

**Cultural heritage impact assessment for
THE CONSTRUCTION OF THE PROPOSED SHANGONI GATE AND
ASSOCIATED INFRASTRUCTURE IN THE KRUGER NATIONAL PARK,
LIMPOPO PROVINCE**

CULTURAL HERITAGE ASSESSMENT FOR THE CONSTRUCTION OF THE PROPOSED SHANGONI GATE AND ASSOCIATED INFRASTRUCTURE IN THE KRUGER NATIONAL PARK, LIMPOPO PROVINCE

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Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services, for which a fair remuneration is charged.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
May 2016

EXECUTIVE SUMMARY

CULTURAL HERITAGE ASSESSMENT FOR THE CONSTRUCTION OF THE PROPOSED SHANGONI GATE AND ASSOCIATED INFRASTRUCTURE IN THE KRUGER NATIONAL PARK, LIMPOPO PROVINCE

The proposed opening of the Shangoni Gate as a new gate into Kruger National Park (KNP) forms part of vision of the Park to create benefits to neighbouring communities. It will be established to facilitate tourist flows into the existing Kruger National Park camps and to create economic opportunities outside the Park to bordering communities. It will be an opportunity to conceive, plan and develop a brand new tourism destination and economic development hub in an area that presently does not attract many tourists because it lacks essential tourism facilities and attractions. Therefore, the plan is to realize the objective of creating benefits and business opportunities for the Muyexe, Mininginisi and Altein communities.

In accordance with Section 38 of the NHRA, an independent heritage consultant was therefore appointed by **Envirovolution Consulting** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where the planned development is to take place.

The cultural landscape qualities of the study region essentially consist of a single component, being made up of a limited Stone Age and Iron Age occupation. The most probable reason for this low occupation of the region is the fact that the environment, being made up of Mopane Bushveld, was not conducive to settlement by early agro-pastoralists. Other contributing factors are the prevalence of malaria and nagana, the latter a sickness that prevents the keeping of cattle. This absence of human settlement in the area is clearly indicated by the work done by Meyer (1987) who during his survey recorded no archaeological sites on this section of the Shingwidzi River. Similarly, Pienaar (2007) also indicate that, with the exception of one site, Red Rock or *Ribye-ra-Khubyane*, there are no settlements or other heritage sites along this section of the river.

Identified sites

- A very limited number of stone tools dating the Early and Later Stone Age were identified as surface material in isolated spots.
- A single natural site, revered by local Black people, occurs a short distance off the access road.

Impact assessment:

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

- As all the Stone Age material was identified on the surface in areas where sheet erosion is taking place, the material is viewed to have very little significance, as it is not in its original context any more.
 - No further action is required
- A natural site revered by local Black people is located some distance off from the road that is to be upgraded and would therefore not be impacted on by the proposed development.
 - No further action is required

Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue, on condition of acceptance of the proposed mitigation measures.

Conditions for inclusion in the environmental authorisation:

- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk
Heritage Consultant
May 2016

TECHNICAL SUMMARY

Property details						
Province	Limpopo					
Magisterial district	Soutpansberg/Phalaborwa					
District municipality						
Topo-cadastral map	2331AA, 2331AB					
Farm name	Kruger National Park					
Closest town	Phalaborwa					
Coordinates	End points					
	No	Latitude	Longitude	No	Latitude	Longitude
	1	S 23.14497	E 30.93170	2	S 23.17937	E 31.32250

Development criteria in terms of Section 38(1) of the NHR Act	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 sq m	No
Any other development category, public open space, squares, parks, recreation grounds	No

Development	
Description	Development of a new access gate, accommodation and access road
Project name	Shangoni Gate

Land use	
Previous land use	Game reserve
Current land use	Game reserve

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	II
TECHNICAL SUMMARY	IV
TABLE OF CONTENTS	V
LIST OF FIGURES.....	V
GLOSSARY OF TERMS AND ABBREVIATIONS.....	VI
1. INTRODUCTION.....	1
2. TERMS OF REFERENCE	1
3. HERITAGE RESOURCES.....	2
4. STUDY APPROACH AND METHODOLOGY	3
5. SITE SIGNIFICANCE AND ASSESSMENT	5
6. PROJECT DESCRIPTION.....	7
7. DESCRIPTION OF THE AFFECTED ENVIRONMENT	9
8. MANAGEMENT MEASURES	14
9. RECOMMENDATIONS.....	15
10. REFERENCES.....	17
APPENDIX 1: INDEMNITY AND TERMS OF USE OF THIS REPORT	18
APPENDIX 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE RESOURCES	19
APPENDIX 3. RELEVANT LEGISLATION	20
APPENDIX 4. RELOCATION OF GRAVES	22
APPENDIX 5. SPECIALIST COMPETENCY.....	23
APPENDIX 6 INVENTORY OF IDENTIFIED CULTURAL HERITAGE SITES.....	24

LIST OF FIGURES

	Page
Fig. 1. Map indicating the track log of the field survey.	5
Fig. 2. The location of the study area.....	8
Fig. 3. Layout of the proposed development.	8
Fig. 4. Views over the study area.....	9
Fig. 5. Section of Fred Jeppe's map of the Transvaal Republic, dating to 1899.	12
Fig. 6. Section of Missionary H. Berthoud's map dating to 1903.	12
Fig. 7. Location of the identified sites.....	14

GLOSSARY OF TERMS AND ABBREVIATIONS

TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1 - 2.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Later Stone Age	30 000 - until c. AD 200

Iron Age: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. As they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

Historical Period: Since the arrival of the white settlers - c. AD 1830 - in this part of the country.

ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

CULTURAL HERITAGE ASSESSMENT FOR THE CONSTRUCTION OF THE PROPOSED SHANGONI GATE AND ASSOCIATED INFRASTRUCTURE IN THE KRUGER NATIONAL PARK, LIMPOPO PROVINCE

1. INTRODUCTION

The proposed opening of the Shangoni Gate as a new gate into Kruger National Park (KNP) forms part of vision of the Park to create benefits to neighbouring communities. It will be established to facilitate tourist flows into the existing Kruger National Park camps and to create economic opportunities outside the Park to bordering communities. It will be an opportunity to conceive, plan and develop a brand new tourism destination and economic development hub in an area that presently does not attract many tourists because it lacks essential tourism facilities and attractions. Therefore, the plan is to realize the objective of creating benefits and business opportunities for the Muyexe, Mininginisi and Altein communities.

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. However, according to Section 27(18) of the National Heritage Resources Act (NHRA), No. 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was therefore appointed by **Envirovolution Consulting** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where the planned development is to take place.

This report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended and is intended for submission to the South African Heritage Resources Agency (SAHRA).

2. TERMS OF REFERENCE

The aim of a full HIA investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives are to identify heritage resources (involving site inspections, existing heritage data and additional heritage specialists if necessary); assess their significances; assess alternatives in order to promote heritage conservation issues; and to assess the acceptability of the proposed development from a heritage perspective.

The result of this investigation is a heritage impact assessment report indicating the presence/ absence of heritage resources and how to manage them in the context of the proposed development.

Depending on SAHRA's acceptance of this report, the developer will receive permission to proceed with the proposed development, on condition of successful implementation of proposed mitigation measures.

2.1 Scope of work

The aim of this study is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the areas where the development is to take place.

This includes:

- Conducting a desk-top investigation of the area;
- A visit to the proposed development site,

The objectives were to:

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

2.2 Limitations

The investigation has been influenced by the following factors:

- It is assumed that the description of the proposed project, provided by the client, is accurate.
- No subsurface investigation (i.e. excavations or sampling) were undertaken, since a permit from SAHRA is required for such activities.
- It is assumed that the public consultation process undertaken as part of the Environmental Impact Assessment (EIA) is sufficient and that it does not have to be repeated as part of the heritage impact assessment.
- The unpredictability of buried archaeological remains.
- This report does not consider the palaeontological potential of the site.

3. HERITAGE RESOURCES

3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
 - ancestral graves;
 - royal graves and graves of traditional leaders;
 - graves of victims of conflict;
 - graves of individuals designated by the Minister by notice in the Gazette;
 - historical graves and cemeteries; and
 - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;

- movable objects, including-
 - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - objects to which oral traditions are attached or which are associated with living heritage;
 - ethnographic art and objects;
 - military objects;
 - objects of decorative or fine art;
 - objects of scientific or technological interest; and
 - books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- sites of significance relating to the history of slavery in South Africa.

A matrix was developed whereby the above criteria were applied for the determination of the significance of each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar identified sites.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 6 below and illustrated in Figure 2.

4.2 Methodology

4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted – see list of references in Section 10.

- Information on events, sites and features in the larger region were obtained from these sources.

4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor General* and the *National Archives of South Africa* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development.

4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature were obtained from these sources

4.2.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by Envirolution Consulting by means of maps and .kml files indicating the development area. This was loaded onto a Nexus 7 tablet and used in Google Earth during the field survey to access the areas.

The area was visited on 17 to 19 April 2016. The site was investigated by travelling the route of the proposed road upgrade in both directions, as well as walking transects across the proposed development sites – see Fig. 1 below.

The following is relevant to the field survey:

- During the site visit the archaeological visibility was somewhat limited by the vegetation encountered.
- As this is a game reserve with dangerous animals roaming about, the consultants were accompanied by armed game rangers.

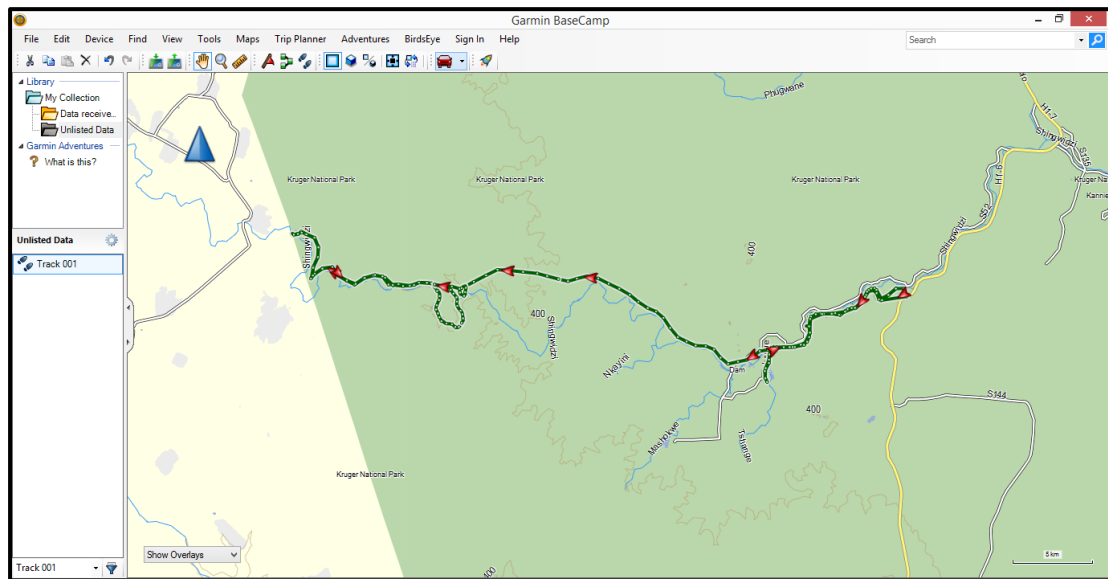


Fig. 1. Map indicating the track log of the field survey.

4.2.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS) and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

The track log and identified sites were recorded by means of a Garmin Oregon 550 handheld GPS device. Photographic recording was done by means of a Canon EOS 550D digital camera.

Map datum used: Hartebeeshoek 94 (WGS84).

5. SITE SIGNIFICANCE AND ASSESSMENT

5.1 Heritage assessment criteria and grading

The National Heritage Resources Act, Act no. 25 of 1999, stipulates the assessment criteria and grading of heritage sites. The following grading categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation on a local authority level.

A matrix was developed whereby the criteria, as set out in Sections 3(3) and 7 of the NHRA, were applied for each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar sites.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable of mitigation measures would allow the development activities to continue.

5.2 Methodology for the assessment of potential impacts

All impacts identified during the EIA stage of the study will be classified in terms of their significance. Issues were assessed in terms of the following criteria:

- The **nature**, a description of what causes the effect, what will be affected and how it will be affected;
- The physical **extent**, wherein it is indicated whether:
 - 1 - the impact will be limited to the site;
 - 2 - the impact will be limited to the local area;
 - 3 - the impact will be limited to the region;
 - 4 - the impact will be national; or
 - 5 - the impact will be international;
- The **duration**, wherein it is indicated whether the lifetime of the impact will be:
 - 1 - of a very short duration (0–1 years);
 - 2 - of a short duration (2-5 years);
 - 3 - medium-term (5–15 years);
 - 4 - long term (> 15 years); or
 - 5 - permanent;
- The **magnitude** of impact, quantified on a scale from 0-10, where a score is assigned:
 - 0 - small and will have no effect;
 - 2 - minor and will not result in an impact;
 - 4 - low and will cause a slight impact;
 - 6 - moderate and will result in processes continuing but in a modified way;
 - 8 – high, (processes are altered to the extent that they temporarily cease); or
 - 10 - very high and results in complete destruction of patterns and permanent cessation of processes;
- The **probability** of occurrence, which describes the likelihood of the impact actually occurring and is estimated on a scale where:
 - 1 - very improbable (probably will not happen);
 - 2 - improbable (some possibility, but low likelihood);
 - 3 - probable (distinct possibility);
 - 4 - highly probable (most likely); or
 - 5 - definite (impact will occur regardless of any prevention measures);
- The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- The **status**, which is described as either positive, negative or neutral;
- The degree to which the impact can be reversed;
- The degree to which the impact may cause irreplaceable loss of resources; and
- The degree to which the impact can be mitigated.

The **significance** is determined by combining the criteria in the following formula:

$S = (E+D+M) \times P$; where

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are calculated as follows (Table 1 below):

Table 1: Significance ranking

Significance of impact					
Extent	Duration	Magnitude	Probability	Significance	Weight
-	-	-	-	-	-

Points	Significant Weighting	Discussion
< 30 points	Low	where this impact would not have a direct influence on the decision to develop in the area
31-60 points	Medium	where the impact could influence the decision to develop in the area unless it is effectively mitigated
> 60 points	High	where the impact must have an influence on the decision process to develop in the area

6. PROJECT DESCRIPTION

This report does not deal with development projects outside of or even adjacent to the study area as is presented in Section 6 of this report. The same holds true for heritage sites, except in a generalised sense where it is used to create an overview of the heritage potential in the larger region.

6.1 Site location

The proposed Shangoni Gate as a new gate into Kruger National Park (KNP) is located on the western border of the northern section of the Park, east of Louis Trichardt. As such it is located in the former homeland of Gazankulu. From there the proposed new road roughly follows the Shigwedzi River eastwards along an internal service road (Fig. 2). For more information, please see the Technical Summary presented on p. iv above.

6.2 Development proposal

The proposed development involves the construction of the entrance gate and associated infrastructure including (see Fig. 3):

- An entrance gate facility into the KNP with a reception office, staff accommodation and facilities; and an Environmental Education Centre;
- A tourism hub including overnight chalets, a departure pick-up point for activities such as mountain biking, bird watching and cultural heritage tours;
- A rustic picnic site;
- A rustic tented camp and camping site;
- Construction of a new tar road of approximately 3.5 km from the proposed tourism hub to the KNP fence which runs through natural savannah bush;
- Construction of a new tar road of approximately 50,6 km from the Shangoni Gate to the H1-6 linking Shingwedzi and Mopani Rest Camps;
- Construction of a low-level bridge over the Shingwedzi River;
- Provision of bulk services including new sewer lines and pump stations, new water supply lines, additional reservoirs and water purification plants;
- Provision of solar hybrid energy systems.

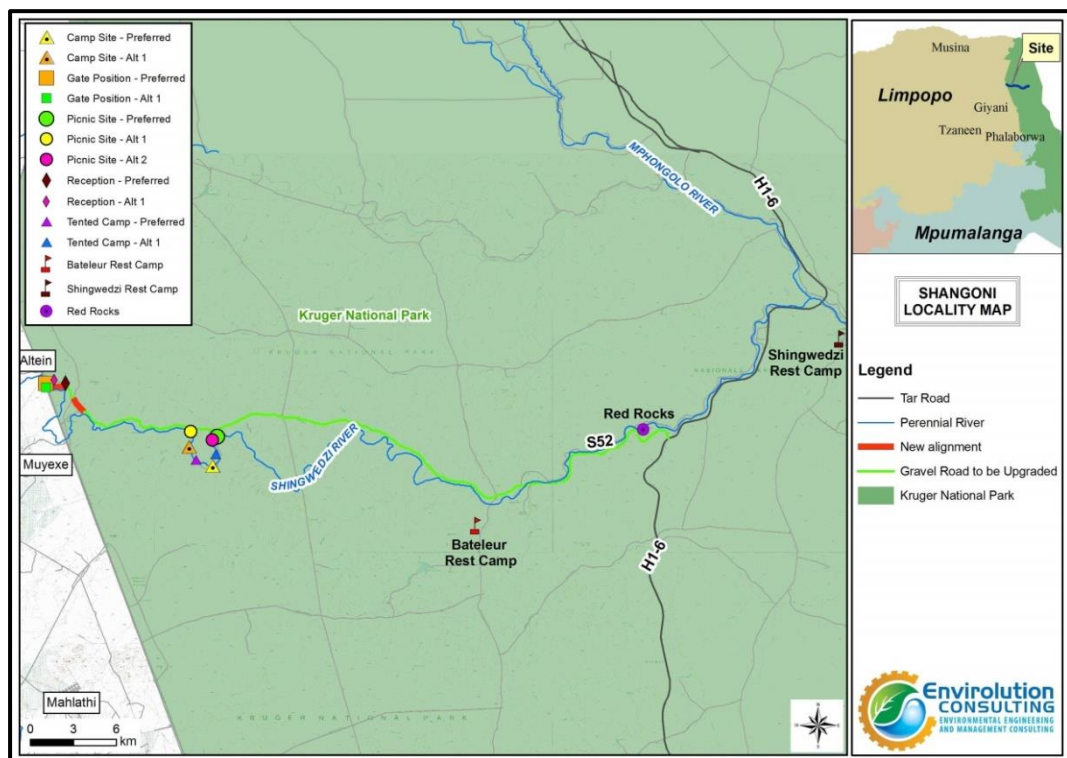


Fig. 2. The location of the study area.
(Map supplied by Envirolution Consulting)

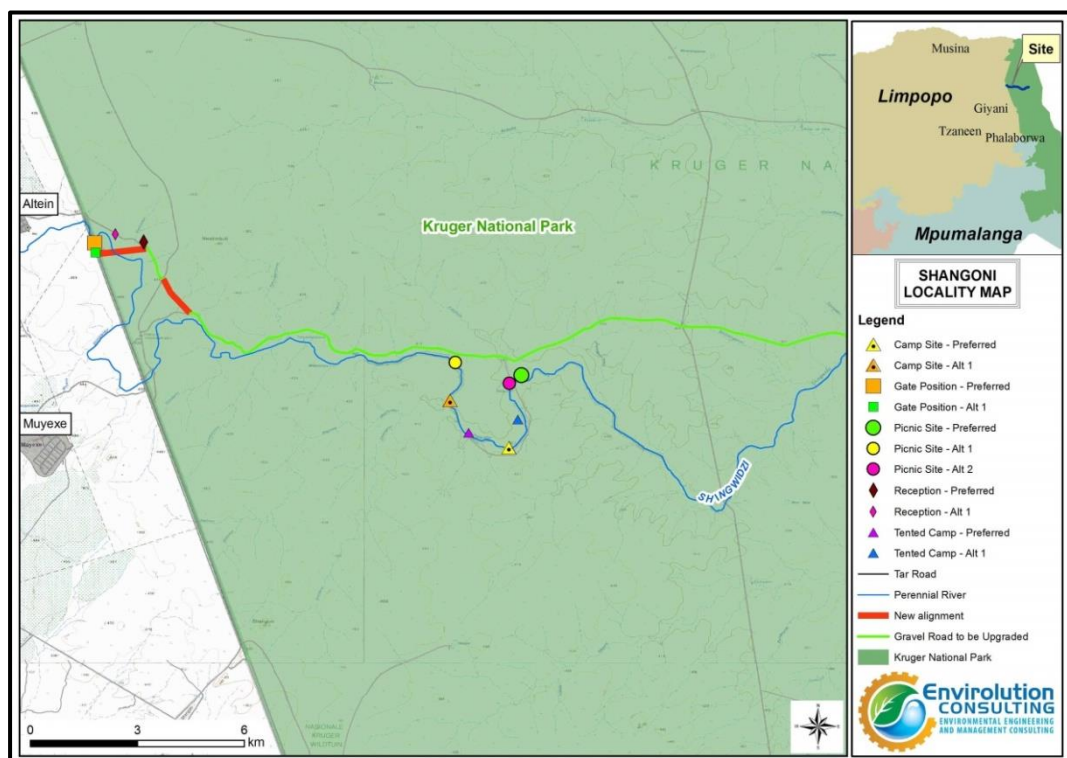


Fig. 3. Layout of the proposed development.
(Map supplied by Envirolution Consulting)

7. DESCRIPTION OF THE AFFECTED ENVIRONMENT

7.1 Site description

The geology of the region is made up of basalt, with a number of lava and arenite intrusions, which forms the higher ridges. The vegetation is classified as Mopane Bushveld and the topography is described as slightly undulating plains.

Since the beginning of the 20th Century this part of the world has been managed as a game reserve, with the result that very little development took place in the region.

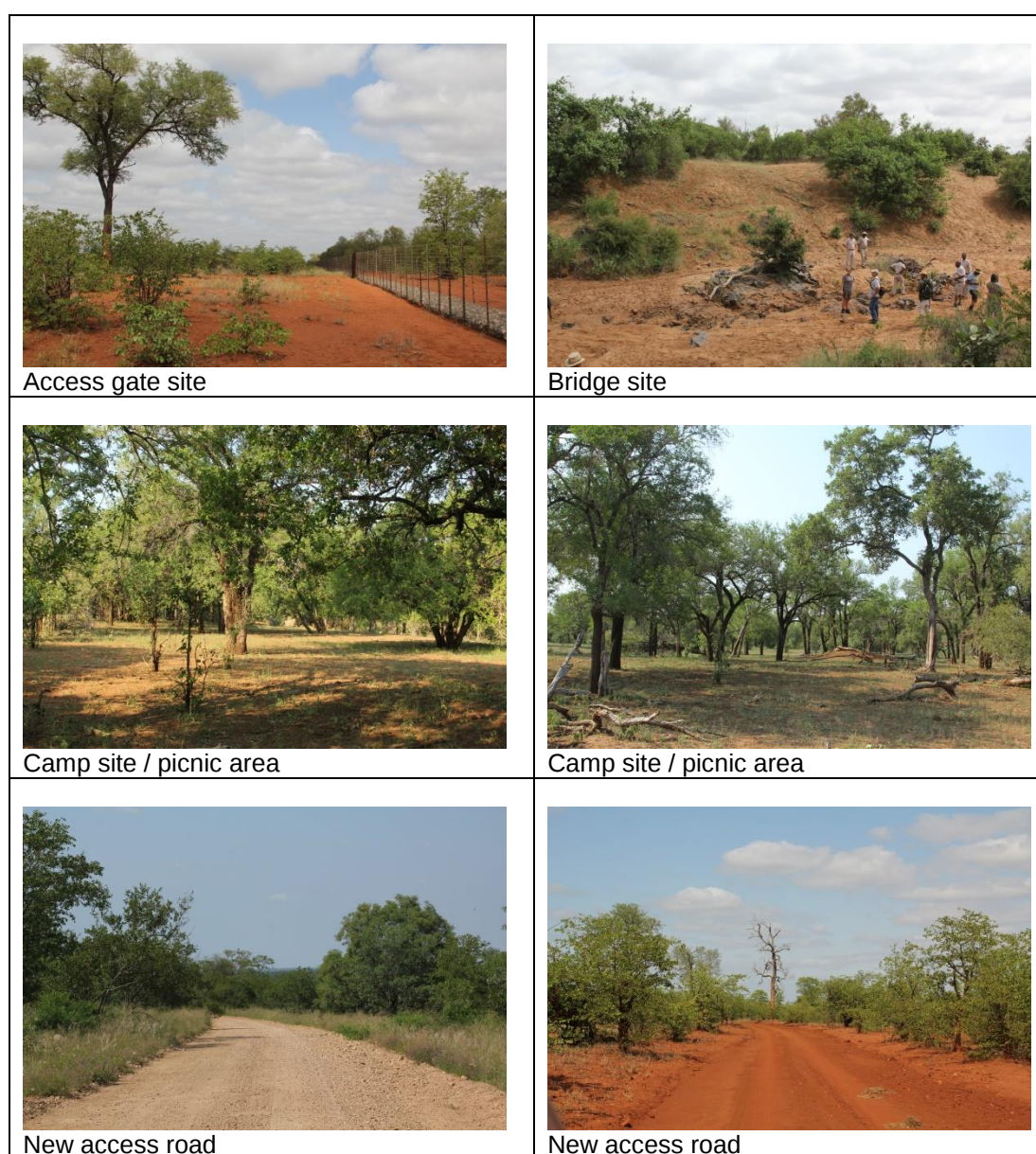


Fig. 4. Views over the study area.

7.2 Overview of the region

The aim of this section is to present an overview of the history of the larger region in order to eventually determine the significance of heritage sites identified in the study area, within the context of their historic, aesthetic, scientific and social value, rarity and representivity – see Section 3.2 and Appendix 1 for more information.

Existing knowledge base

An exhaustive review of the available published and unpublished reports on the cultural heritage resources potential of region was done. Some of the more important works are:

- Stevenson-Hamilton (1974) wrote a 'personal' review of the history, based on his work over many years during the early beginnings of the Kruger Park;
- Meyer (1987) did an extensive survey of the prehistory of the Kruger Park, during which he focussed on all the various river systems;
- Carruthers (1995) wrote on the complexity of the origin and history of the Kruger Park placed within the history of the country as a whole;
- Pienaar (2007) did an encyclopaedic review of the history of the Kruger Park.

The cultural landscape qualities of the study region essentially consist of a single component, being made up of a limited Stone Age and Iron Age occupation. The most probable reason for this low occupation of the region is the fact that the environment, being made up of Mopane Bushveld, was not conducive to settlement by early agro-pastoralists. Other contributing factors are the prevalence of malaria and nagana, the latter a sickness that prevents the keeping of cattle. This absence of human settlement in the area is clearly indicated by the work done by Meyer (1987) who during his survey recorded no archaeological sites on this section of the Shingwidzi River. Similarly, Pienaar (2007) also indicate that, with the exception of one site, Red Rock or *Ribye-ra-Khubyane*, there are no settlements or other heritage sites along this section of the river.

Stone Age occupation

Human occupation of the larger region started at least during the Early Stone Age and continued through to the Later Stone Age. In the case of the earlier periods, these sites are usually open sites, occurring near watercourses. During the Later Stone Age, people become more settled and occupied sites over long period of time. A number of rock shelters containing San rock art are known to exist far to the south of the region. These usually occur in shelters located on the granite outcrops.

Iron Age occupation

Iron Age people moved into southern Africa by c. AD 200, entering the area either by moving down the coastal plains, or by using a more central route. It seems more likely that the first option was what brought people into the study area. From the coast they followed the various rivers inland. One of the earliest dated sites is located near Tzaneen (Silver Leaves), with others for example at Matola in Mozambique (Morais 1984).

Many Iron Age communities on both sides of the later border did not live in isolation but were connected through various trails with Maputo and Inhambane for conducting trade in ivory, iron, gold, copper and other commodities. Along the Limpopo River, that served as 'highway' into the interior country, as number of important settlements developed and played an important role in the lucrative coastal trade in ivory and gold. One such site, located north of Pafuri, is Thula Mela. The closest route was between Maputo and the Pretoriuskop area via Matlala Poort in the Lebombo mountains south of Komatipoort. The Voortrekkers followed some of these trails in their quest to reach the Indian Ocean (Pienaar 2007).

Due to the large copper and iron resources at Phalaborwa, extensive mining of these two resources took place in pre-colonial times (also in the Kruger Park, e.g. at Masorini and Shikumbu east of Phalaborwa). Most of this material was traded to other communities living in the interior, as well as towards the coast, establishing extensive trade networks.

Colonial exploration

In 1725 Jan van de Capelle, in charge of the Dutch fortification and trading post *Fort Lijdzaamheid* at Delagoa Bay (Maputo), sent an expedition to explore an inland route to the fabled land of Monomotapa. It was a military expedition of 31 men, commanded by Francois de Kuiper. On 5 July 1725 Sergeant Johannes Monna and 6 men reconnoitred a route through the Komatipoort to reach Iron Age communities to the west. They were the first Europeans to enter the present-day Mpumalanga.

In the 1830s various Voortrekker groups led by Louis Tregard, Karel Tregard, Andries Potgieter and Hans van Rensburg penetrated Mozambique using a route through the central part of the what was later to become the Kruger Park.

The Selati railway line, from Komatipoort through a section of the Kruger National Park, had as aim to link the Selati, Lydenburg and Letaba gold fields with the port at Lourenco Marques. This was largely a private initiative that was started in the 1890s, put on hold during the Anglo Boer War, and resumed, for a short period of time during the first decade of the 20th century. Unfortunately, these gold fields played out soon after their establishment and the railway line was never completed.

The Witwatersrand Native Labour Association (WNLA) was founded by the Chamber of Mines after World War I for purposes of recruiting black labour for the mines in South Africa. At Ressano Garcia the WNLA established a compound where workers were assembled and checked before going to South Africa (Pienaar 2007).

Although people were travelling through the area or hunting, information on the area was very limited. From old maps it can be determined that this was until relative recently *terra incognita*. For example, while he was working as chief draughtsman in the Office of the Chief Surveyor-General, Fred Jeppe compiled a map of the Transvaal Republic (Fig. 5). According to Pienaar, Jeppe got his information on the region under discussion from the Swiss Missionary Henri Berthoud who was stationed at the mission station Valdezia. Berthoud travelled through the region on a number of occasions and the information he collected on the region and its topography he passed on the Jeppe for use in his maps (Pienaar 2007:276).

Berthoud visited the geological site of cultural significance, referred to as Red Rock or *Ribye-ra-Khubyane* in 1898 (Pienaar2007:276). Berthoud also produced his own map of the Soutpansberg region, as section of which is illustrated in Fig. 6.



Fig. 5. Section of Fred Jeppé's map of the Transvaal Republic, dating to 1899.

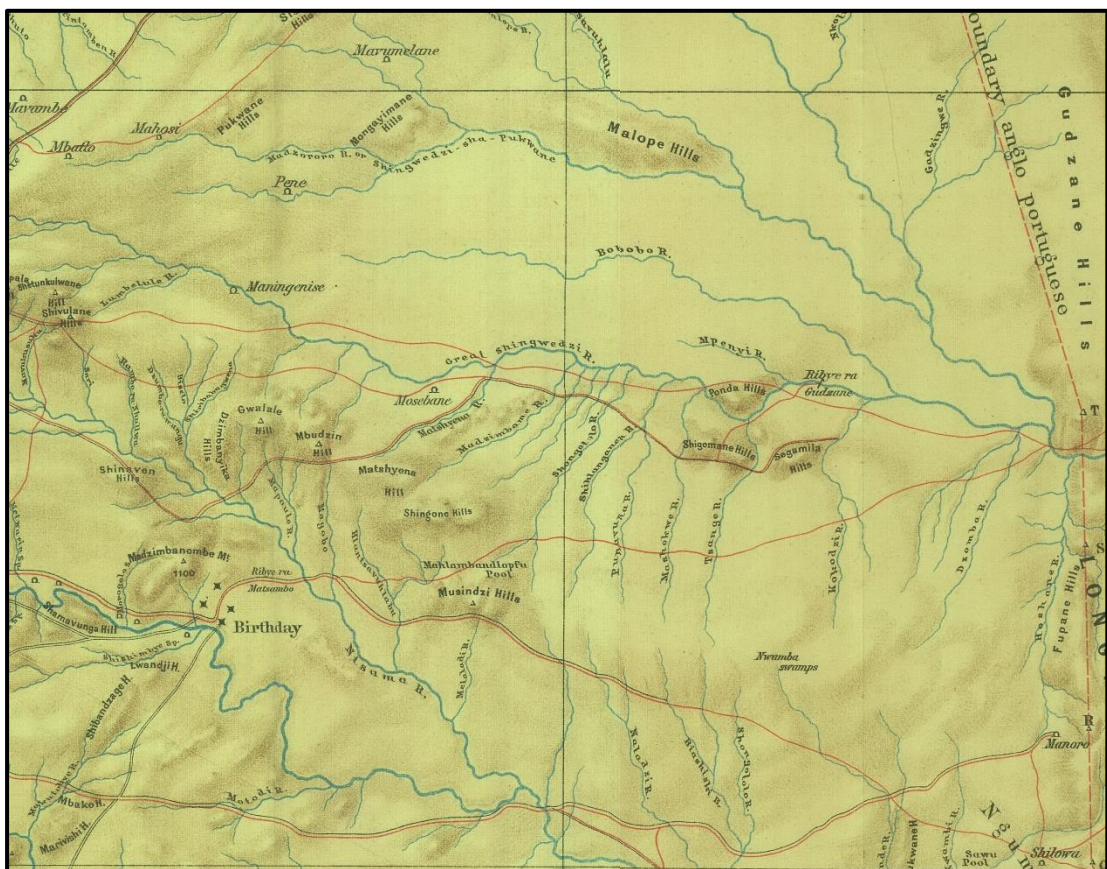


Fig. 6. Section of Missionary H. Berthoud's map dating to 1903.
(The red lines indicates the routes Berthoud followed)

History of the Kruger National Park

Due to large scale hunting all over, authorities soon realised that it has to be curtailed. Pres. Paul Kruger is credited with the Proclamation of an area where game is to be preserved on 26 March 1898. The area was located between the Crocodile and Sabie Rivers and in effect it became the basis what was later to become the Kruger National Park, but was referred to as the Sabie Nature Reserve. Major James Stevenson-Hamilton became the first caretaker of this area. Shortly afterwards the area was extended with the proclamation of an area north of the Groot Letaba River up to the Pafuri Nature Reserve as nature reserve. This became known as the Shingwedzi Game Reserve. Since 1910, all these areas were administered as a single unit. In order to consolidate the region, different areas were incorporated, to such an extent that the game reserve, with few alterations to some sections of the western borders, came into being and was known as the Transvaal Game Reserve (Berg 1998).

According to Carruthers (1995) the establishment and final naming of the park as the Kruger National Park should be seen as a result of rising Afrikaner nationalism.

7.3 Identified sites

The following sites, features and objects of cultural significance were identified in the study area – see Appendix 5 for a detailed discussion of each individual site.

In terms of Section 7 of the NHRA, all the sites currently known or which are expected to occur in the study area are evaluated to have a grading as identified in the table below.

Table 2. Summary of identified heritage resources in the study area.

IDENTIFIED HERITAGE RESOURCES			
NHRA category	Number	Coordinates	Impact rating
Formal protections (NHRA)			
National heritage site (Section 27)	None	-	-
Provincial heritage site (Section 27)	None	-	-
Provisional protection (Section 29)	None	-	-
Listed in heritage register (Section 30)	None	-	-
General protections (NHRA)			
Structures older than 60 years (Section 34)	None	-	-
Archaeological site or material (Section 35)	7.3.1.1	-	Low
Palaeontological site or material (Section 35)	None	-	-
Graves or burial grounds (Section 36)	None	-	-
Public monuments or memorials (Section 37)	None	-	-
Other			
Places to which oral traditions are attached or which are associated with living heritage	7.3.2.1	-23.17383, 31.30658	Low

7.3.1 Stone Age

- A very limited number of stone tools dating the Early and Later Stone Age were identified as surface material in isolated spots – see Appendix 6.

7.3.2

- A single natural site, revered by local Black people, occurs a short distance off the access road – see Appendix 6.

7.3.3 Historic period

- No sites, features or objects dating to the historic period were identified in the study area.

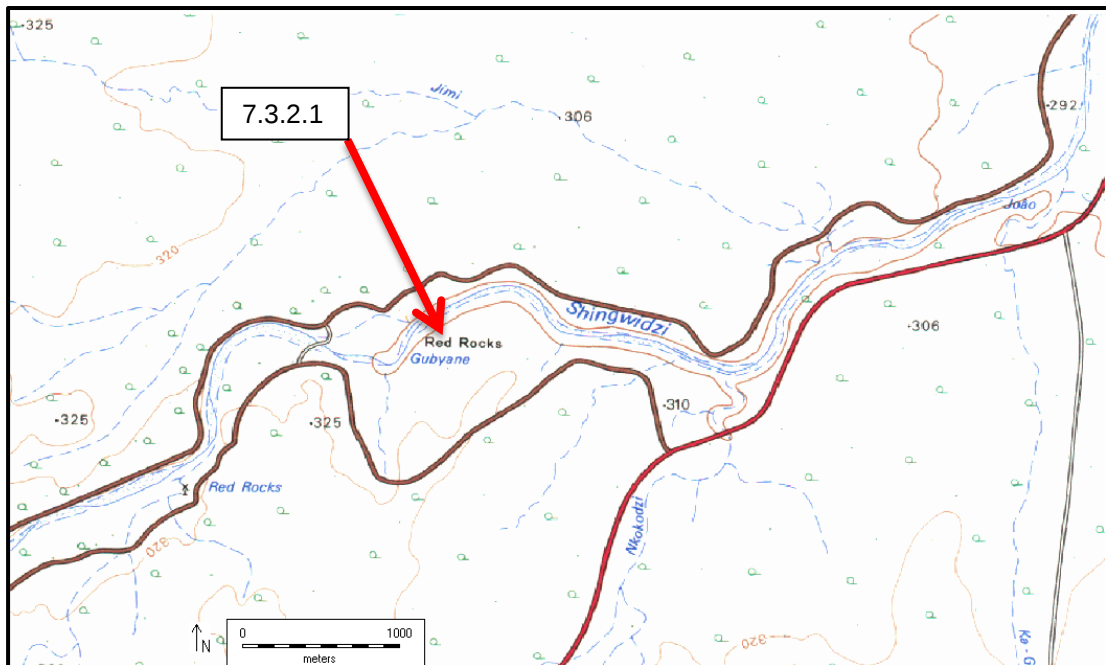


Fig. 7. Location of the identified sites.
(Map 2331AB: Chief Surveyor-General)

7.4 Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, are based on the present understanding of the development:

- (7.3.1.1) A very limited number of stone tools dating the Early and Later Stone Age were identified as surface material in isolated areas.
 - As all the material was identified on the surface in areas where sheet erosion is taking place, the material is viewed to have very little significance, as it is not in its original context any more.
 - No further action is required
- (7.3.2.1) A natural site revered by local Black people, occurs a short distance off the access road.
 - This area is located some distance off from the road that is to be upgraded and would therefore not be impacted on by the proposed development.
 - No further action is required

8. MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be

avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

8.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities.

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

8.2 Control

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

9. RECOMMENDATIONS

The cultural landscape qualities of the study region essentially consist of a single component, being made up of a limited Stone Age and Iron Age occupation. The most probable reason for this low occupation of the region is the fact that the environment, being made up of Mopane Bushveld, was not conducive to settlement by early agro-pastoralists. Other contributing factors are the prevalence of malaria and nagana, the latter a sickness that prevents the keeping of cattle. This absence of human settlement in the area is clearly indicated by the work done by Meyer (1987) who during his survey recorded no archaeological sites on this

section of the Shingwidzi River. Similarly, Pienaar (2007) also indicate that, with the exception of one site, Red Rock or *Ribye-ra-Khubyane*, there are no settlements or other heritage sites along this section of the river.

Identified sites

- A very limited number of stone tools dating the Early and Later Stone Age were identified as surface material in isolated spots.
- A single natural site, revered by local Black people, occurs a short distance off the access road.

Impact assessment:

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

- As all the Stone Age material was identified on the surface in areas where sheet erosion is taking place, the material is viewed to have very little significance, as it is not in its original context any more.
 - No further action is required
- A natural site revered by local Black people is located some distance off from the road that is to be upgraded and would therefore not be impacted on by the proposed development.
 - No further action is required

Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue, on condition of acceptance of the proposed mitigation measures.

Conditions for inclusion in the environmental authorisation:

- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

10. REFERENCES

10.1 Data bases

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10.2 Literature

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Barnard, C. (Red.) 1975. *Die Transvaalse Laeveld: kamee van 'n kontrei*. Kaapstad: Tafelberg Uitgewers.

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Pienaar, U de V. (red.) 2007. *Neem uit die verlede*. Pretoria: Protea Boekhuis.

Pistorius, J.C.C. 1989. *Die Metaalbewerke van Phalaborwa*. Ongepubliseerde D.Phil thesis. Pretoria: Universiteit van Pretoria.

Stevenson-Hamilton, J. 1974. *South African Eden*. London: Collins.

10.3 Maps and aerial photographs

1: 50 000 Topocadastral maps
Google Earth

APPENDIX 1: INDEMNITY AND TERMS OF USE OF THIS REPORT

The findings, results, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and the author reserve the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.

Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. The author of this report will not be held liable for such oversights or for costs incurred as a result of such oversights.

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APPENDIX 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of a heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value			
Is it important in the community, or pattern of history			
Does it have strong or special association with the life or work of a person, group or organisation of importance in history			
Does it have significance relating to the history of slavery			
2. Aesthetic value			
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group			
3. Scientific value			
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage			
Is it important in demonstrating a high degree of creative or technical achievement at a particular period			
4. Social value			
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons			
5. Rarity			
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage			
6. Representivity			
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects			
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class			
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.			
7. Sphere of Significance		High	Medium
International			
National			
Provincial			
Regional			
Local			
Specific community			
8. Significance rating of feature			
1.	Low		
2.	Medium		
3.	High		

APPENDIX 3. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(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 offices or museum, which must immediately notify such heritage resources authority.

(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;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

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

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) 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
- (c) 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 the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education, research and tourism, including-

- (a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
- (b) the training and provision of guides;
- (c) the mounting of exhibitions;
- (d) the erection of memorials; and
- (e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.

APPENDIX 4. RELOCATION OF GRAVES

If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.

If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.
- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave.

Information needed for the SAHRA permit application

- The permit application needs to be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- If graves have not been identified and there are no headstones to indicate the grave, these are then unknown graves and should be handled as if they are older than 60 years. This information also needs to be given to SAHRA.
- A letter from the landowner giving permission to the developer to exhume and relocate the graves.
- A letter from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.

APPENDIX 5. SPECIALIST COMPETENCYJohan (Johnny) van Schalkwyk

J A van Schalkwyk, D Litt et Phil, heritage consultant, has been working in the field of heritage management for more than 30 years. Based at the National Museum of Cultural History, Pretoria, he has actively done research in the fields of anthropology, archaeology, museology, tourism and impact assessment. This work was done in Limpopo Province, Gauteng, Mpumalanga, North West Province, Eastern Cape, Northern Cape, Botswana, Zimbabwe, Malawi, Lesotho and Swaziland. Based on this work, he has curated various exhibitions at different museums and has published more than 60 papers, many in scientifically accredited journals. During this period he has done more than 2000 impact assessments (archaeological, anthropological, historical and social) for various government departments and developers. Projects include environmental management frameworks, road-, pipeline-, and power line developments, dams, mining, water purification works, historical landscapes, refuse dumps and urban developments.

APPENDIX 6 INVENTORY OF IDENTIFIED CULTURAL HERITAGE SITES

Location	No. 7.3.1.1		
Description			
A single Early Stone Age core tool, made from quartzite, was identified in the region of the preferred tented camp site.			
Small area where LSA material is eroding out was identified adjacent to the road near the junction with the tar road. It consists mostly of flakes, with a few formal tools, all of quartzite. A grooved piece of sandstone was also identified on the site. Stones such as this are usually used to smooth arrow shafts, or work down ostrich eggshell beads.			

Significance of site/feature	Low on a regional level – Grade III
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Impact assessment
As all the material was identified on the surface in areas where sheet erosion is taking place, the material is viewed to have very little significance, as it is not in its original context any more.

Significance of impact					
Extent	Duration	Magnitude	Probability	Significance	Weight
2	5	6	1	13	Low

Mitigation
None

Requirements
None

References



Stone core dating to the Early Stone Age



LSA tools

Location	7.3.2.1	-23.17383, 31.30658
Description		
A geological site, revered by local Black people, occurs a short distance off the access road. It is known as <i>Ribye-ra-Khubyane</i> , with reference to a god named Khubyane. It is also referred to as Red Rock.		

Significance of site/feature	High on a regional level – Grade III
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Impact assessment
This area is located some distance off from the road that is to be upgraded and would therefore not be impacted on by the proposed development.

Significance of impact					
Extent	Duration	Magnitude	Probability	Significance	Weight
2	5	6	1	13	Low

Mitigation
None required

Requirements
None required

References
Pienaar 2012

