borrow pit is an open veldt with a gentle slope of 0 – 9% and moderately undulating plains.			
C 1.2 Describe the type of soil found on the surface of the site			
The type of the soil is Glenrosa and/or Mispah that substrate is characterised by sandy soils. The geology is granite and gneiss with numerous dolerite intrusions and areas covered by gabbro.			
C 1.3 How deep is the topsoil?	**600mm +**	**X**	**2**
The soil depth is approximately 450mm to 750mm deep. *Refer to attached Soil depth map – Appendix 1.*			
C 1.4 What *plants, trees and grasses* grow naturally in the area around the site?			
Mixed Lowveld Bushveld vegetation characterised by dense bush. The tree layer is characterised by Red Bushwillow *Combretum apiculatum,* Largefruit Bushwillow *C. zeyheri,* Silver Clusterleaf *Terminalia sericea, Strychnos madagascariensis, Sclerocarya birrea, Lannea stuhlmannii and Peltophorum africanum.* The shrub layer is moderately developed and individuals of Hairy Corkwood *Commiphora africana,* Wild Grape *Cissus cornifolia,* Sickle Bush *Dichrostachys cinerea, Acacia exuvialis, Dalbergia melanoxylon and Pterocarpus rotundifolia* are commonly found. The grass layer is poorly to moderately developed, and grasses such as Herringbone Grass *Pogonarthiia squarrosa,* Blueseed Grass *Tricholaena monachne,* Curlyleaf Lovegrass *Eragrostis rigidior, Melinis repens Brachiaria nigropedata Panicum maximum Digitaria eriantha and Heteropogon contortus* are the conspicuous species.			
C 1.5 What *animals* naturally occur in the area?			
No animals were observed during the field investigation; however there were signs of domestic animals such as cattle and goats within the proposed borrow pit.			
C 1.6 Are there any *protected areas* (game parks/nature reserves, monuments, etc) close to the proposed operation?	**No**	**x**	**0**

C 1.7 What mineral are you going to ~~prospect~~ or mine for?			
Gravel material that is projected to be used as construction fill material for the construction of a bridge at Sephukubje village.			
C 1.8 Describe the type of equipment that will be used:			
The borrowing will be done with excavation equipment for soft excavation only. The equipment includes front end loaders and back actors. It is anticipated that no blasting will take place.			
C.2 HOW WILL THE PROPOSED OPERATION IMPACT ON THE *NATURAL* ENVIRONMENT? (REGULATION 52(2)(b))			
C 2.1 What will the ultimate depth of the proposed ~~prospecting~~/mining operations be?	**0 – 5m**	**X**	**2**
C 2.2 How large will the *total* area of all excavations be?			
The proposed borrow pit area is approximately 1.07 ha *(Refer to Sketch Plan – Appendix 1).*			
C 2.3 How large will each excavation be before it is filled up?	**<10 X 10m**	**x**	**2**
C 2.4 How many *prospecting* boreholes or trenches will there be?			
There will be two trenches maximum required to make the proposed borrow pit to be self-draining.			
C 2.5 Will employees prepare food on the site and collect firewood?	**No**	**x**	**0**
The employees are expected to come along with their own lunch boxes and hence no hunting will be allowed.			
C 2.6 Will water be extracted from a river, stream, dam or pan for use by the proposed operation?	**No**	**X**	**2**
The proposed activity does not required but only portable water will be required for drinking.			
C 2.7 If so, what is the name of this water body?			
Not applicable.			
C 2.8 If water will not be extracted from an open surface source, where will it be obtained?			
Not applicable.			
C 2.9 How much water per day will the *mineral processing* operation require?			
No amount of water is required for mineral processing as the material excavated will be transported to the bridge construction site and be used as infill.			
C 2.10 How far is the proposed operation from open water (dam, river, pan, lake)?	**More than 60 meters**	**X**	**2**
The river is located approximately 1km from the proposed borrow pit.			
C 2.11 What is the estimate depth of the water table/ borehole?		**20**	**meters**
C 2.12 How much water per day will the proposed operation utilize *for employees*?		**25**	**Liters**
This will only be portable water for drinking.			
C 2.13 What toilet facilities will be made available to workers?	**Chemical toilet**	**X**	**2**
C 2.14 Would it be necessary to construct roads to access the proposed operations?	**No**	**X**	**0**
There is an existing road that leads to the proposed borrow pit.			

C 2.15 How long will these access road(s) be (from a public road to the proposed operations)	**0 – 0,5 km**	**X**	**4**
The access road is approximately 500m from the public road as the borrow pit is located adjacent to the existing road that lead to Sephukubje village.			
C 2.16 Will trees be uprooted to construct these access road(s)?	**No**	**X**	**0**
There will be no trees to be uprooted as the access road already exists.			
C 2.17 Will any foreign material, like crushed stone, limestone, or any material other than the naturally occurring topsoil be placed on the road surface?	**No**	**X**	**0**
C.3 TIME FACTOR			
C 3.1 for what time period wills prospect operations is conducted on this particular site?	**6 – 12 months**	**X**	**4**
C.4 HOW WILL THE PROPOSED OPERATION IMPACT ON THE *SOCIO-ECONOMIC ENVIRONMENT*? (REGULATION 52(2)(b))			
C 4.1 How many people will be employed?			
The exact number of people that will be employed is unknown. It is anticipated that opportunities to be provided by the project will include drivers, supervisory staff, traffic controllers, safety personnel and mostly local manual workers.			
C 4.2 How many men?			
Unknown at this moment			
C 4.3 How many women?			
Unknown at this moment			
C 4.4 Where will employees be obtained? (Own or employed from local communities?)	**Local**	**X**	**4**
The project is intended to uplift the standard of living within Sephukubje village and hence during construction employees will be sourced locally.			
C 4.5 How many hours per day will employees work?	**Sunrise→ Sunset**	**X**	**4**
The construction working hours will be from 07H00 to 17H00 during the week and over the weekends it will be determined by the progress of the contractor and it will be in accordance to the relevant legislations and the employees will have to agree.			
C 4.6 Will operations be conducted within 1 kilometer from a residential area	**No**	**X**	**1**
The Sephukubje village is located approximately 2km away from the proposed borrow pit excavations.			
C 4.7 How far will the proposed operation be from the nearest fence/windmill/house/dam/built structure?	**150 or more metres**	**X**	**2**
C.5 HOW WILL THE PROPOSED OPERATION IMPACT ON THE *CULTURAL HERITAGE* OF THE SURROUNDING ENVIRONMENT? REGULATION 52(2)(b)			
C 5.1 Are there any graveyards or old houses or sites of historic significance within 1 kilometer of the area?	**No**	**X**	**0**

The area is already being disturbed by human activity and with the consultation with local community it was established that no historic significance are existing within the area and it is only used for animal grazing. Refer to attached Heritage Impact Assessment(HIA) report

C.6 SPECIFIC REGULATORY REQUIREMENTS

C.6.1 Air quality Management and Control (Regulation 64)
Describe how the operation will impact on the quality of the air, taking into account predominant wind direction and other affected parties in the downwind zone:
The excavation of the gravel materials and movement of construction vehicles within the site might cause dust and affect the quality of the air.
C.6.2 Fire Prevention (Regulation 65)
Applicants for permits, rights or permissions involving ***coal or bituminous rock*** must: • ***Indicate on a plan*** where the coal or rock discard dump will be located ***(If applied for a permit to mine or prospect for coal or bituminous rock, indicate the exact location of the discard dump on the plan and write" EMPlan C6.2" next to it)***
C.6.3 Noise control (Regulation 66)
Indicate how much noise the operation will generate, and how it will impact on the surrounding environment, which might be influenced by noise from your operation.
The noise from construction vehicles and excavation equipments might impact the surrounding neighbours during operation.
C.6.4 Blasting, vibration and shock (Regulation 67)
Please indicate whether any blasting operations will be conducted.

Blasting: ~~Yes~~/ **No**	How often?
No blasting operation will be conducted	

C.6.5 Disposal of waste material (Regulation 69)
Indicate on your plan where waste will be dumped in relation to the beneficiation works/ washing pans Also indicate below how domestic waste material will be managed.
No waste will result from this operation. Domestic waste will be collected by the contractor and dumped to authorised dumping site.
C.6.6 Soil pollution and erosion control (Regulation 70)
6.6.1 Indicate how topsoil will be handled on the area.
Topsoil will be stockpiled and be used later for rehabilitating the excavated area.
6.6.2 Describe how spills of oil, grease, diesel, acid or hydraulic fluid will be dealt with.
The contractor will ensure that no oil spills should occur and in any case of any spillages, oil absorbent fibres used to reinstate the polluted area.
6.6.3 Briefly describe the storage facilities available for the above fluids:
Above storage tanks with a concrete base slab.

C.6.7 If significant impacts on any element of the environment mentioned in Section C 1 to C6.6 above have been identified, summarise all of them here: (Regulation 52(2)(c))	**C.6.8 How will the negative impacts on the environment be mitigated or managed (as described in C 6.11 t the left? (Regulation 57(2)(c))**
- ***Removal of vegetation***	- *Removal of vegetation must be confined to the boundary of the borrow pit. Damage, removal or disturbance of any flora and fauna outside the borrow pit areas is prohibited.*
- ***Topsoil removal and management***	- *Topsoil must be stockpiled for reuse in landscaping in a suitable designated area and must be separated from subsoil. Measures must be taken to ensure minimal erosion and must as well be located away from hydrological features.*
- ***Noise***.	- *The Contractor must abide by the stipulated working hours, and ensure maintenance of construction vehicles and machinery.*
- ***Disturbance of slopes***	- *All disturbed slopes must be stabilised immediately to prevent erosion and safety risks. Sediment laden storm water must be attenuated on site and sediment allowed to settle prior to discharge.*
- ***Disturbed areas***	- *All disturbed areas must be rehabilitated:* → *Land filling: subsoil filled in first to ensure topsoil is present on surface for suitable plant growth medium* → *Substrate which is not suitable for plant growth should not be used for land filling unless used at a suitable depth e.g. deeper than 2m.* → *Stabilising measures must be in place to prevent collapse of slopes or soil erosion*
- ***Sedimentation***	- *Silt traps or drainage retention areas must be put in place to prevent excessive quantities of sand and silt laden entering the storm water system*
- ***Dust nuisance to surrounding areas***	- *Measures must be taken to minimise the generation of dust, especially during excavation and stockpiling. Regular and effective treatment using water sprays must be carried out. Topsoil stockpiles must be stabilised immediately after being removed and/or physically covered to prevent erosion.*
- ***Site sanitation facilities***	- *Mobile chemical toilets must be used.*

C.7 Financial provision: (Regulation 54)

The amount that is necessary for the rehabilitation of damage caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure will be estimated by the regional office of the DME, based on the information supplied in this document. This amount will reflect how much it will cost the Department to rehabilitate the area disturbed in case of liquidation or abscondence.

Enter the amount of financial provision required here: **R 10 000.00**

What method will be used to furnish DME with this financial provision?

Cash deposit	
Bank guarantee	x
Trust Fund	
Other: (specify) (Note: other methods must be approved by the Minister)	

The standard formats for each of these types of guarantees are available from your regional office of the DME.

C.8.1 Monitoring and performance assessment.

Regulation 55 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) clearly describes the process and procedure as well as requirements for monitoring and auditing of the performance of this plan to adequately address environmental impacts from the operation. The following information must be provided:

C.8.2 Please describe how the adequacy of this programme will be assessed and how any inadequacies will be addressed. (Regulations 55(1) and 52(2)(e))
Example: I will, on a bi-monthly basis, check every aspect of my operation against the prescriptions given in Section F of this document and, if I find that certain aspects are not addressed or impacts on the environment are not mitigated properly, I will rectify the identified inadequacies immediately.
There will be a monthly meeting where an independent environmental consultant will undertake environmental monitoring to check if the contractor is complying with the environmental management plans to avoid impacts to the environment.
C.9 Closure and Environmental objectives: (Regulation 52(2)(f))
Clearly state the intended end use for the area prospected/mined after closing of operations
The area will be rehabilitated for vegetation re-occurrence and for communal grazing
C.9.1 Describe, in brief terms, what the environment will look like after a closure certificate has been obtained.
The environment will be re-instated to its original state where vegetation would have re-occurred and soil formation taken place

Note: The proposed end-state of your area must be consulted with interested and affected parties in terms of Regulation 52(2) (g). Details of the acceptability of the end-state must appear in the section below.

C 10 CLOSURE

Regulations 56 to 62 outline the entire process of mine closure, and these are copied in Section F of this document, both as a guide to applicants on the process to be followed for mine closure, and also to address the legal responsibility of the applicant with regard to the proper closure of his operation. In terms of Section 37 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), the holder of a permit is liable for any and all environmental damage or degradation emanating from his/her operation, until a closure certificate is issued in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

C.11 Public Participation: (Regulation 52(2) (g))

In terms of the above regulation consultation with interested and affected person or persons must take place prior to the approval of the environmental management plan. This regulation is quoted below for ease of reference.

"a record of the public participation undertaken and the results thereof"

C 11.1 Any comments lodged by an interested and affected person or persons in terms of section 10(1) (b) of the Act, must be in writing and addressed to the relevant Regional Manager.

C 11.2 Any objections lodged by an interested and affected person or persons against the application for a right or permit in terms of the Act, must set out clearly and concisely the facts upon which it is based and must be addressed to the relevant Regional Manager in writing.

C 11.3 The Regional Manager must make known by way of publication in a local newspaper or at the office of the Regional Manager, that an application for a right or permit in terms of the Act has been received.

In the table below, please list the names of people or organisations likely to be influenced by the proposed operations (these might include neighbours, other water users, etc.) Kindly indicate how these people were consulted (e.g. by letter or by phone) *and provide proof* of that consultation. What were the main concerns/ objections raised by the interested and affected parties to the proposed operation?

Name of Interested/ affected party	Contact details: Address & telephone number	How did consultation take place?	What were his /her main concerns about the operation?
Mamaila Tribal Authority	P O Box 493 Pauluswerg 0814 Contact Person: Mogale F. M Cell: 079 126 3969	Meeting with the Traditional Council and as well with Sephukubje nduna	Borrow pit rehabilitation and the safety of the community.

D SCORING OF EIA– FOR OFFICIAL USE ONLY

Instructions for officials:

In this table, complete the totals of each section indicated below and do the calculation. ***Remember to first add all the values of sections C 1,2,4 and 5 and then to multiply it by the time factor in Section C 3***

Note that the value for the time factor element of the impact rating appears in Section C3. This is the total amount of time that the operation is expected to impact on the environment and all other factors are MULTIPLIED by this value. Compare the score (Impact rating) with the table below to help you make a decision on the total impact of the operation and also on the sufficiency of this programme to address all expected impacts from the operation on the environment.

D 1.1 CALCULATION TABLE

Section C 1 Total	+	Section C 2 Total	+	Section C 4 Total	+	Section C 5 Total	=	*Subtotal*	X	Time Factor Section C 3	=	Score (Impact rating)
	+		+		+		=		X		=	

D 1.2 IMPACT RATING SCALE

SCORE ATTAINED	IMPACT RATING	REMARKS
46 – 300	Low	No additional objectives needed – this programme is sufficient
301 - 800	Medium	Some specific additional objectives to address focal areas of concern may be set.
801 - 1160	High	Major revision of Environmental Management Plan for adequacy and full revision of objectives.

Additional Objectives:

Based on the information provided by the applicant and the regional office's assessment thereof, combined with the interpretation of the scoring and impact rating attained for the particular operation above, the Regional Manager of the regional office of the DME may now determine additional objectives /requirements for the mine owner/manager to comply with. *These measures will be specific and will address specific issues of concern that are not adequately covered in the standard version of this document.* These requirements are not listed here, but are specified under Section G of this document, so as to form part of the legally binding part of this Environmental Management Plan.

E UNDERTAKING:

I, **Lucas Moifo of Vhu Hone Hawe Trading Enterprise on behalf of Mopani District Municipality** the applicant for a mining permit/~~right~~ hereby declare that the above information is true, complete and correct. I undertake to implement the measures as described in Sections F and G hereof. I understand that this undertaking is legally binding and that failure to give effect hereto will render me liable for prosecution in terms of Section 98 (b) and 99 (1)(g) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). I am also aware that the Regional Manager may, at any time but after consultation with me, make such changes to this plan as he/she may deem necessary.

Signed on this .....day of **MAY** 2011 at **Polokwane** (Place)

.....

Signature of applicant

F ENVIRONMENTAL MANAGEMENT PLAN:

INTRODUCTION

This Environmental Management Plan contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding on the holder of the mining permit/ prospecting permission/ reconnaissance permission after approval of the Environmental Management Plan. It is essential that this portion be carefully studied, understood, implemented and adhered to at all time.

F 1 GENERAL REQUIREMENTS

F 1.1 MAPPING AND SETTING OUT

F 1.1.1 LAYOUT PLAN

- A copy of the layout plan as provided for in Regulation 2.2 must be available at the prospecting/mining site for scrutiny when required.
- The plan must be updated on a regular basis with regard to the actual progress of the establishment of surface infrastructure, mining operations and rehabilitation (a copy of the updated plan shall be forwarded to the Regional Manager on a regular basis).
- A final layout plan must be submitted at closure of the mine or when operations have ceased.

NOTE: Regulation 2.2 of the regulations promulgated in terms of the Act requires:

"An application contemplated in sub-regulation (1) must be accompanied by a plan that must contain –

(a) the co-ordinates of the land or area applied for;

(b) the north point;

(c) the scale to which the plan has been drawn;

(d) the name, number and location of the land or area covered by the application; and

(e) in relation to farm boundaries and surveyed points-

(i) the size and shape of the proposed area;

(ii) the boundaries of the land or area comprising the subject of the application concerned;

(iii) the layout of the proposed reconnaissance, prospecting, exploration, mining or production operations;

(iv) surface structures and servitudes;

(v) the topography of the land or area; "

F 1.1.2 DEMARCATING THE MINING/ PROSPECTING AREA

- The mining/ prospecting area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.
- Permanent beacons as indicated on the layout plan or as prescribed by the Regional Manager must be firmly erected and maintained in their correct position throughout the life of the operation.
- Mining/ prospecting and resultant operations shall only take place within this demarcated area.

F 1.1.3 DEMARCATING THE RIVER CHANNEL AND RIVERINE ENVIRONMENT

The following is applicable if operations are conducted within the riverine environment (See F 3.2):

- Beacons as indicated on the layout plan or as prescribed by the Regional Manager must be erected and maintained in their correct position throughout the life of the operation.
- These beacons must be of a permanent nature during the operations and must not be easily removable, especially those in a river channel. The beacons must, however, be removed at the end of the operations.
- The mining of and prospecting for any mineral shall only take place within this demarcated mining area.
- If riverine vegetation is present in the form of reeds or wetland vegetation, the presence of these areas must be entered in Part C 1.45 of the EMPlan and indicated on the layout plan.
- The holder of the mining permit/ prospecting right will also be required to permanently demarcate the areas as specified in F 1.1.2.

F 1.2 RESTRICTIONS ON MINING/ PROSPECTING

- On assessment of the application, the Regional Manager may prohibit the conducting of mining or prospecting operations in vegetated areas or over portions of these areas
- In the case of areas that are excluded from mining or prospecting, no operations shall be conducted within 5 m of these areas.

F 1.3 RESPONSIBILITY

- The environment affected by the mining/ prospecting operations shall be rehabilitated by the holder, as far as is practicable, to its natural state or to a predetermined and agreed to standard or land use which conforms with the concept of sustainable development. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.
- It is the responsibility of the holder of the mining permit/ prospecting right to ensure that the manager on the site and the employees are capable of complying with all the statutory requirements which must be met in order to mine, which includes the implementation of this EMP.
- If operations are to be conducted in an area that has already been disturbed, the holder must reach specific agreement with the Regional Manager concerning the responsibilities imposed upon him/her pertaining to the rehabilitation of the area and the pollution control measures to be implemented.

F 2 INFRASTRUCTURAL REQUIREMENTS

F 2.1 TOPSOIL

- Topsoil shall be removed from all areas where physical disturbance of the surface will occur.

- All available topsoil shall be removed after consultation with the Regional Manager prior to the commencement of any operations.
- The topsoil removed, shall be stored in a bund wall on the high ground side of the mining/prospecting area outside the 1:50 flood level within the boundaries of the mining area/ prospecting.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of access roads.
- The topsoil stored in the bund wall shall be adequately protected from being blown away or being eroded.

F 2.2 ACCESS TO THE SITE

F 2.2.1 Establishing access roads on the site

- The access road to the mining/prospecting area and the camp-site/site office must be established in consultation with the landowner/tenant and existing roads shall be used as far as practicable.
- Should a portion of the access road be newly constructed the following must be adhered to:
  - The route shall be selected that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
  - Water courses and steep gradients shall be avoided as far as is practicable.
  - Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.
- If imported material is used in the construction or upgrading of the access road this must be listed in C 2.17
- The erection of gates in fence lines and the open or closed status of gates in new and existing positions shall be clarified in consultation with the landowner/tenant and maintained throughout the operational period.
- No other routes will be used by vehicles or personnel for the purpose of gaining access to the site.

NOTE: The design, construction and location of access to provincial roads must be in accordance with the requirements laid down by the Provincial or controlling authority.

F 2.2.2 Maintenance of access roads

- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the mining permit/ prospecting right.
- Newly constructed access roads shall be adequately maintained so as to minimise dust, erosion or undue surface damage.

F 2.2.3 Dust control on the access and haul roads

- The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

F 2.2.4 Rehabilitation of access roads

- Whenever a mining permit/ prospecting right is suspended, cancelled or abandoned or if it lapses and the holder does not wish to renew the permit or right, any access road or portions thereof, constructed by the holder and which will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.
- Any gate or fence erected by the holder which is not required by the landowner/tenant, shall be removed and the situation restored to the pre mining/ prospecting situation.
- Roads shall be ripped or ploughed, and if necessary, appropriately fertilized (based on a soil analysis) to ensure the re-growth of vegetation. Imported road construction materials which may hamper re-growth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation, be corrected and the area be seeded with a seed mix to the Regional Manager's specification.

F 2.3 OFFICE/CAMP SITES

F 2.3.1 Establishing office / camp sites

- Office and camp sites shall be established, as far as is practicable, outside the flood plain, above the 1 in 50 flood level mark within the boundaries of the mining/ prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and which will involve the least disturbance to vegetation. Topsoil shall be handled as described in F 2.1 above
- No camp or office site shall be located closer than 100 meters from a stream, river, spring, dam or pan.
- No trees or shrubs will be felled or damaged for the purpose of obtaining firewood, unless agreed to by the landowner/tenant.
- Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a fire-break shall be cleared around the perimeter of the camp and office sites.
- Lighting and noise disturbance or any other form of disturbance that may have an effect on the landowner/tenant/persons lawfully living in the vicinity shall be kept to a minimum.

F 2.3.2 Toilet facilities, waste water and refuse disposal

- As a minimum requirement, the holder of a mining permit/ prospecting right shall, at least, provide pit latrines for employees and proper hygiene measures shall be established.
- Chemical toilet facilities or other approved toilet facilities such as a septic drain shall preferably be used and sited on the camp site in such a way that they do not cause water or other pollution.
- The use of existing facilities must take place in consultation with the landowner/tenant.
- In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.
- All effluent water from the camp washing facility shall be disposed of in a properly constructed French drain, situated as far as possible, but not less than 200 meters, from any stream, river, pan, dam or borehole.
- Only domestic type wash water shall be allowed to enter this drain and any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility.
- Spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.
- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be stored in a container at a collecting point and collected on a regular basis and disposed of at a recognised disposal facility. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the camp site.
- Biodegradable refuse generated from the office/camp site, processing areas vehicle yard, storage area or any other area shall either be handled as indicated above or be buried in a pit excavated for that purpose and covered with layers of soil, incorporating a final 0,5 meter thick layer of topsoil (where practicable). Provision should be made for future subsidence of the covering.

F 2.3.3 Rehabilitation of the office/camp site

- On completion of operations, all buildings, structures or objects on the camp/office site shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), which states:

  (1) When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of any such right or permit may not demolish or remove any building, structure, object -

  (a) which may not be demolished in terms of any other law;

(b) which has been identified in writing by the Minister for purposes of this section; or

(c) which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.

(2) The provision of subsection (1) does not apply to bona fide mining equipment which may be removed

- Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
- Areas containing French drains shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface.
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.
- Photographs of the camp and office sites, before and during the mining/ prospecting operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the Regional Manager.

F 2.4 VEHICLE MAINTENANCE YARD AND SECURED STORAGE AREAS

F 2.4.1 Establishing the vehicle maintenance yard and secured storage areas

- The vehicle maintenance yard and secured storage area will be established as far as is practicable, outside the flood plain, above the 1 in 50 flood level mark within the boundaries of the mining/prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and involve the least disturbance to tree and plant life. Topsoil shall be handled as described in F 2.1 above.
- The storage area shall be securely fenced and all hazardous substances and stocks such as diesel, oils, detergents, etc., shall be stored therein. Drip pans, a thin concrete slab or a facility with PVC lining, shall be installed in such storage areas with a view to prevent soil and water pollution.
- The location of both the vehicle maintenance yard and the storage areas are to be indicated on the layout plan.
- No vehicle may be extensively repaired in any place other than in the maintenance yard.

F 2.4.2 Maintenance of vehicles and equipment

- The maintenance of vehicles and equipment used for any purpose during the mining/prospecting operation will take place only in the maintenance yard area.

- Equipment used in the mining/prospecting process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.
- Machinery or equipment used on the mining/prospecting area must not constitute a pollution hazard in respect of the above substances. The Regional Manager shall order such equipment to be repaired or withdrawn from use if he or she considers the equipment or machinery to be polluting and irreparable.

F 2.4.3 Waste disposal

- Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste.
- All used oils, grease or hydraulic fluids shall be placed therein and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.
- All spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.

F 2.4.4 Rehabilitation of vehicle maintenance yard and secured storages areas

- On completion of mining/prospecting operations, the above areas shall be cleared of any contaminated soil, which must be dumped as referred to in section F 2.4.3 above.
- All buildings, structures or objects on the vehicle maintenance yard and secured storage areas shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002.
- The surface shall then be ripped or ploughed to a depth of at least 300mm and the topsoil previously stored adjacent the site, shall be spread evenly to its original depth over the whole area. The area shall then be fertilised if necessary (based on a soil analysis).
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

F 3 OPERATING PROCEDURES IN THE MINING AREA

F 3.1 Limitations on mining/prospecting

- The mining of or prospecting for precious stones shall take place only within the approved demarcated mining or prospecting area.
- Mining/ prospecting may be limited to the areas indicated by the Regional Manager on assessment of the application.
- The holder of the mining permit/ prospecting right shall ensure that operations take place only in the demarcated areas as described in section F 1.1.2 above.

- Operations will not be conducted closer than one and a half times the height of the bank from the edge of the river channel and in such manner that the stability of the bank of the river is affected.
- Precautions shall also be taken to ensure that the bank of the river is adequately protected from scouring or erosion. Damage to the bank of the river caused by the operations, shall be rehabilitated to a condition acceptable to the Regional Manager at the expense of the holder.
- Restrictions on the disturbance of riverine vegetation in the form of reeds or wetland vegetation must be adhered to. The presence of these areas must be entered in Part of the programme and indicated on the layout plan.

F 3.2 Mining/ prospecting operations within the riverine environment

NOTE: The Department of Water Affairs and Forestry may impose additional conditions which must be attached to this EMP. In this regard, please see the Best Practice Guideline for small scale mining developed by DWAF (BPG 2.1)
(Available from http://www.dwaf.gov.za)

- The mining of or prospecting for precious stones in the river or the banks of the river will be undertaken only after the Regional Manager has consulted with the Department of Water Affairs and Forestry.
- The canalization of a river will not be undertaken unless the necessary permission has been obtained from the Department of Water Affairs and Forestry. Over and above the conditions imposed by the said Department, which conditions shall form part of this EMPlan, the following will also apply:
  - ❖ The canalization of the flow of the river over different parts of the river bed shall be constructed in such a manner that the following are adhered to at all times:
    - ♦ The flow of the river may not be impeded in any way and damming upstream may not occur.
    - ♦ The canalization of the flow may not result in scouring or erosion of the river-bank.
    - ♦ Well points or extraction pumps in use by other riparian users may not be interfered with and canalization may not impede the extraction of water at these points.
- Access to the riverbed for the purpose of conducting excavations in the river-bed, shall be through the use of only one access at a time. The location of the access to the river channel across the river-bank shall be at a point of the river-bank where the least excavation and damage to vegetation will occur and shall not be wider than is reasonably required. The position of the river access together with all planned future access points must be indicated on the layout plan.

F 3.2.1 Rehabilitation of access to river-bed

- When rehabilitating the access point, the original profile of the river-bank will be re-established by backfilling the access point with the original material excavated or other suitable material.
- The topsoil shall then be returned over the whole area to its original depth and if necessary fertilised and the vegetation allowed growing.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.
- In the event of damage from an occurrence where high flood waters scour and erode access points in the process of rehabilitation over the river-bank or an access point currently in use, repair of such damage shall be the sole responsibility of the holder of the mining permit or prospecting right.
- Repair to the river-bank to reinstate its original profile to the satisfaction of the Regional Manager must take place immediately after such event has occurred and the river has subsided to a point where repairs can be undertaken.
- Final acceptance of rehabilitated river access points will be awarded only after the vegetation has re-established to a point where the Regional Manager is satisfied that the river-bank is stable and that the measures installed are of durable nature and able to withstand high river-flow conditions.

F 3.2.2 Rehabilitation of mining/prospecting area in the bed of the river

- The goal of rehabilitation with respect to the area where mining/prospecting has taken place in the river-bed is to leave the area level and even, and in a natural state containing no foreign debris or other materials and to ensure the hydrological integrity of the river by not attenuating or diverting any of the natural flow.
- All scrap and other foreign materials will be removed from the bed of the river and disposed of as in the case of other refuse (see section F 2.3.2 above), whether these accrue directly from the mining/prospecting operation or are washed on to the site from upstream.
- Removal of these materials shall be done on a continuous basis and not only at the start of rehabilitation.
- Where reeds or other riverine vegetation have been removed from areas, these shall be re-established systematically in the approximate areas where they occurred before mining/prospecting.
- An effective control programme for the eradication of invader species and other exotic plants, shall be instituted on a regular basis over the entire mining/prospecting area

under the control of the holder of the mining permit/ prospecting right, both during mining/prospecting and at the stage of final rehabilitation.

2. THE WATER USE LICENCE

The National Water Act, (Act 36 of 1998), is based on the principles of sustainability, efficiency and equity, meaning that the protection of water resources must be balanced with their development and use.

In addition to being issued with a prospecting right or mining permit a small-scale miner may also need to get a **water use licence** for the proposed water uses that will take place, except in certain cases.

NOTE: The Department of Water Affairs and Forestry (DWAF) developed specific Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management. Copies of these guidelines can be obtained from the regional office of DME or DWAF.

Applications for a water use licence must be made in good time, such that approval can be granted before a water use activity can begin. The appropriate licence forms for each kind of expected water use should be completed together with supporting documentation. The main supporting document required is a technical report. To make the technical report easier, you can refer to sections in this EMPlan, as most of what the technical report requires has already been done in the EMPlan. If you refer to the EMPlan it must be attached to the technical report.

F 3.3 EXCAVATIONS

F 3.3.1 Establishing the excavation areas

- Whenever any excavation is undertaken for the purpose of locating and/or extracting ore bodies of all types of minerals, including precious stone-bearing gravels, the following operating procedures shall be adhered to:
  - ❖ Topsoil shall, in all cases (except when excavations are made in the river-bed), be handled as described in F 2.1 above.
  - ❖ Excavations shall take place only within the approved demarcated mining/prospecting area.
  - ❖ 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.
  - ❖ Trenches shall be backfilled immediately if no ore or precious stone-bearing gravel can be located.

F 3.3.2 Rehabilitation of excavation areas

The following operating procedures shall be adhered to:

- The excavated area must serve as a final depositing area for the placement of tailings during processing.
- Rocks and coarse material removed from the excavation must be dumped into the excavation simultaneously with the tailings.
- Waste, as described in paragraph F 2.3.2 above, will not be permitted to be deposited in the excavations.
- Once excavations have been refilled with overburden, rocks and coarse natural materials and profiled with acceptable contours and erosion control measures, the topsoil previously stored shall be returned to its original depth over the area.
- The area shall be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/ prospecting operation, be corrected and the area be seeded with a vegetation seed mix to his or her specification.

F 3.4 PROCESSING AREAS AND WASTE PILES (DUMPS)

F 3.4.1 Establishing processing areas and waste piles

- Processing areas and waste piles shall not be established within 100 meters of the edge of any river channel or other water bodies.
- Processing areas should be established, as far as practicable, near the edge of excavations to allow the waste, gravel and coarse material to be processed therein.
- The areas chosen for this purpose shall be the minimum reasonably required and involve the least disturbance to vegetation.
- Prior to development of these areas, the topsoil shall be removed and stored as described in paragraph F 2.1 above.
- The location and dimensions of the areas are to be indicated on the layout plan and once established, the processing of ore containing precious stones shall be confined to these areas and no stockpiling or processing will be permitted on areas not correctly prepared.
- Tailings from the extraction process must be so treated and/or deposited that it will in no way prevent or delay the rehabilitation process.

F 3.4.2 Rehabilitation of processing areas

- Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- On completion of mining/prospecting operations, the surface of the processing areas especially if compacted due to hauling and dumping operations shall be scarified to a

depth of at least 300mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.

- Prior to replacing the topsoil the material that was removed from the processing area will be replaced in the same order as it originally occurred.
- The area shall then be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

F 3.5 TAILINGS DAM(S) (SLIMES DAM)

The permission of the Regional Manager must be obtained should a tailings dam be constructed for the purpose of handling the tailings of the mining/prospecting operations. The construction, care and maintenance of tailings dams have been regulated and the relevant regulation is copied herewith, both for your information and as a guideline to the commissioning, management, operation, closing and aftercare of a tailings deposition facility.

Regulation 73 promulgated under the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) requires the following:

Management of residue stockpiles and deposits

56.

(1) The assessment of impacts relating to the management of residue stockpiles and deposits, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan.

(2) Residue characterization

(a) Mine residue must be characterised to identify any potentially significant health and safety hazard and environmental impact that may be associated with the residue when stockpiled or deposited at the site(s) under consideration.

(b) Residue stockpiles and deposits must be characterised in terms of its –

(i) physical characteristics, which may include -

(aa) the size distribution of the principal constituents;

(bb) the permeability of the compacted material;

(cc) void ratios of the compacted material;

(dd) the consolidation or settling characteristics of the material under its own weight and that of any overburden;

(ee) the strength of compacted material;

(ff) *the specific gravity of the solid constituents; and*

(gg) *the water content of the material at the time of deposition, after compaction, and at other phases in the life of the deposit.*

(ii) *chemical characteristics, which may include -*

(aa) *the toxicity;*

(bb) *the propensity to oxidize and /or decompose;*

(cc) *the propensity to undergo spontaneous combustion;*

(dd) *the pH and chemical composition of the water separated from the solids;*

(ee) *stability and reactivity and the rate thereof; and*

(ff) *neutralising potential.*

(iii) *mineral content, which include the specific gravity of the residue particles and its impact on particle segregation and consolidation;*

(3) *Classification of residue stockpiles and deposits*

(a) *All residue stockpiles and deposits must be classified into one or a combination of the following categories –*

(i) *the safety classification to differentiate between residue stockpiles and deposits of high, medium and low hazard on the basis of their potential to cause harm to life or property; and*

(ii) *the environmental classification to differentiate between residue stockpiles and deposits with -*

(aa) *a potentially significant impact on the environment due to its spatial extent, duration and intensity of potential impacts; or*

(bb) *no potentially significant impact on the environment.*

(b) *All mine residue stockpiles and deposits must be classified by a suitably qualified person(s).*

(c) *The classification of residue stockpiles and deposits shall determine the –*

(i) *level of investigation and assessment required;*

(ii) *requirements for design, construction, operation, decommissioning, closure and post closure maintenance; and*

(iii) *qualifications and expertise required of persons undertaking the investigations, assessments, design, and construction thereof.*

(d) *The safety classification of residue stockpiles and deposits shall be based on the following criteria –*

Number of residents in zone of influence	*Number of workers in zone of influence*	*Value of third party property in zone of influence*	*Depth to underground mine workings*	*Classification*

0	*< 10*	*0 – R2 m*	*> 200m*	*Low hazard*
1 – 10	*11 – 100*	*R 2 m – R20 m*	*50 m – 200 m*	*Medium hazard*
> 10	*> 100*	*> R20 m*	*< 50 m*	*High hazard*

(e) *A risk analysis must be carried out and documented on all high hazard residue stockpiles and deposits.*

(f) *The environmental classification of residue stockpiles and deposits must be undertaken on the basis of –*

(i) *the characteristics of the residue;*

(ii) *the location and dimensions of the deposit (height, surface area);*

(iii) *the importance and vulnerability of the environmental components that are at risk; and*

(iv) *the spatial extent, duration and intensity of potential impacts.*

(g) *An assessment of the environmental impacts shall be done on all environmental components which are significantly affected.*

(h) *The assessment of impacts and analyses of risks shall form part of the environmental assessment and management programme.*

(4) *Site selection and investigation:*

(a) *The process of investigation and selection of a site must entail -*

(i) *the identification of a sufficient number of possible candidate sites to ensure adequate consideration of alternative sites;*

(ii) *qualitative evaluation and ranking of all alternative sites;*

(iii) *qualitative investigation of the top ranking sites to review the ranking done in (ii);*

(iv) *a feasibility study to be carried out on the highest ranking site(s), involving -*

(aa) *a preliminary safety classification;*

(bb) *an environmental classification;*

(cc) *geotechnical investigations; and*

(dd) *groundwater investigations.*

(b) *The geotechnical investigations may include-*

(i) *the characterization of the soil profile over the entire area to be covered by the residue facility and associated infrastructure to define the spatial extent and depth of the different soil horizons;*

(ii) *the characterization of the relevant engineering properties of foundations soils and the assessment of strength and drainage characteristics.*

(c) *The groundwater investigations may include-*

(i) *the potential rate of seepage from the residue facility;*

(ii) *the quality of such seepage;*

(iii) *the geohydrological properties of the strata within the zone that could potentially be affected by the quality of seepage;*

(iv) *the vulnerability and existing potential use of the groundwater resource within the zone that could potentially be affected by the residue facility.*

(d) *From these investigations, a preferred site must be identified.*

(e) *Further investigation on the preferred site, shall include –*

(i) *land use;*

(ii) *topography and surface drainage;*

(iii) *infrastructure and man-made features;*

(iv) *climate;*

(v) *flora and fauna;*

(vi) *soils;*

(vii) *ground water morphology, flow, quality and usage; and*

(viii) *surface water.*

(f) *The investigations, laboratory test work, interpretation of data and recommendations for the identification and selection of the most appropriate and suitable site for the disposal of all residue that have the potential to generate leachate that could have a significant impact on the environment and groundwater must be carried out by a suitably qualified person.*

(5) *Design of residue stockpile and deposit*

(a) *The design of the residue stockpile and deposit shall be undertaken by a suitably qualified person.*

(b) *An assessment of the typical soil profile on the site is required for residue stockpiles and deposits which -*

(i) *have a low hazard potential; and*

(ii) *have no significant impact on the environment.*

(c) *The design of the residue stockpile and deposit must take into account all phases of the life cycle of the stockpile and deposit, from construction through to closure and must include –*

(i) *the characteristics of the mine residue;*

(ii) *the characteristics of the site and the receiving environment;*

(iii) *the general layout of the stockpile or deposit, whether it is a natural valley, ring dyke, impoundment or a combination thereof and its 3-dimensional geometry at appropriate intervals throughout the planned incremental growth of the stockpile or deposit;*

(iv) *the type of deposition method used; and*

(v) *the rate of rise of the stockpile or deposit.*

(d) *Other design considerations, as appropriate to the particular type of stockpile and deposit must be incorporated –*

(i) the control of storm water on and around the residue stockpile or deposit by making provision for the maximum precipitation to be expected over a period of 24 hours with a frequency of once in a 100 years, in accordance with the regulations made under section 8 of the National Water Act, 1998;

(ii) the provision, throughout the system, of a freeboard of at least 0.5 m above the expected maximum water level, in accordance with regulations made under the National Water Act, 1998, to prevent overtopping;

(iii) keeping the pool away from the walls; where there are valid technical reasons for deviating from this, adequate motivation must be provided and the design must be reviewed by a qualified person as required in terms of sections 9(6) or 9(7) of the Mine Health and Safety Act, 1996;

(iv) the control of decanting of excess water under normal and storm conditions;

(aa) the retention of polluted water in terms of polluted water in terms of GN R991(9), where measures may be required to prevent water from the residue deposit from leaving the residue management system unless it meets prescribed requirements;

(bb) the design of the penstock, outfall pipe, under-drainage system and return water dams;

(cc) the height of the phreatic surface, slope angles and method of construction of the outer walls and their effects on shear stability;

(dd) the erosion of slopes by wind and water, and its control by (ee) vegetation, berms or catchment paddocks; and

(ee) the potential for pollution.

(e) *A design report and operating manual shall be drawn up for all residue stockpiles and deposits which –*

(i) have a medium to high hazard; and

(ii) have a potentially significant impact on the environment.

(f) *Relevant information must be included in the draft environmental management programme or environmental management plan.*

(6) *Construction and operation of residue deposits:*

(a) *The holder of any right or permit in terms of the Act, must ensure that-*

(i) the residue deposits, including any surrounding catchment paddocks, is constructed and operated in accordance with the approved environmental management programme or environmental management plan;

(ii) the design of the residue deposit is followed implicitly throughout the construction thereof, and that any deviations from the design be approved by

the Regional Manager and the environmental manage programme and environmental management plan be amended accordingly;

(iii) as part of the monitoring system, measurements of all residues transported to the site and of all surplus water removed from the site are recorded;

(iv) the provision for appropriate security measures be implemented to limit unauthorised access to the site and intrusion into the residue deposit;

(v) specific action be taken in respect of any sign of pollution;

(vi) adequate measures be implemented to control dust pollution and erosion of the slopes; and

(vii) details of rehabilitation of the residue deposit be provided in the draft environmental management programme or environmental management plan.

(b) A system of routine maintenance and repair in respect of the residue deposit must be implemented to ensure the ongoing control of pollution, the integrity of rehabilitation and health and safety maters at the site.

(7) Monitoring of residue stockpiles and deposits:

(a) A monitoring system for residue stockpiles and deposits with respect to potentially significant impacts as identified in the environmental assessment must be included in the environmental management programme or environmental management plan.

(b) In the design of a monitoring system for a residue stockpile or deposit, consideration must be given to –

(i) baseline and background conditions with regard to air, surface and groundwater quality ;

(ii) the air, surface and groundwater quality objectives;

(iii) residue characteristics;

(iv) the degree and nature of residue containment;

(v) the receiving environment and specifically the climatic, local geological, hydro geological and geochemical conditions;

(vi) potential migration pathways;

(vii) potential impacts of leachate;

(viii) the location of monitoring points and the prescribed monitoring protocols; and

(ix) the reporting frequency and procedures.

(8) Decommissioning, closure and after care:

(a) The decommissioning, closure and post closure management of residue deposits must be addressed in the closure plan, which must contain the following -

(i) *the environmental classification, including assumptions on which the classification were based;*

(ii) *the closure objectives, final land use or capability;*

(iii) *conceptual description and details for closure and post closure management;*

(iv) *cost estimates and financial provision for closure and post-closure management; and*

(v) *residual impacts, monitoring and requirements to obtain mine closure in terms of the Act.*

F 3.6 FINAL REHABILITATION

- All infrastructure, equipment, plant, temporary housing and other items used during the mining period will be removed from the site (section 44 of the MPRDA)
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

F 4 MONITORING AND REPORTING

F 4.1 Inspections and monitoring

- Regular monitoring of all the environmental management measures and components shall be carried out by the holder of the prospecting right, mining permit or reconnaissance permission in order to ensure that the provisions of this programme are adhered to.
- Ongoing and regular reporting of the progress of implementation of this programme will be done.
- Various points of compliance will be identified with regard to the various impacts that the operations will have on the environment.
- Inspections and monitoring shall be carried out on both the implementation of the programme and the impact on plant and animal life.
- Visual inspections on erosion and physical pollution shall be carried out on a regular basis.

Regulation 55 promulgated in terms of the MPRDA requires the following:

Monitoring and performance assessments of environmental management programme or plan

(1) *As part of the general terms and conditions for a prospecting right, mining right or mining permit and in order to ensure compliance with the approved environmental management programme or plan and to assess the continued appropriateness and adequacy of the environmental management programme or plan, the holder of such right must-*

(a) *conduct monitoring on a continuous basis;*

(b) *conduct performance assessments of the environmental management programme or plan as required; and*

(c) *compile and submit a performance assessment report to the Minister to demonstrate adherence to sub-regulation (b).*

(2) *The frequency of performance assessment reporting shall be-*

(a) *in accordance with the period specified in the approved environmental management programme or plan , or, if not so specified;*

(b) *as agreed to in writing by the Minister; or*

(c) *biennially (every two years).*

(3) *The performance assessment report, shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain-*

(a) *information regarding the period that applies to the performance assessment;*

(b) *the scope of the assessment;*

(c) *the procedure used for the assessment;*

(d) *the interpreted information gained from monitoring the approved environmental management programme or plan;*

(e) *the evaluation criteria used during the assessment;*

(f) *the results of the assessment; and*

(g) *recommendations on how and when deficiencies that are identified and/or aspects of non-compliance will be rectified.*

(4) *The holder of a prospecting right, mining right or mining permit may appoint an independent qualified person(s) to conduct the performance assessment and compile the performance assessment report provided that no such appointment shall relieve the holder of the responsibilities in terms of these regulations.*

(5) *Subject to section 30(2) of the Act, the performance assessment report submitted by the holder shall be made available by the Minister to any person on request.*

(6) *If upon consideration by the Minister, the performance assessment executed by the holder is not satisfactory or the report submitted by the holder is found to be unacceptable, the holder must-*

(a) *repeat the whole or relevant parts of the performance assessment and revise and resubmit the report; and/or*

(b) *submit relevant supporting information; and/or*

(c) *appoint an independent competent person(s) to conduct the whole or part of the performance assessment and to compile the report.*

(7) *If a reasonable assessment indicates that the performance assessment cannot be executed satisfactorily by the holder or a competent person(s) appointed by the holder, the Minister may appoint an independent performance assessment person(s) to conduct*

such performance assessment. Such appointment and execution shall be for the cost of the holder.

(8) When the holder of a prospecting right, mining right or mining permit intends closing such operation, a final performance assessment shall be conducted and a report submitted to the Minister to ensure that -

(a) the requirements of the relevant legislation have been complied with;

(b) the closure objectives as described in the environmental management programme or plan have been met; and

(c) all residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts which may occur have been identified, quantified and arrangements for the management thereof have been assessed.

(9) The final performance assessment report shall either precede or accompany the application for a closure certificate in terms of the Act.

F 4.2 Compliance reporting / submission of information

- Layout plans will be updated on a regular basis and updated copies will be submitted on a biennial basis to the Regional Manager
- Reports confirming compliance with various points identified in the environmental management programme will be submitted to the Regional Manager on a regular basis and as decided by the said manager.
- Any emergency or unforeseen impact will be reported as soon as possible.
- An assessment of environmental impacts that were not properly addressed or were unknown when the programme was compiled shall be carried out and added as a corrective action.

F 5 CLOSURE

When the holder of a prospecting right, mining permit or reconnaissance permission intends closing down his/her operations, an environmental risk report shall accompany the application for closure. The requirements of such a risk report is contained in Regulation 60 of the Regulations promulgated in terms of the Act and is quoted below:

F 5.1 ENVIRONMENTAL RISK REPORT

"An application for a closure certificate must be accompanied by an environmental risk report which must include-

(a) the undertaking of a screening level environmental risk assessment where-

(i) all possible environmental risks are identified, including those which appear to be insignificant;

(ii) the process is based on the input from existing data;

(iii) the issues that are considered are qualitatively ranked as –

(aa) a potential significant risk; and/or

(bb) a uncertain risk; and/or

(cc) an insignificant risk.

(b) the undertaking of a second level risk assessment on issues classified as potential significant risks where-

(i) appropriate sampling, data collection and monitoring be carried out;

(ii) more realistic assumptions and actual measurements be made; and

(iii) a more quantitative risk assessment is undertaken, again classifying issues as posing a potential significant risk or insignificant risk.

(c) assessing whether issues classified as posing potential significant risks are acceptable without further mitigation;

(d) issues classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;

(e) documenting the status of insignificant risks and agree with interested and affected persons;

(f) identifying alternative risk prevention or management strategies for potential significant risks which have been identified, quantified and qualified in the second level risk assessment;

(g) agreeing on management measures to be implemented for the potential significant risks which must include-

(i) a description of the management measures to be applied;

(ii) a predicted long-term result of the applied management measures;

(iii) the residual and latent impact after successful implementation of the management measures;

(iv) time frames and schedule for the implementation of the management measures;

(v) responsibilities for implementation and long-term maintenance of the management measures;

(vi) financial provision for long-term maintenance; and

(vii) monitoring programmes to be implemented."

F 5.2 CLOSURE OBJECTIVES

Closure objectives form part of this EMPlan and must-

(a) identify the key objectives for mine closure to guide the project design, development and management of environmental objectives;

(b) provide broad future land use objective(s) for the site; and

(c) provide proposed closure cost

F 5.3 CONTENTS OF CLOSURE PLAN

A closure plan forms part of the EMP and must include the following:

(a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting;

(b) a plan contemplated in Regulation 2(2), coordinated according to generally accepted standards, showing the land or area under closure;

(c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the environmental management programme or plan;

(d) a summary of the results of the environmental risk report and details of identified residual and latent impacts;

(e) a summary of the results of progressive rehabilitation undertaken;

(f) a description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimize and manage residual or latent impacts;

(g) details of any long-term management and maintenance expected;

(h) details of financial provision for monitoring, maintenance and post closure management, if required;

(i) a plan or sketch at an appropriate scale describing the final land use proposal and arrangements for the site;

(j) a record of interested and affected persons consulted; and

(k) technical appendices, if any.

F 5.4 TRANSFER OF ENVIRONMENTAL LIABILITIES TO A COMPETENT PERSON

Should the holder of a prospecting right, mining permit or reconnaissance permission wish to transfer any environmental liabilities and responsibilities to another person or persons, the following will pertain:

(1) An application to transfer environmental liabilities to a competent person in terms of section 48) of the Act, must be completed on Form O as set out in Annexure 1 to the Regulations and be lodged to the Minister for consideration.

(2) The holder of a prospecting right, mining right or mining permit may transfer liabilities and responsibilities as identified in the environmental management plan and the required closure plan to a competent person as contemplated in Regulation 58.

(3) When considering the transfer of environmental liabilities and responsibilities in terms of section 48) of the Act, the Minister must consult with any State department which administers any law relating to matters affecting the environment.

(4) No transfer of environmental liabilities and responsibilities to a competent person may be made unless the Chief Inspector of Mines and the Department of Water Affairs and Forestry have confirmed in writing that the person to whom the liabilities and responsibilities is transferred to, have the necessary qualifications pertaining to health and safety and management of potential pollution of water resources.

F 5.5 NOTES ON LEGAL PROVISIONS

NOTE: The holder of a prospecting right, mining permit or reconnaissance permission must also take cognisance of the provisions of other legislation dealing with matters relating to conservation, and which include, *inter alia,* the following:

* National Monuments Act, 1969 (Act 28 of 1969).
* National Parks Act, 1976 (Act 57 of 1976)
* Environmental Conservation Act, 1989 (Act 73 of 1989)
* National Environmental Management Act, 1998 (Act No. 107 of 1998)
* Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)
* The National Water Act, 1998 (Act 36 of 1998)
* Mine Safety and Health Act, 1996 (Act 29 of 1996)
* The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

G. SPECIFIC ADDITIONAL REQUIREMENTS DETERMINED BY THE REGIONAL MANAGER.

Officials in regional offices may use the following matrix to determine the necessity for additional objectives to be included in this Section of the document:

POTENTIAL ENVIRONMENTAL IMPACTS OF MINING										
Activity	**Disturbance**					**Pollution**				**Visual**
	Landform	**Soil**	**Flora**	**Fauna**	**Heritage**	**Land**	**Water**	**Air**	**Noise**	
Mining										
Access										
Topsoil removal										
Overburden removal										
Mineral Extraction										
Tailings disposal										
Water Abstraction										
Pipeline route										
Transport										
Accommodation										
Waste Disposal										
Electricity										
Hydrocarbon storage										
Workforce										

Please indicate VL, L, M, H, and VH for Very Low, Low, Medium, high and Very High in each column to determine the main area and severity of impact.

G. This section outlines the specific additional requirements that may be set for the operation by the Regional Manager. Additional requirements will only have been set if the Regional Manager is of the opinion that there are specific impacts on the environment which will not be adequately mitigated by the provisions set within the standard version of the Environmental Management Plan. These requirements form part of the Environmental Management Plan and all elements and instructions contained herein must be complied with by the applicant.

H. UNDERTAKING

I, **MOIFO M. L OF VHU HONE HAWE TRADING ENTERPRISE cc** the undersigned and duly authorised thereto by **SML PROJECTS ON BEHALF OF MOPANI DISTRICT** ~~Company/Close Corporation~~/Municipality (Delete that which is not applicable) have studied and understand the contents of this document in its entirety and hereby duly undertake to adhere to the conditions as set out therein including the amendment(s) agreed to by the Regional Manager in Section G and approved on .....

Signed at .**POLOKWANE** this **19TH** day of **MAY 2011.**

....

Signature of applicant **Designation**

Agency declaration: This document was completed by **Moifo M. L of Vhu Hone Hawe Trading Enterprise cc (SHE Consultants)** on behalf of **Mopani District Municipality**

Approval

Approved in terms of Section 39(4) of the Mineral and Petroleum Resources Development Act, 2002 (Act 29 of 2002)

Signed at.....this.....day of.....20.....

.....

REGIONAL MANAGER

REGION:.....

This document has been compiled by the Directorate: Mine Environmental Management of the Department of Minerals and Energy at their Head Office in Pretoria. Any comments, suggestions or inputs will be sincerely appreciated. If you have any comments or suggestions regarding this document or its application, please forward your contribution to:

The Director: Mine Environmental Management
Private Bag X 59
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0001

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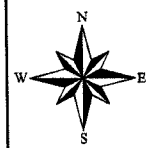
APPENDIX 1: MAPS

Sketch Plan of proposed borrow pit on Farm Roerfontein 161 LT



Co-ordinates:

A: 30°10'53.32"E
23°24'37.34" S

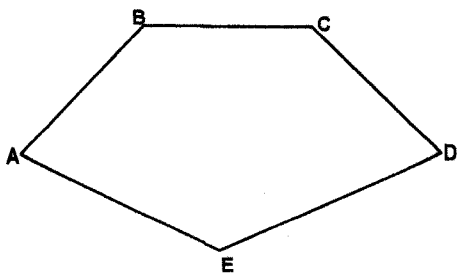
B: 30°10'55.04"E
23°24'35.57"S

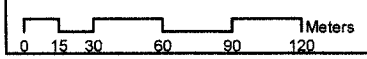
C: 30°10'57.40"E
23°24'35.57"S

D: 30°10'59.20"E
23°24'37.35"S

E: 30°10'56.09"E
23°24'38.71"S

ROERFONTEIN 161





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Legend

- Tertiary road
- Primary road
- Secondary road
- Proposed site
- River/Stream
- 30°10'56.02"E 23°24'36.96"

Limpopo Province
Prospecting Right

The figure lettered A, B, C, D and E in extent 1.07 Hectares

Prepared by:
Phaki Phakanani
Enviromental Consultants

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Polokwane
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Tel: (015) 295 7391
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Applicant:
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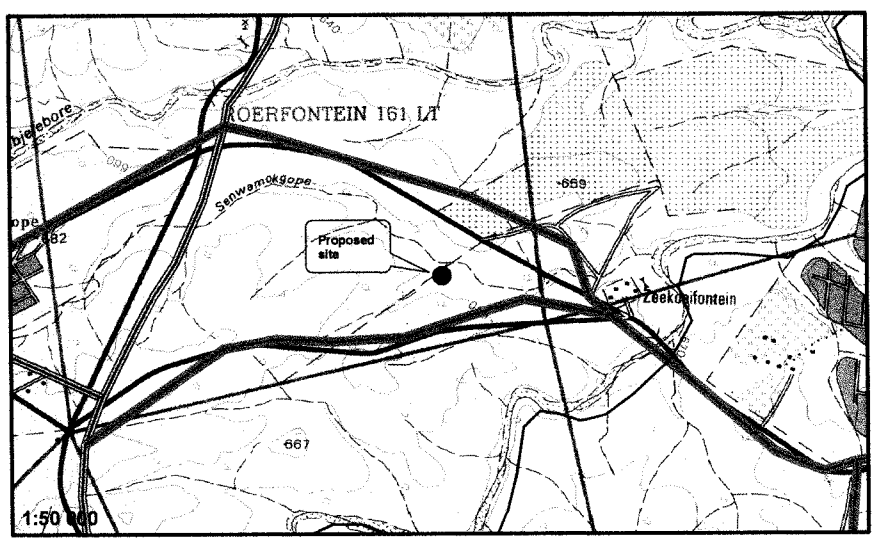
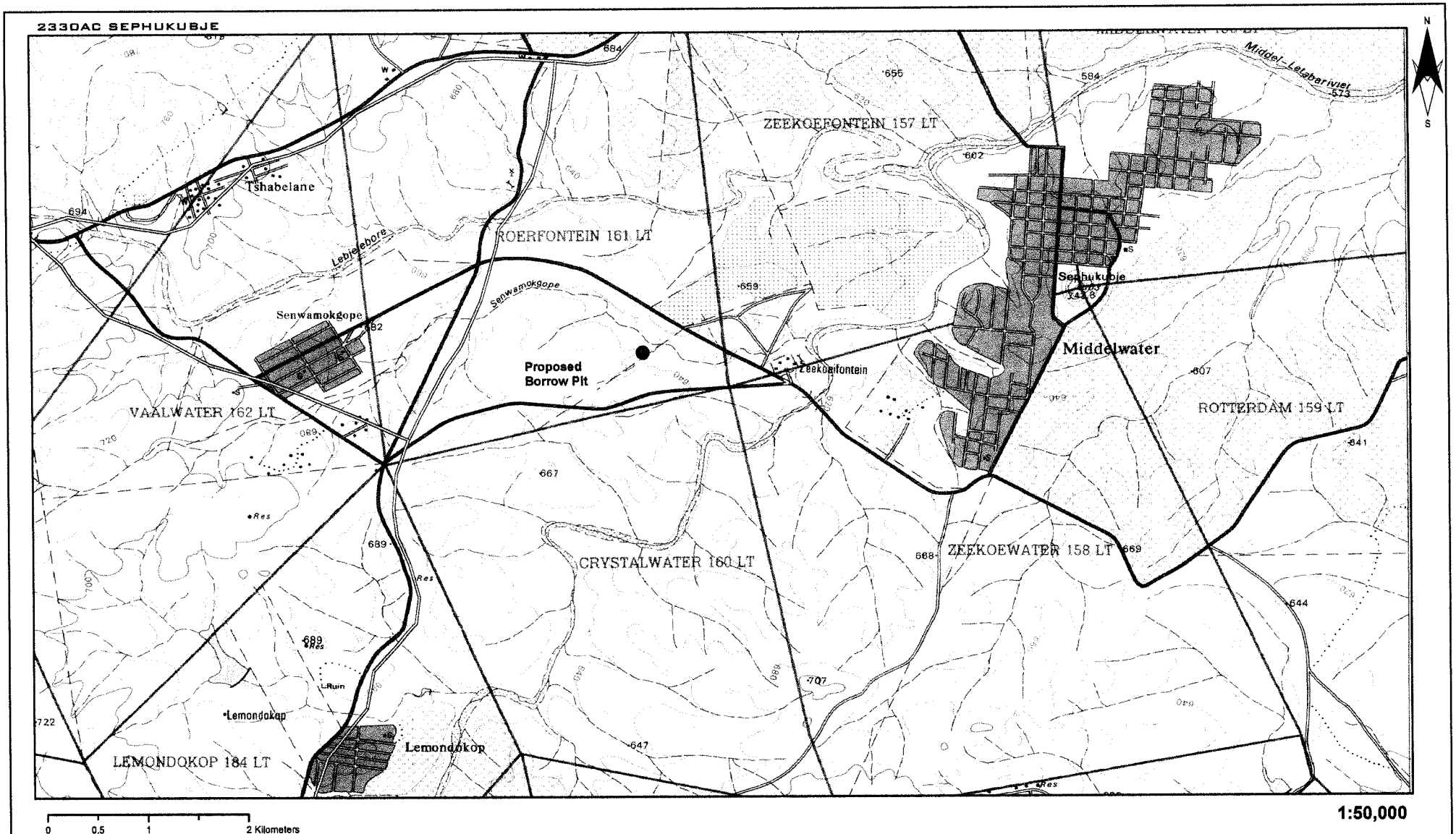
Private Bag X9687
GIYANI
0826
Tel: (015) 811 6300
Fax: (015) 812 4301

.....
Regional Manager
Limpopo Department of
Mineral and Energy

Date.....

SEPHUKUBJE





Title:	Legend:	Co-ordinates:	Prepared by:	Phaki-Phakanani Enviromental Consultants
Locality Map for proposed borrow pit on Farm Roerfontein 161 LT	Primary road, Secondary road, Tertiary road; Station, Railway, Dam; River/Stream, Buildings, Plantation; Bush, Excavations	30°10'53.32"E 23°24'37.34"S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	"Achieving Sustainable Planning Together"
				Drawn by: Segopotse Mabule
				email: segopotse@phakanani.co.za

2330AC SEPHUKUBJE

0 0.5 1 2 Kilometers

1:50,000

Title:	Legend:	Co-ordinates:	Prepared by:	
Land use Map for Borrow pit on Farm Roerfontein 161 LT	**Landuse** CULTIVATED LAND RESIDENTIAL SUBSISTANCE FARMING VACANT / UNSPECIFIED Station ● River/Stream —— Railway —+—+— primary road —— secondary road ═══ tertiary road ┈┈┈	● 30°10'53.32"E 23°24'37.34"S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	**Phaki-Phakanani Enviromental Consultants** 'Achieving Sustainable Planning Together' Drawn by: Segopotse Mabule email: segopotse@phakanani.co.za

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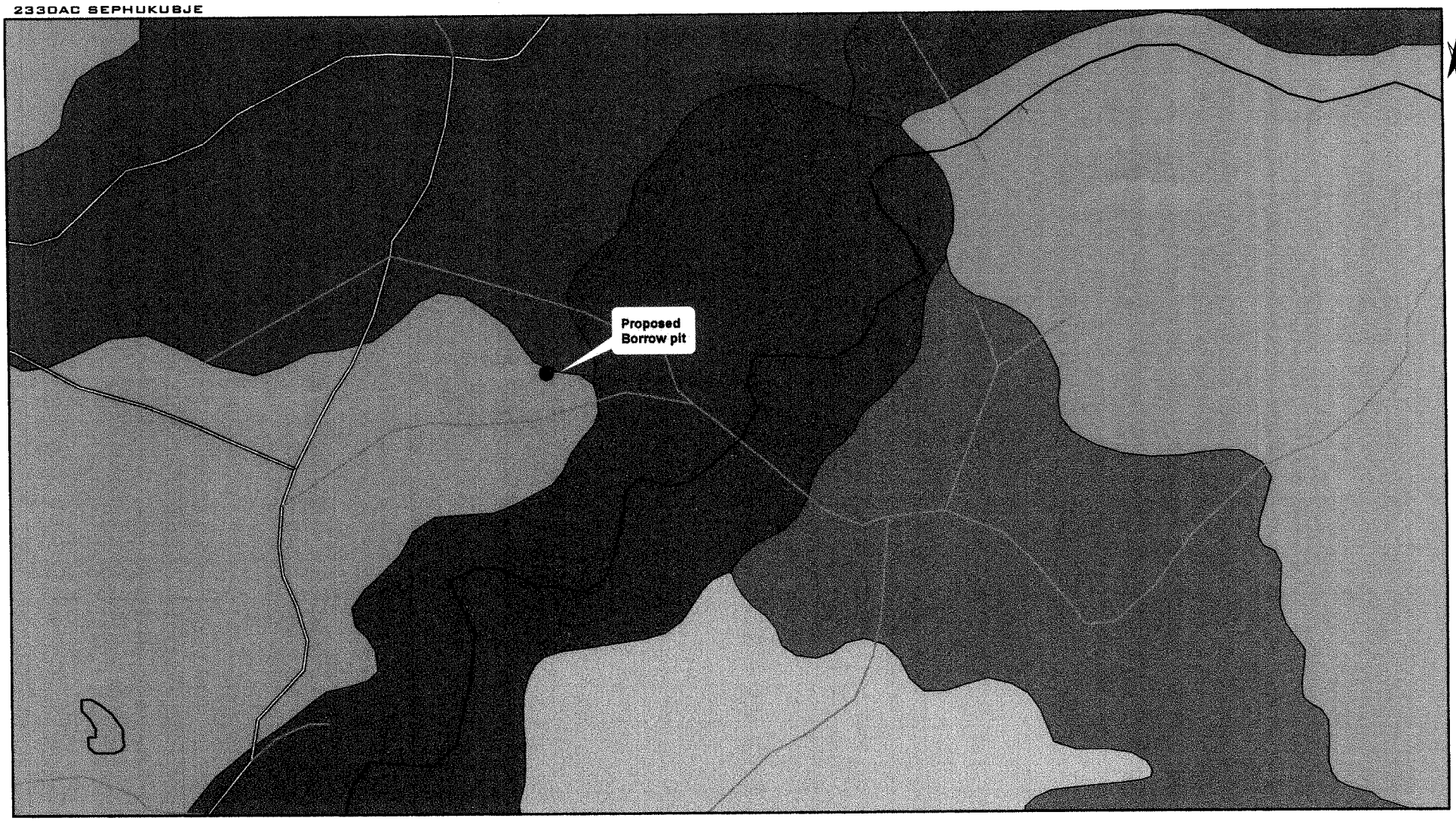

0 0.35 0.7 1.4 Kilometers

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Title:	Legend:			Co-ordinates:	Prepared by:	Phaki-Phakanani Enviromental Consultants
Soil-type Map for Borrow pit on Farm Roerfontein 161 LT	Red-yellow apedal Plinthic catena Glenrosa and/or Mispah Glenrosa and/or Mispah	Glenrosa and/or Mispah Red-yellow apedal Glenrosa and/or Mispah Glenrosa and/or Mispah	Station River/Stream Railway	primary road secondary road tertiary road	30°10'52.46"E 23°24'36.91"S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	"Achieving Sustainable Planning Together" Drawn by: Segopotse Mabule email: segopotse@phakanani.co.za

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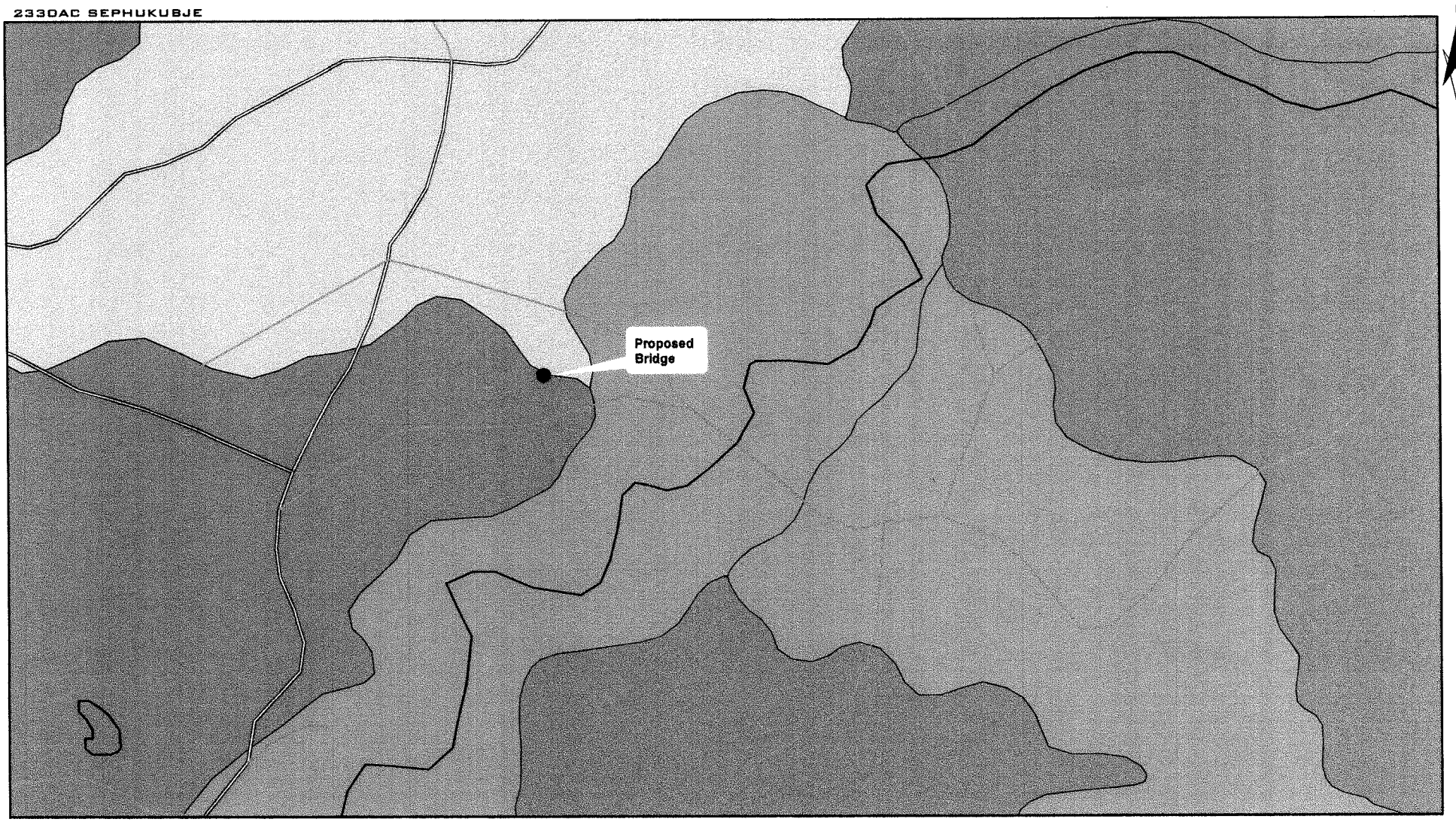

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Title:	Legend:	Co-ordinates:	Prepared by:	Phaki-Phakanani Enviromental Consultants
Soil depth Map for Borrow pit on Farm Roerfontein 161 LT	450mm - 750mm; >750mm; < 450mm; NO DATA; Station; River/Stream; Railway; primary road; secondary road; tertiary road	30°10'52.46"E 23°24'36.91"S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	'Achieving Sustainable Planning Together'
				Drawn by: Segopotse Mabule
				email: segopotse@phakanani.co.za

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0 0.35 0.7 1.4 Kilometers

1:50,000

Title:

Land cover Map for Borrow pit on Farm Roerfontein 161 LT

Land-cover

- BUILT-UP LAND: RESIDENTIAL
- CULTIVATED LAND: COMMERCIAL
- CULTIVATED LAND: SUBSISTANCE
- DEGRADED: FOREST AND WOODLAND
- DEGRADED: THICKET AND BUSHLAND
- THICKET AND BUSHLAND

Legend:

Station ●
River/Stream ——
Railway —+—
primary road ——
secondary road ═══
tertiary road ┈┈┈

Co-ordinates:

●

30°10'53.32"E, 23°24'37.34" S

Prepared by:

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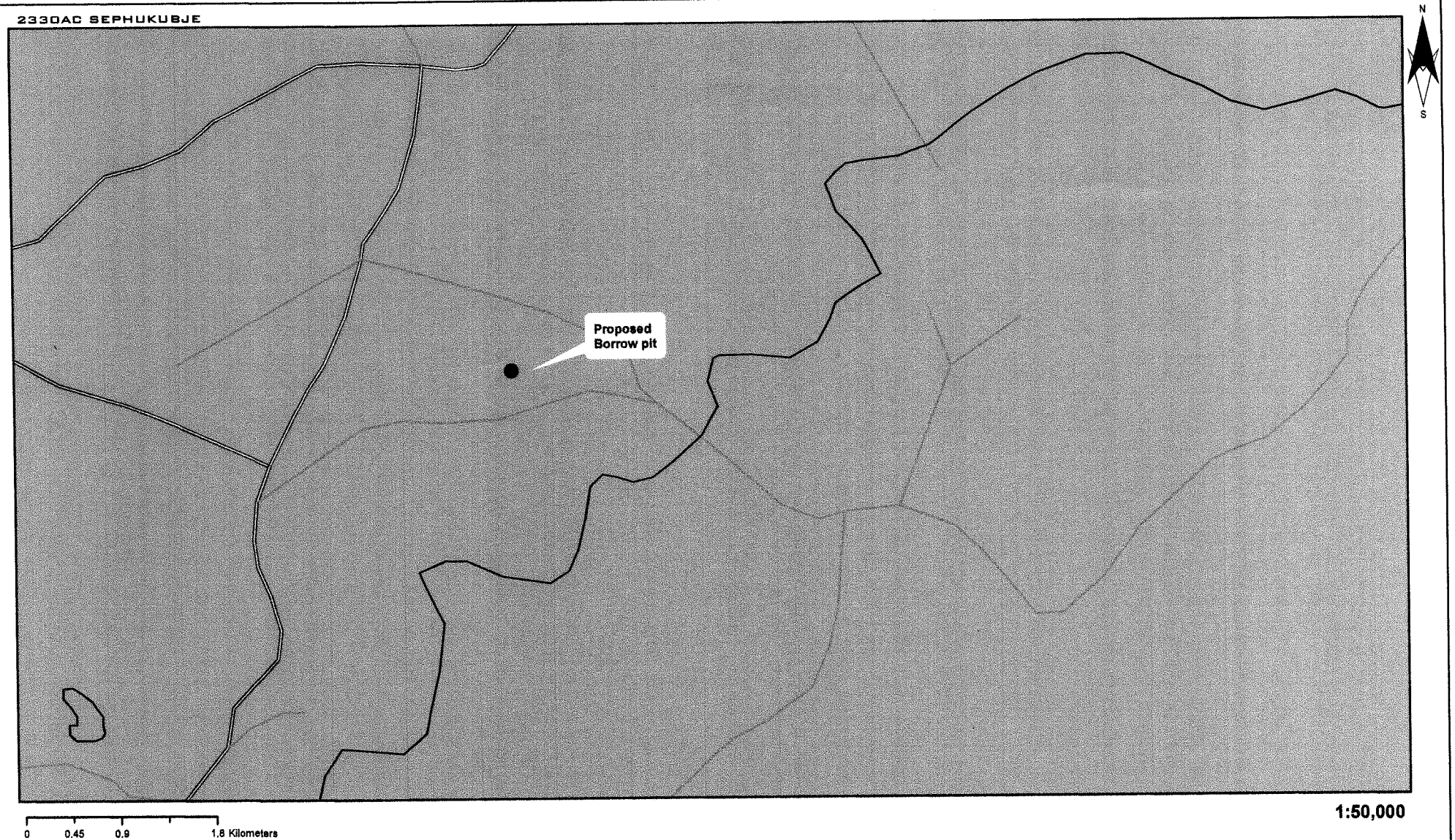
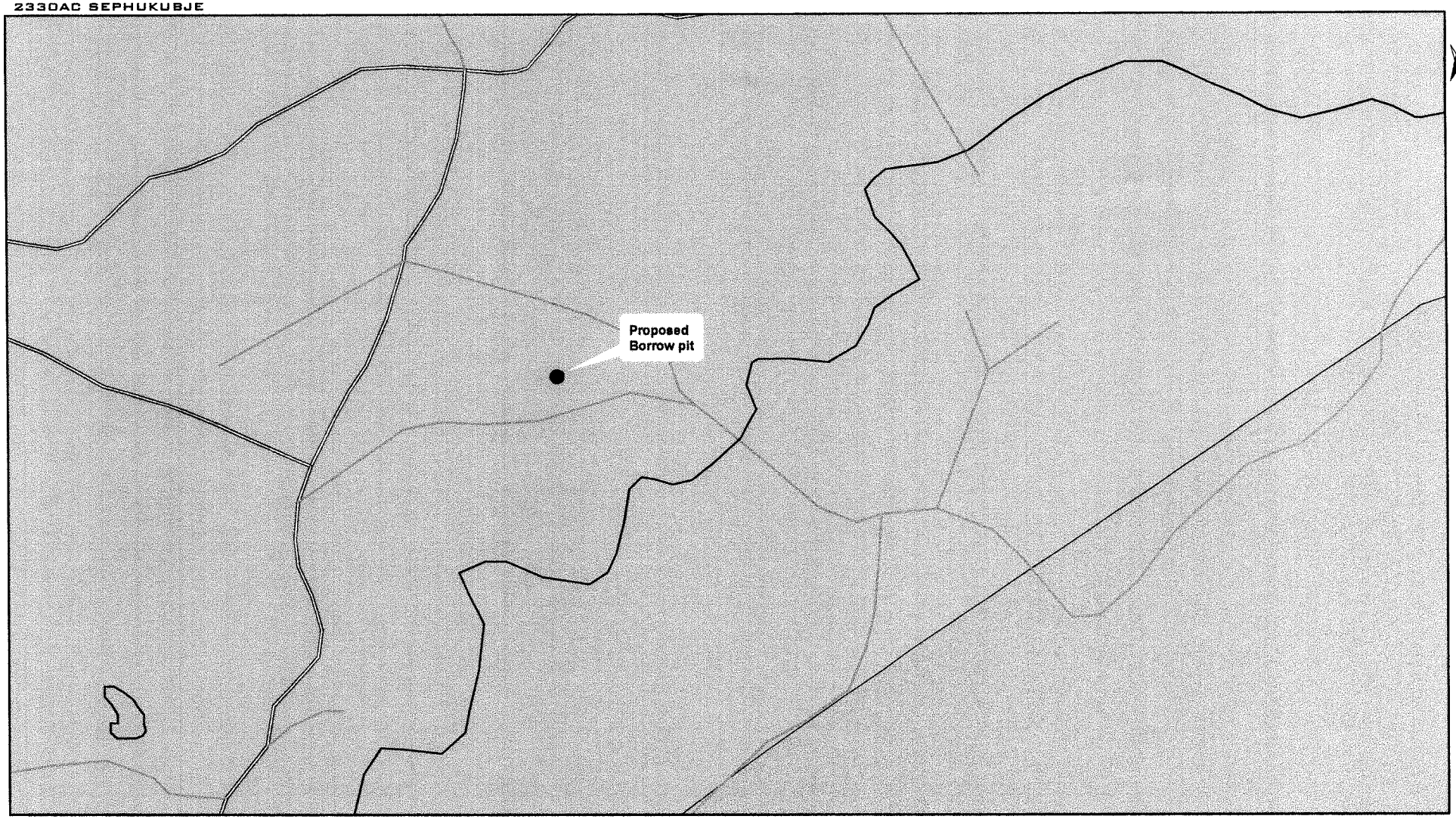
email: segopotse@phakanani.co.za



Title:	Legend:	Co-ordinates:	Prepared by:	Phaki-Phakanani Enviromental Consultants
Slope Map for Borrow pit on Farm Roerfontein 161 LT	0 - 9%, 9 - 15%, 15 - 25%, >25%; Station, River/Stream, Railway; primary road, secondary road, tertiary road	30°10'52.46"E 23°24'36.91"S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	"Achieving Sustainable Planning Together" Drawn by: Segopotse Mabule email: segopotse@phakanani.co.za

2330AC SEPHUKUBJE



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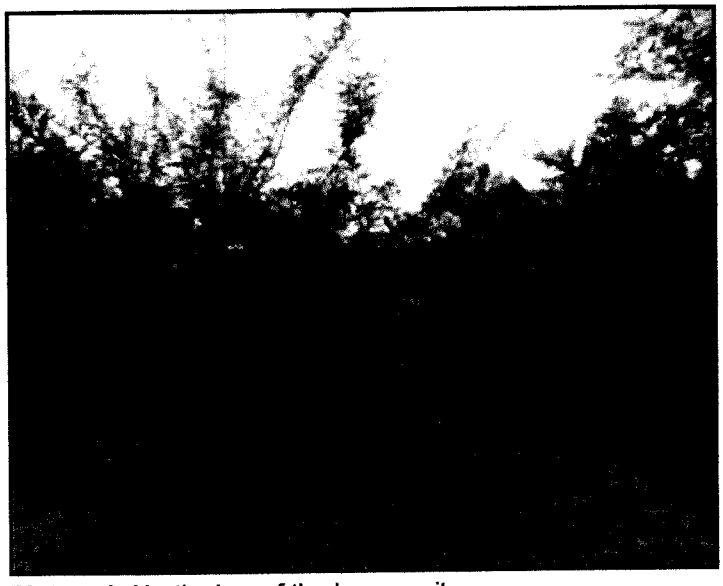
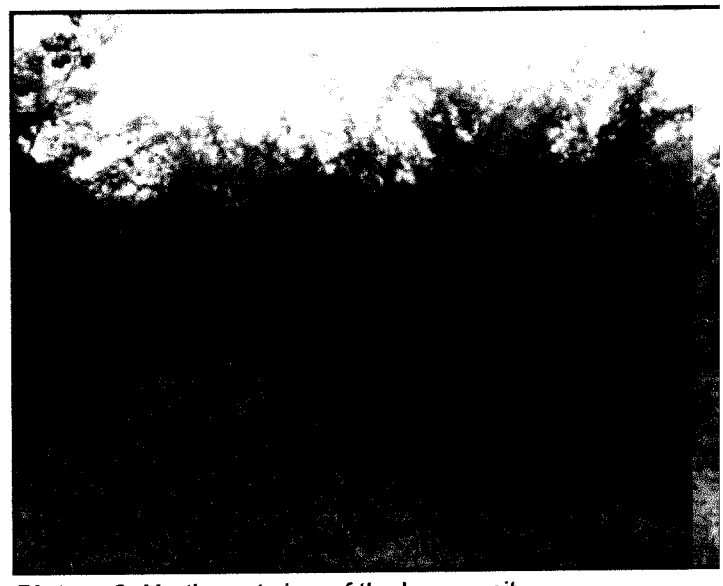
Title:	Legend:	Co-ordinates:	Prepared by:	
Vegetation Map for Borrow pit on Farm Roerfontein 161 LT	**Vegetation** Mixed Lowveld Bushveld Sour Lowveld Bushveld Sweet Lowveld Bushveld Station River/Stream Railway primary road secondary road tertiary road	30°10'53.32" E 23°24'37.34" S	06 Paul Kruger Main Office Polokwane 0700 Tel: (015) 295 7391 Fax: 086 618 5960	**Phaki-Phakanani Enviromental Consultants** "Achieving Sustainable Planning Together" Drawn by: Segopotse Mabule email: segopotse@phakanani.co.za

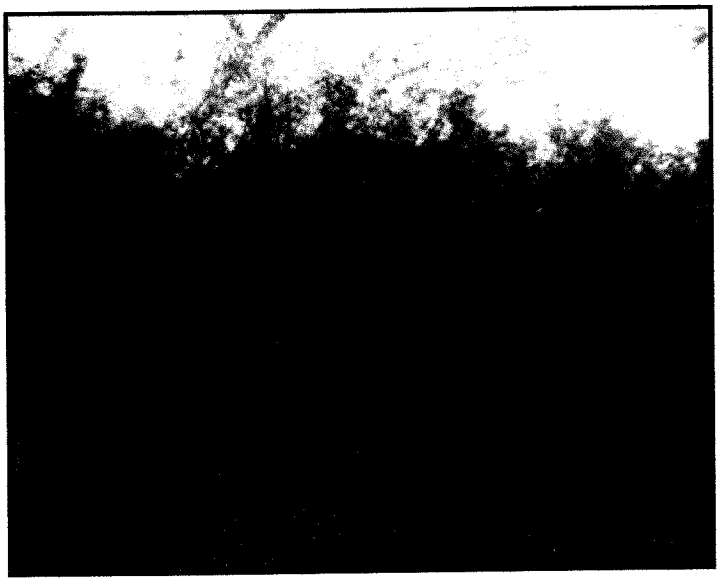
APPENDIX 2: BORROWPIT PICTURES



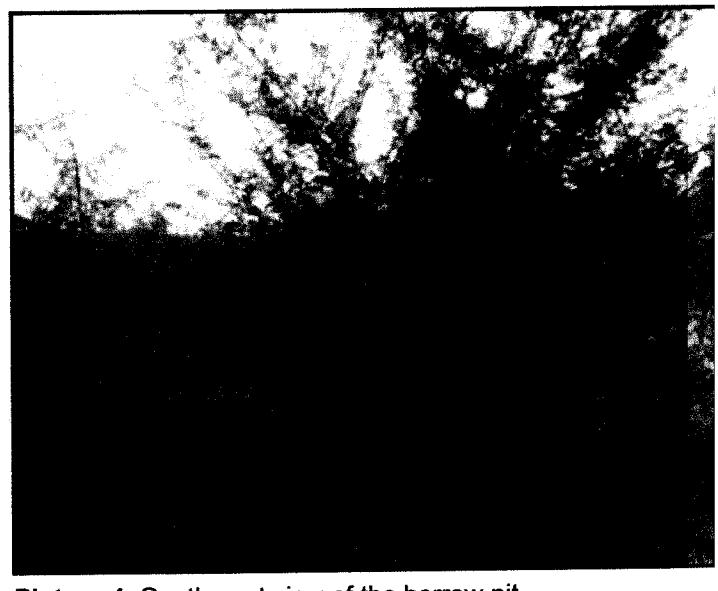
Picture 1: North view of the borrow pit



Picture 2: North-east view of the borrow pit



Picture 3: East view of the borrow pit



Picture 4: South-east view of the borrow pit

Picture 6: South view of the borrow pit

Picture 5: South-west view of the borrow pit

Picture 7: West view of the borrow pit

Picture 8: North-west view of the borrow pit

APPENDIX 3: CONSENT LETTER

Public Participation Process

Several meetings have been held with the traditional authority within Sephukubje and Mamaila area concerning the proposed borrow pit. Overall view of the community does not have problem with the usage of the borrow pit but however they wished that the following could happen:

- The borrow pit area should be fenced and have a gate that will be locked at all times when no activity is taking place.
- The contractor/municipality should rehabilitate the borrow pit after the completion of the bridge construction since they are using the area for cattle grazing.

In light of the meetings held with the local authorities we only managed to get the letter from the local nduna of Sephukubje and we are still waiting for the letter from the Tribal Offices. The follow-up meeting have been set for the 25th May 2011 with the Secretary of the Royal Council.

Vhu Hone Hawe
Trading Enterprise cc

Reg No: 2007/047299/23

ATTENDENCE REGISTER FOR PUBLIC PARTICIPATION MEETING FOR PROPOSED CONSTRUCTION OF SEPHUKUBJE ACCESS BRIDGE ON THE FARM ZEEKOEWATER 158LT WITHIN LETABA LOCAL MUNICIPALITY, MOPANI DISTRICT OF LIMPOPO PROVINCE

DATE: 2011-03-17

VENUE: MAMAILA TRIBAL AUTHORITY

TIME: 10H00

SURNAME + INITIALS	RESIDENTIAL AREA	CONTACT DETAILS	SIGNATURE	COMMENTS
T.M. Mogale	MAMAILA	0791263969	TMogale	Reject Accepted
P.J. MAMAILA	MAMAILA	0834395320	MAMAILA P.J.	Reject Welcomed
Lenyamyabedi NG	Sephukubje	0724183572	NG Lenyamyabedi	Project Accepted
Mamaila S.P	Mamaila	0837883573		Project A

Vhu hone hawe

TRADING ENTERPRISE

Occupational Safety, Health & Environmental Consultants

PUBLIC PARTICIPATION MEETING: PROPOSED CONSTRUCTION OF ACCESS BRIDGE ON THE FARM ZEEKOEWATER AT SEPHUKUBJE VILLAGE WITHIN MOPANI DISTRICT

Date: 10th April 2011

Venue: Sephukubje Village

NAME	RESIDENTIAL AREA	CONTACT DETAILS	SIGNATURE	COMMENTS
Ramodisa S.G	Sephukubje Village	083 884 8977	[signature]	
Rakimana S	Sephukubje	0843209847	[signature]	
Lengyanya	[illegible]			
Mukhananisai	Sephukubje	074 283 1185	mokwanewisgai	
Elvis	SEREPA	082 6901620	Elvis	
Maemo Paddy	Sephukhubje	078 8870038	[signature]	Accepted.

Vhu hone hawe

TRADING ENTERPRISE

Occupational Safety, Health & Environmental Consultants

PUBLIC PARTICIPATION MEETING: PROPOSED CONSTRUCTION OF ACCESS BRIDGE ON THE FARM ZEEKOEWATER AT SEPHUKUBJE VILLAGE WITHIN MOPANI DISTRICT

Date: 10th April 2011

Venue: Sephukubje Village

NAME	RESIDENTIAL AREA	CONTACT DETAILS	SIGNATURE	COMMENTS
DT LEBEPE	Sephukubje / MONATS	073 473-3039	DT LEBEPE	
MJ Ramorwalo	Sephokubje Matlalapa	083 622 5355	[signature]	
J. Khuti	Sephukubje MANATS	0733687044	J khuti	
MR Mathala	Sephukubje Manats	076 1988-972	F mathala	
DJ Ashasha	sephokhuBye		Solomon	kelekalephogo
MF Palusa	Sephopubje	078 3636146	Palusa	
M. MMAHEPA	Sephukubje Modek	073-9439934	Mathebus	
GEORGE	082872472			
W. MMAHANA	071-2803862		[signature]	
M Motubatse				
R Makitimela				
P. Kappa				
MAKORO M.N	SEPHUKHUBJE	08 989 6391	Makoro	
SELAMOLELA NF	SEPHUKUBJE	0837647376	[signature]	
Mabina A	SEPHUKUBJE	083 593 4874	Mabina	
Jenyanyabedi	Sephukubje	0724183577	Jenyanyabedi	Project accepted
SEKHOMOTATTE R	SEPHUKUBJE	0728826396	[signature]	project accepted
Mabidikala R.	SEPHUKUBJE	—	RiFilwe	

Vhu hone hawe

TRADING ENTERPRISE

Occupational Safety, Health & Environmental Consultants

PUBLIC PARTICIPATION MEETING: PROPOSED CONSTRUCTION OF ACCESS BRIDGE ON THE FARM ZEEKOEWATER AT SEPHUKUBJE VILLAGE WITHIN MOPANI DISTRICT

Date: 10th April 2011

Venue: Sephukubje Village

NAME	RESIDENTIAL AREA	CONTACT DETAILS	SIGNATURE	COMMENTS
Georgina	Sephukhubje	0722168593	G.molaudi	
Ramobei	Roerfontein	0719366884	Ramobei	
machete	Roerfontein	0789791072.	[signature]	
machery	Sephukubje	0730246084	Modi-Machete	
[illegible]	[illegible]	- - - - - .	[signature]	

Vhu hone hawe

TRADING ENTERPRISE

Occupational Safety, Health & Environmental Consultants

PUBLIC PARTICIPATION MEETING: PROPOSED CONSTRUCTION OF ACCESS BRIDGE ON THE FARM ZEEKOEWATER AT SEPHUKUBJE VILLAGE WITHIN MOPANI DISTRICT

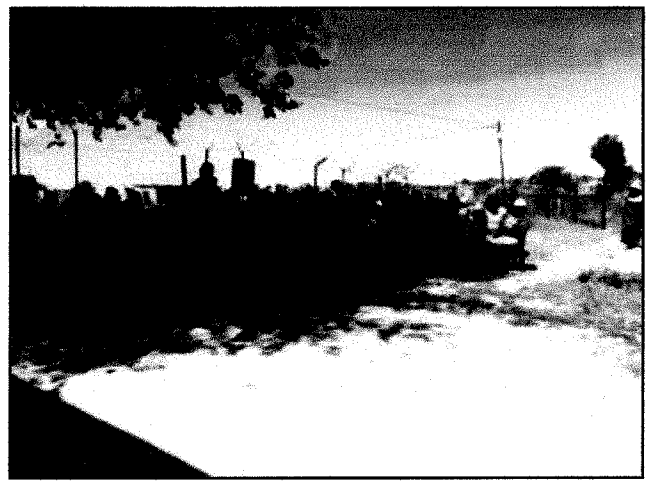
Date: 10th April 2011

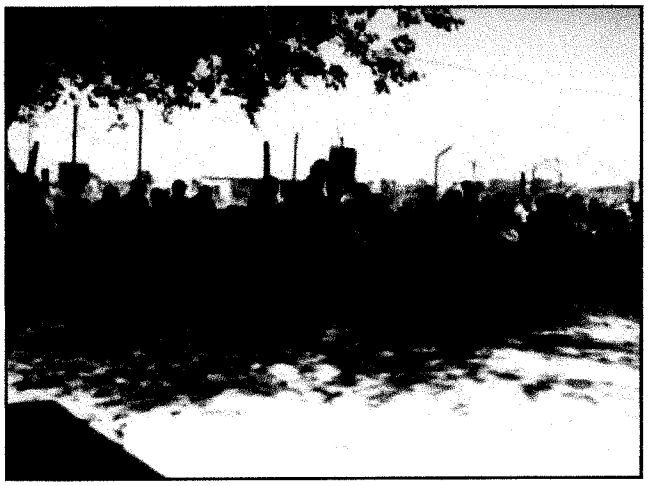
Venue: Sephukubje Village

NAME	RESIDENTIAL AREA	CONTACT DETAILS	SIGNATURE	COMMENTS
Joyce	SePhokubje	0734773065	M.J	Project accepted
HERMINAH	Sephokubje	0783787585	R.H.	project accepted
BENDY	Sephokubje	0746337074	MOILA M.B	Project accepted
Mapula	Sephokubje	0734702401	R.M.	project accepted
Elsie	sephukubje	073 9477699	E.R.	Project accepted.
Tebogo	sephukubje	0787503785	T.R.	Project accepted.
Refilwe	sephukubje	0731546282	R.M	project accepted
Maggie	Sephokubje	0793969015	[illegible]	project accepted
Selaelo	Sephukubje	0731848484	S.S. Sephukubje	Project accepted
Maria	Sephukubje	078[illegible]46441	P.M	project accepted
maria	sephukubje	.	S.M	project accepted
maphego	Sephukubje	0835838333	M.M	project accepted
Rector	Sephukubje	0788654571	[illegible]	Project accept
Sematsi	Sephukubje	0727588858	S.Shashi	project accepted
Monette	Sephukubje	0732996671	Mohaleri	project accepted
Mottalo	〃	083 695 7-[illegible]	[illegible]	project [illegible]
Sikhonoane	Sephukubje	0739196347	[illegible]	Accepted
Ramodisas	Sephukubie	0838848977	[illegible]	accepted
Morupa	Sephukubje	0781907141	M.H.	Accepted
Sethibela	Sephukubje	0785619141	S.S	Accepted

PICTURES TAKEN DURING THE MEETING WITH THE NDUNA FOR SEPHUKUBJE VILLAGE

PICTURES TAKEN DURING MEETING WITH COMMUNITY OF SEPHUKUBJE VILLAGE





10/04/2019 goTswa go Kgoro yaMoNAPE
Mo eng Warena eleng Lucas Moino
Mabapi le construction yago aga lebotho
Mabapi lekgopelo yabona ya go epa MAE
gore na rea ekwanela naa
rena ka mo rekwane re yaba amogela
fela rekgopela pleke ye bashomelang
Mogo yona ba ~~efensetsi~~ efensele
Re ka leboga shomisano yabona
Kgoro Kea MoNAPe

by SiG

1. P A Rabc yalca
2. William maifetana
3. Mashashani Solomon
4 Samuel
5= S. W. LEBopa

APPENDIX 4: FINANCIAL PROVISION – PROOF OF PAYMENT

The proof of payment for financial provision will be submitted later when we submit the Consent letter from Mamaila Tribal Authority.

APPENDIX 5: HERITAGE IMPACT ASSESSMENT (HIA) REPORT

Tel: (015) 225 7075
083 770 2131
Fax: 086 670 9130
E-Mail: hr19@mweb.co.za

CULTURAL RESOURCE CONSULTANTS

P.O. Box 1600
POLOKWANE
0 7 0 0

Vhu Hone Hawe Trading Enterprise
Box 2414
Polokwane
0700

29 March 2011

***Phase 1 Heritage Resource Impact Assessment* (Scoping & Evaluation)**
PROPOSED BORROW PIT AT SEPHUKUBJE VILLAGE
GREATER LETABA LOCAL MUNICIPALITY
MOPANI DISTRICT MUNICIPALITY, LIMPOPO
STATEMENT WITH REGARD TO HERITAGE RESOURCES MANAGEMENT

Map reference: South Africa 1:50000 2230 BC
General GPS: *S23° 24' 36.9" E30° 10' 56.0"*
Farm: Roerfontein 161LT

INTRODUCTION

The statement with regard to heritage resources management addresses a proposed borrow pit, at the village of Sephukubje, in the Limpopo Province.

The Project proposal constitutes an activity, which may potentially be harmful to heritage resources that may occur in the demarcated area. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (section 34), archaeological sites and material (section 35) and graves and burial sites (section 36). In order to comply with the legislation, the Applicant requires information on the heritage resources, and their significance that occur in the demarcated area. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources. (For pertinent legislation see Appendix A and terminology see Appendix B).

TERMS OF REFERENCE

The author was contracted to undertake a Phase 1 *Heritage Resources Impact Assessment* for a proposed borrow pit, near the village of Sephukubje, in the Limpopo Province.

The aim of the assessment was to determine the **probability** of the presence of heritage resources such as archaeological or historical sites and features, graves and places of religious and cultural significance; to assess the impact of the proposed project on such heritage resources; and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features. This survey forms part of the EIA-scoping process and data regarding the environmental and socio-demographic conditions and issues should be read in the main report.

DESCRIPTION OF THE TERRAIN

The terrain is situated south of the R81, approximately 60km from Giyani. The area to be used is currently utilised for grazing purposes. Surface visibility was good and no limiting factors were experienced. Sephukubje Village is a fairly establishment and does show on the Topographical map.

METHODOLOGY

A pedestrian survey of the demarcated area was undertaken, during which standard methods of observation were applied. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion. Special attention was given to disturbances, either natural or man-made, as well as changes in vegetation that may have resulted from previous human intervention.

DISCUSSION

According to the most recent archaeological cultural distribution sequences by Huffman (2007), this area falls within the distribution area of various cultural groupings originating out of both the Urewe Tradition (eastern stream of migration) and the Kalundu Tradition (western stream of migration). The facies that may be present are:

Urewe Tradition: Kwale branch- Mzonjani *facies AD* 450 – 750 (Early Iron Age)
Nkope branch- Gokomere *facies* AD 550 - 750 (Early Iron Age)
Moloko branch- Icon *facies AD* 1300 - 1500 (Late Iron Age)

Kalundu Tradition: Happy Rest sub-branch – Happy Rest *facies* AD 500 – 750 (Early Iron Age)
Malapati *facies* AD 750 – 1030 (Early Iron Age)
Gumanye *facies* AD 1030–1250
Mapungubwe *facies* AD 1250 – 1300
Great Zimbabwe *facies* AD 1300 – 1700
Khami *facies* AD 1400 - 1820
Letaba *facies AD* 1600 - 1840 (Late Iron Age)

None of the above-mentioned archaeological remains or other heritage remains of importance were noted on the terrain. However, the archaeological cultures referred to above may be present as obscured subterranean deposits.

No areas designating cultural gatherings or graves were recorded in the study area.

MANAGEMENT AND MITIGATION MEASURES

This letter serves to confirm that *no significant heritage resources* such as archaeological or historical material or places of social or religious significance were found on the site of the proposed development. *From a heritage resources management point of view, we have no objection with regard to the development.*

The discovery of previously undetected subterranean heritage remains on the terrain must be reported to the Limpopo Heritage Authority or the archaeologist, and may require further mitigation measures.

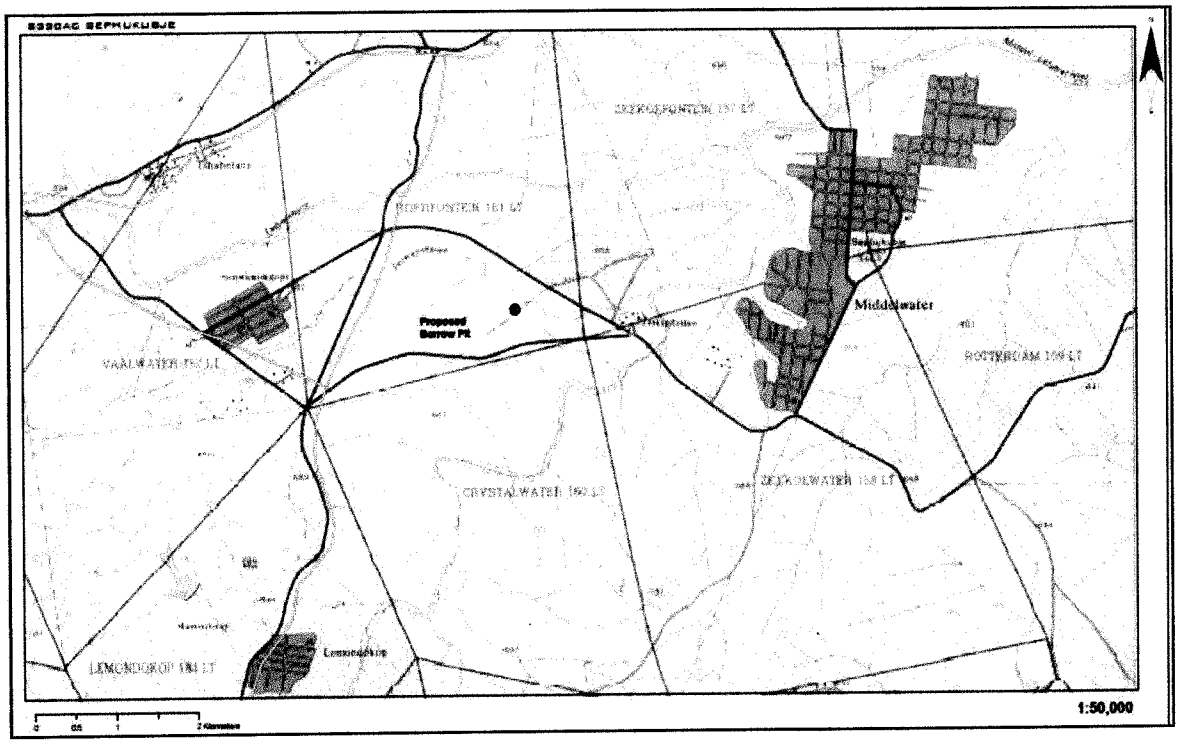
REFERENCE

Huffman, T.N. 2007. *Handbook to the Iron Age. The archaeology of Pre-colonial Farming Societies in Southern Africa.* University of KwaZulu-Natal Press.

Yours faithfully

FRANS ROODT (*BA Hons, MA Archaeology, Post Grad. Dip. Museology; UP*)
Principal Investigator for R and R Cultural Resource Consultants

Fig 1. General view of the project area



Locality Map

APPENDIX A

In terms of the National Heritage Resources Act 25 of 1999 the following is of relevance:

Historical remains

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeological remains

Section 35.(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority or museum, which must immediately notify such heritage resources authority.

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority-

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite.

Burial grounds and graves

Section 36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

(a) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave

or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(b) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

Section 36 (6) Subject to the provision of any law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority-

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Culture resource management

Section 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development* ...must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

***'development'** means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including-

(a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;

(b) carry out any works on or over or under a place*;

(e) any change to the natural or existing condition or topography of land, and

(f) any removal or destruction of trees, or removal of vegetation or topsoil;

***'place'** means a site, area or region, a building or other structure* ...

***'structure'** means any building, works, device or other facility made by people and which is fixed to the ground,

Appendix B

Terminology:

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs before present.

Middle Stone Age: Various lithic industries in SA dating from ± 250 000 yr - 30 000 yrs before present.

Late Stone Age: The period from ± 30 000-yr to contact period with either Iron Age farmers or European colonists.

Early Iron Age: Most of the first millennium AD.

Middle Iron Age: 10^{th} to 13^{th} centuries AD.

Late Iron Age: 14^{th} century to colonial period. *The entire Iron Age represents the spread of Bantu speaking peoples.*

Historical: Mainly cultural remains of western influence and settlement from AD 1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA.

Phase 1 assessment: Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 assessments: In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.