

**GLOSSARY OF TERMS AND ABBREVIATIONS**

**STONE AGE**

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

**IRON AGE**

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

**HISTORIC PERIOD**

Since the arrival of the white settlers - c. AD 1840 in this part of the country

ASAPA	Association of Southern African Professional Archaeologists
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

# ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED EXPANSION OF THE BEITBRIDGE WASTE WATER TREATMENT PLANT, LIMPOPO PROVINCE

## 1. INTRODUCTION

An independent archaeological consultant was appointed by **Cultmatrix** to conduct a survey to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area where it is planned to develop a housing estate.

This AIA 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) and was done in accordance with Section 38 of the National Heritage Resources Act, No. 25 of 1999 and is intended for submission to the South African Heritage Resources Agency (SAHRA).

## 2. TERMS OF REFERENCE

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- 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.

## 3. DEFINITIONS AND ASSUMPTIONS

The following aspects have a direct bearing on the survey and the resulting report:

- *Cultural resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

- The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their 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.
- Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not unduly be disclosed to members of the public.

## 4. STUDY APPROACH AND METHODOLOGY

### 4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figure 1.

### 4.2 Methodology

#### 4.2.1 Preliminary investigation

##### 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 the list of references below.

##### 4.2.1.2 Data bases

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

##### 4.2.1.3 Other sources

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

#### 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 members of **Cultmatrix** by means of maps and during a site visit. A number of transects were walked across the site.

#### 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)*<sup>1</sup> and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

#### 4.3 Limitations

None at present.

## 5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 5.1 Site location

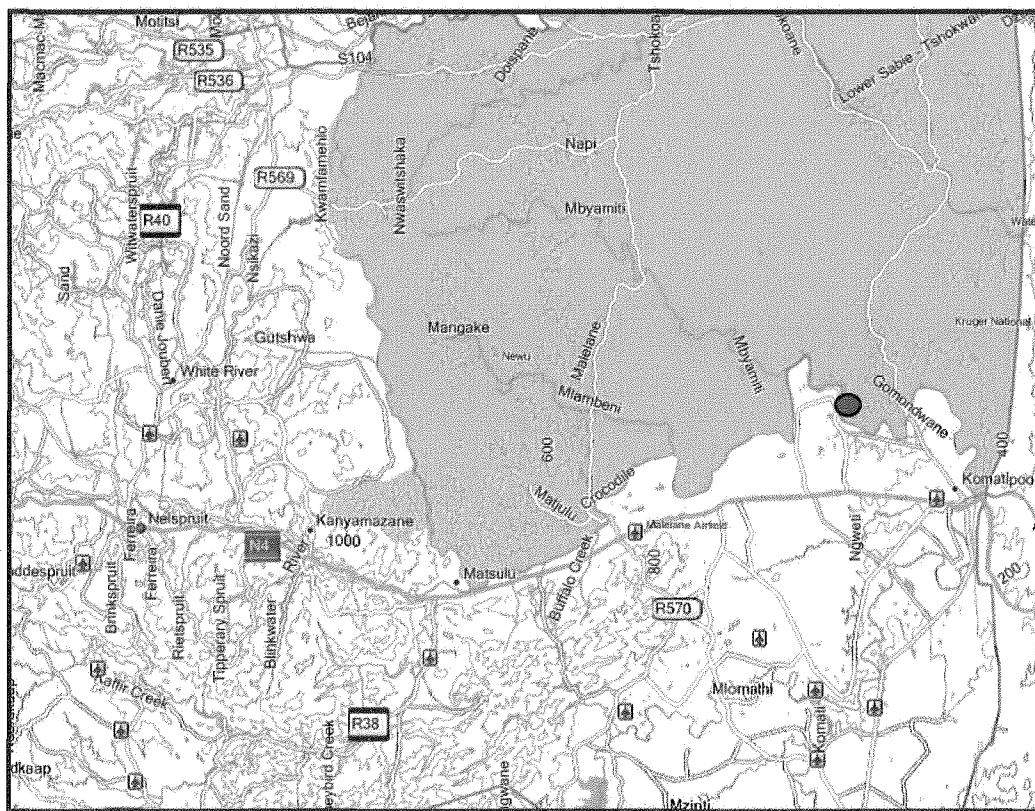


Fig. 1. Location of the study area (red dot) in regional context.

<sup>1</sup> According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

The site is located south of the Krokodile River, some distance to the east of the town of Malelane. The Kruger National Park is located on the opposite side of the River. For more detail, please see the Technical Summary presented above.

## 5.2 Site description

The geology of the area is quite complex, being made up of gneiss, shale and lava. The original vegetation is classified as Mixed Lowveld Bushveld, of which nothing remains in the study area as it was all replaced by sugar cane farming.

## 5.3 Regional overview

The Krokodil River valley has a rich legacy of cultural resources. Occupation of this area took place since Early Stone Age times, and was mostly open sites located close to water-courses. During the Later Stone Age, people become more settled and occupied sites over long periods of time. A number of rock shelters containing San rock art are known to exist in the region. These usually occur in shelters located on the granite outcrops, e.g. in the Mthethemousha Nature Reserve and K'Shani Nature Reserve.

### Iron Age occupation

Iron Age people moved into southern Africa by ca. 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, with others for example at Matola in Mozambique (Morais 1984). Some sites dating to this and to a slightly later period, were identified at Plaston (Evers 1977) and, still closer to the study area, on the farms Vergenoeg and The Curlews east of Nelspruit (Van Schalkwyk & Teichert 2007). One site, dating to AD 980, is found south of the study area in the region of Mbuzini (Van Schalkwyk 2001).

### 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.

In the 1830s various Voortrekker groups led by Louis Tregard, Karel Tregard, Andries Potgieter and Hans van Rensburg penetrated Mozambique but they did not use the Komatipoort route.

Most of the railways in the *Zuid-Afrikaansche Republiek* (Transvaal Boer Republic) were constructed and operated by the *Nederlandsche Zuid-Afrikaansche Spoorweg-Maatschappij* (Netherlands South African Railway Company, or NZASM), a shareholder company with German and Dutch capital. Founded in Amsterdam in 1887, the NZASM's main objective was the establishment of a railway line between Pretoria and Komatipoort, known together with the Komatipoort-Maputo railway of the Portuguese colony of Mozambique as the Eastern Line.

## 5.4 Identified sites

### 5.4.1 Stone Age

No sites, features or objects of cultural significance dating to the Stone Age were identified in the study area.

#### *5.4.2 Iron Age*

No sites, features or objects of cultural significance dating to the Iron Age were identified in the study area.

#### *5.4.3 Historic period*

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

## **6. SITE SIGNIFICANCE AND ASSESSMENT**

### **6.1 Statement of significance**

According to the NHR Act, Section 2(vi), the **significance** of heritage sites and artefacts is determined by its 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.

Sites regarded as having low significance are viewed as being recorded in full after identification and would require no further mitigation. Sites with a medium to high significance would require mitigation. Mitigation, in most cases the excavation of a site, is in essence destructive and therefore the impact can be viewed as high and as permanent.

- No sites, features or objects of cultural historic significance were identified in the study area.

### **6.2 Impact assessment**

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

- As no sites, features or objects of cultural historic significance were identified in the study area, there would be no impact due to the proposed development.

## **7. RECOMMENDED 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 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.

### 7.1 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 National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

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 work.
- 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 museum, preferably one at which an archaeologist is available, 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. RECOMMENDATIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop a housing estate.

No sites, features or objects of cultural significance were identified in the study area. Therefore, based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

- If construction takes place and archaeological sites are exposed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

## 9. REFERENCES

### 9.1 Data bases

Chief Surveyor General

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

Heritage Atlas Database, Pretoria.

National Archives of South Africa

### 9.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

Evers, T.M. 1977. Plaston Early Iron Age site, White River district, Eastern Transvaal, South Africa. *South African Archaeological Bulletin* 32:170-178.

Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik.

Morais, J. 1984. Mozambican archaeology: past and present. *The African Archaeological Review* 2: 113-128

Pienaar, U de V. (Red.) 1990. *Neem uit die verlede*. Nasionale Parkeraad: Pretoria.

Van Schalkwyk, J.A. 2001. Prehistory of the area. In Van Schalkwyk, J.A. (ed.) *A remembered corner of the country: heritage documentation and development in the eMbizini valley, Mpumalanga Province*. *Research by the National Cultural History Museum* 10:11-18.

Van Schalkwyk, J.A. 2002. *Archaeological survey of the Secunda-Mozambique gas pipeline, Mpumalanga*. Unpublished report. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. & Teichert, F. 2007. *Heritage impact scoping report for the K'shani Nature Reserve, Nelspruit area, Mpumalanga*. Unpublished report 2007KH020. Pretoria: National Cultural History Museum.

### 9.3 Maps

1: 50 000 Topocadastral maps – 2531BD



## APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON 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

<b>1. Historic value</b>				
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				
<b>2. Aesthetic value</b>				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
<b>3. Scientific value</b>				
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				
<b>4. Social value</b>				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
<b>5. Rarity</b>				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
<b>6. Representivity</b>				
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.				
<b>7. Sphere of Significance</b>		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
<b>8. Significance rating of feature</b>				
1.	Low			
2.	Medium			
3.	High			

**Significance of impact:**

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

**Certainty of prediction:**

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

**Recommended management action:**

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

**Legal requirements:**

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

## APPENDIX 2. 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.

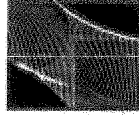
(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage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



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ALREADY ON SAHRIS



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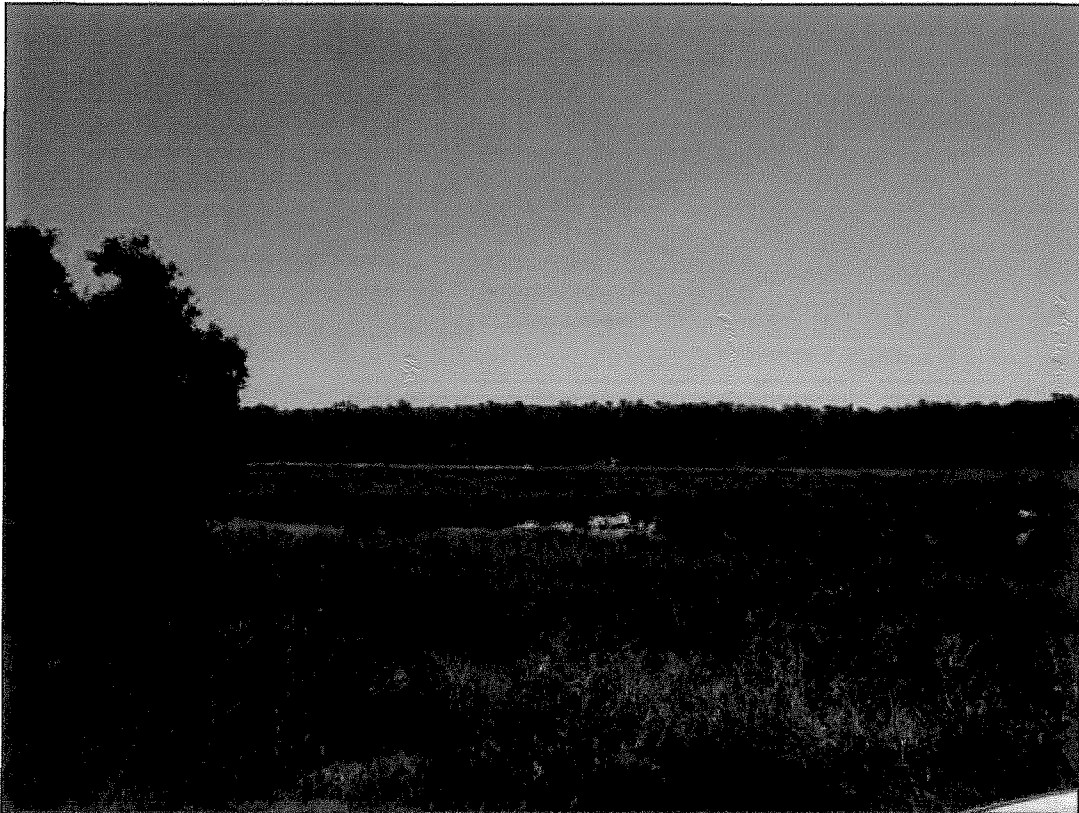
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PROJECT 2008/76

**DRAFT HERITAGE IMPACT ASSESSMENT REPORT:  
PROPOSED RESORT ESTABLISHMENT ON PORTION  
19 OF THE FARM TENBOSCH 162 JU, EAST OF  
KOMATIPOORT, MPUMALANGA PROVINCE**



**PREPARED FOR:**

**Stephanie Webber  
Seedcracker Environmental Consulting**

**DATE OF SUBMISSION: 4 June 2009**

## TABLE OF CONTENTS

<b>1. REPORT CONTEXT .....</b>	<b>3</b>
1.1 GENERAL NOTES .....	3
1.1.1 Report structure.....	3
1.1.2 Background and terms of reference .....	3
1.2 PURPOSE OF THE REPORT.....	4
1.2.1 Purpose of this report.....	4
1.2.2 Purpose of final report .....	4
1.3 HISTORY OF THE REPORT.....	4
1.4 LEGAL CONTEXT OF THE REPORT.....	5
1.4.1 Summary.....	5
1.4.2 Section 38 of the NHRA.....	5
1.4.3 Section 35 of the NHRA.....	6
1.4.4 Section 36 of the NHRA.....	6
1.4.5 Section 34 of the NHRA.....	6
1.4.6 Section 37 of the NHRA.....	6
1.4.7 NEMA.....	6
1.5 PLANNING CONTEXT OF THE REPORT.....	6
1.6 DEVELOPMENT CRITERIA IN TERMS OF SECTION 38 OF THE NHRA.....	6
1.7 PROPERTY DETAILS .....	7
1.8 PROPERTY OWNER.....	7
1.9 IMPLEMENTING AGENT/DEVELOPER .....	7
1.10 ENVIRONMENTAL SPECIALIST .....	7
1.11 HERITAGE IMPACT ASSESSMENT PRACTITIONERS .....	7
<b>2. DEVELOPMENT CONTEXT.....</b>	<b>9</b>
2.1 DEVELOPMENT SITE/AREA LOCATION .....	9
FIGURE 1: General location of the study area .....	9
2.2 DESCRIPTION OF DISTINGUISHING FEATURES .....	9
2.2.1 Environmental features .....	9
2.2.2 Heritage features.....	10
2.2.3 Surrounding environment.....	10
2.3 DEVELOPMENT DESCRIPTION .....	10
FIGURE 2: Portion of 2531 BD Komatipoort (1984) indicating the location of the development site on land used for cultivation (sugar cane).....	11
FIGURE 3: Location of the proposed lodge/resort along the Crocodile River bank (green strip).....	12
FIGURE 4: General view of development site showing ploughed fields (sugar cane) and the riverine vegetation along the Crocodile River bank (left).....	13
FIGURE 5: General view from the development site across the Crocodile River towards the west.....	13
FIGURE 6: General view from the development site across the Crocodile River towards the east with a herd of buffalo from Kruger .....	14
FIGURE 7: Another view of the development site indicating the generally disturbed nature of the surface area .....	14
<b>3. HERITAGE IMPACT CONTEXT .....</b>	<b>15</b>
3.1 CULTURAL LANDSCAPE EVIDENCE .....	15
3.2 HERITAGE CONTEXT CLASSIFICATION .....	16
3.3 DEVELOPMENT CONTEXT TYPE .....	16
3.4 EXPECTED IMPACT SIGNIFICANCE .....	17
<b>4. HERITAGE IMPACT ASSESSMENT.....</b>	<b>18</b>
4.1 APPROACH .....	18
4.1.1 Definitions and assumptions .....	18
4.1.2 Limiting/Restricting factors.....	18
4.1.3 Field work .....	19
4.1.4 Desktop study.....	19
4.2 GENERAL ISSUES OF SITE AND CONTEXT .....	19
4.2.1 Context.....	19
4.2.2 Property features and characteristics .....	19
4.2.3 Heritage resources on the property.....	20
4.2.4 Property history and associations.....	20

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4.3 SUMMARISED IDENTIFICATION AND CULTURAL SIGNIFICANCE ASSESSMENT OF AFFECTED HERITAGE RESOURCES ..... 21

4.4 SUMMARISED IMPACT ASSESSMENT AFFECTING HERITAGE RESOURCES ..... 21

4.5 SUMMARISED RECOMMENDED IMPACT MANAGEMENT INTERVENTIONS ..... 22

4.6 SOCIAL AND ECONOMIC BENEFITS ..... 23

4.7 PUBLIC PARTICIPATION ..... 23

4.8 IDENTIFICATION OF RISK SOURCES ..... 23

4.9 KEY MITIGATION AND ENHANCEMENT MEASURES BEFORE CONSTRUCTION ..... 23

4.10 KEY MITIGATION AND ENHANCEMENT MEASURES DURING CONSTRUCTION ..... 24

4.11 CONSIDERATION OF ALTERNATIVES ..... 24

4.12 KEY UNCERTAINTIES AND RISKS THAT MAY INFLUENCE ACCURACY AND CONFIDENCE OF IMPACT ASSESSMENT ..... 24

4.13 FINAL RECOMMENDATIONS ..... 24

**APPENDIX 1: SOCIO-CULTURAL HISTORY OF DEVELOPMENT AREA ..... 25**

*FIGURE 8: Survey diagram (1927) indicating Portion 19. Portion 19 was only formally surveyed in 1953. ... 27*

**APPENDIX 2: INFORMATION SOURCES USED IN THIS REPORT ..... 28**

**APPENDIX 3: GLOSSARY OF TERMS ..... 29**

**APPENDIX 4: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON INDIVIDUAL HERITAGE FEATURES..... 32**



# DRAFT HERITAGE IMPACT ASSESSMENT REPORT: PROPOSED RESORT ESTABLISHMENT ON PORTION 19 OF THE FARM TENBOSCH 162 JU, EAST OF KOMATIPOORT, MPUMALANGA PROVINCE

Prepared for: Stephanie Webber, Seedcracker Environmental Consulting  
Prepared by: RC de Jong, Cultmatrix cc  
Date of submission of report: 4 June 2009

## 1. REPORT CONTEXT

### 1.1 General notes

#### 1.1.1 Report structure

The structure of this report is based on:

- SOUTH AFRICAN HERITAGE RESOURCES AGENCY, Heritage Impact Assessment: Notification of intent to develop (form)
  - DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING, PROVINCIAL GOVERNMENT OF THE WESTERN CAPE, 2005, Guideline for involving heritage specialists in EIA processes (document)
  - DEPARTMENT OF ENVIRONMENT AFFAIRS AND TOURISM, Integrated Environmental Management Guidelines
  - SOUTH AFRICAN HERITAGE RESOURCES AGENCY, 2006, *Minimum standards: Archaeological and palaeontological components of impact assessment reports* (unpublished).
  - WORLD BANK, *Environmental Assessment Sourcebook Update No 8, September 1994: Cultural Heritage in Environmental Assessment.*
  - Best-practice HIA reports submitted by Cultmatrix and other heritage consultants
2. This report is informed by the *National Heritage Resources Act (25/1999)* (NHRA) and is consistent with the various ICOMOS charters for places of cultural significance.
  3. Recommendations contained in this application do not exempt the applicant from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA.
  4. Rights and responsibilities that arise from this report are those of the applicant and not that of Cultmatrix cc. Cultmatrix cc assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.
  5. Cultmatrix assumes no responsibility whatsoever for any loss or damages that may be suffered as a direct or indirect result of information contained in this application. Any claim that may however arise is limited to the amount paid to Cultmatrix for services rendered to compile this report.

#### 1.1.2 Background and terms of reference

Mr John Hume – as applicant for the development - proposes the establishment of a Holiday Resort on Portion 19 of the Farm Tenbosch 162 JU, Komatipoort, Mpumalanga. Mr John Hume has appointed Seedcracker Environmental Consulting CC, an independent Environmental Assessment Practitioner, to conduct the Environmental Impact Assessment Process, including the Public Participation process, for the proposed resort development.

The property falls within the jurisdiction of the Ehlanzeni District Municipality, and the Nkomazi Local Municipality. The property is located between the Marloth Park eastern entrance, and the Crocodile Bridge, KNP / Komatipoort road. The property is located west of Komatipoort and borders on the Crocodile River, with the Kruger National Park on the opposite bank.

Currently, the site is utilized for Agricultural purposes, namely sugar cane farming. The Department of Agriculture has allowed the applicant to develop up to 85 meters south of the Kruger National Park Fence

(Snyman Fence). This area shall be developed for resort establishment, whilst the remainder of the farm shall be utilized for game viewing purposes. The developable area of the property will be 12 hectares only. The units shall overlook the Crocodile River, into the Kruger National Park. The development concept is similar to that of *Ngwenya Lodge*, situated east of the proposed development site.

Seedcracker requested Cultmatrix to investigate any impacts on heritage resources associated with the resort development and to prepare a HIA report for purposes of authorising the proposed development.

**This report is the main HIA report and should be read together with a separate Archaeological Impact Assessment (AIA) report, prepared by Dr Johnny van Schalkwyk.**

**1.2 Purpose of the report**

**1.2.1 Purpose of this report**

This report is prepared for and submitted to Seedcracker as part of the EIA.

**1.2.2 Purpose of final report**

After Seedcracker and their client have agreed with the contents of this report, it should be submitted to SAHRA for approval and authorisation, preferably including the results of public participation.

Report category	Aim	SAHRA office submitted to	Requested SAHRA response
Screening	The aim of the screening investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives of this investigation are to screen potential heritage issues through a site inspection, to develop a broad understanding of heritage policy-related context, to review any existing data on the history and heritage significance of the site, to check if the site has any formal heritage status, to discuss the proposed development with heritage contacts and to scan the development proposals. The result of this investigation is a brief statement indicating potential heritage impacts/issues and the need for further investigation.	-	-
		-	-
		-	-
Scoping (basic assessment)	The aim of the scoping investigation is to analyse heritage issues and how to manage them within the context of the proposed development. The objectives are to assess heritage significance (involving site inspections and basic desktop and archival research); to identify the need for further detailed inputs by heritage specialists, to consult with local heritage groups and experts, to review the general compatibility of the development proposals with heritage policy and to assess the acceptability of the proposed development from a heritage perspective. The result of this investigation is a heritage scoping report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed development.	-	-
		-	-
		-	-
Full HIA	The aim of the full HIA investigation is to analyse and recommend heritage management mitigation measures and monitoring programmes. The objectives are to analyse heritage issues, to research the chronology of the site and its role in the broader context, to undertake a comprehensive assessment of heritage significance, to analyse the nature and scale of the proposed development, to consult with local heritage groups and experts as part of the broader EIA stakeholder engagement process, to establish the compatibility of the proposed development with heritage and other statutory frameworks and to assess alternatives in order to promote heritage conservation issues.	Nelspruit	Approval of development
		Cape Town	Approval of development
		-	-

**1.3 History of the report**

This report is the first draft HIA report.

## 1.4 Legal context of the report

The legal “triggers” for this HIA are grounded in two different acts.

### 1.4.1 Summary

ACT	COMPONENT	IMPLICATION	RELEVANCE	COMPLIANCE
NHRA	S 34	Impacts on buildings and structures older than 60 years	Not present	-
	S 35	Impacts on archaeological and palaeontological heritage resources	Possible hidden (buried) features - unlikely	Monitor during construction work as recommended in final HIA report
	S 36	Impacts on graves	None present	-
	S 37	Impacts on public monuments	None present	-
	S 38	Developments requiring an HIA	Development is listed activity	Full HIA
NEMA	EIA Regulations	Activities requiring an EIA	Development is subject to an EIA	HIA is part of EIA

### 1.4.2 Section 38 of the NHRA

This study constitutes a heritage impact assessment investigation linked to the environmental impact scoping and impact assessment required for the development. The proposed development is a listed activity in terms of Section 38 (1) of the NHRA. Section 38 (2)(a) of the National Heritage Resources Act (Act 25 of 1999) requires the submission of a heritage impact assessment report for authorisation purposes to the responsible heritage resources agency, SAHRA.

Heritage conservation and management in South Africa (excluding KwaZulu Natal on a provincial level) is governed by the *National Heritage Resources Act* (Act 25 of 1999) (NHRA) and falls under the overall jurisdiction of the *South African Heritage Resources Agency* (SAHRA) and its provincial offices and counterparts.

Section 38 of the NHRA requires a Heritage Impact Assessment (HIA), to be conducted by an independent heritage management consultant, for the following development categories:

- Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
  - Exceeding 5000 sq m
  - Involving three or more existing erven or subdivisions
  - Involving three or more erven or divisions that have been consolidated within past five years
  - Rezoning of site exceeding 10 000 sq m
  - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

In addition, the new EIA Regulations promulgated in terms of NEMA determine that any environmental reports will include cultural (heritage) issues.

The end purpose of this report is to alert Seedcracker, their client and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources. Such measures could include the recording of any heritage buildings and structures older than 60 years prior to demolition, in terms of Section 34 of the NHRA and also other Sections of this act dealing with archaeological sites, buildings and graves. The implementation of these interventions constitutes separate, follow-up projects with separate permits.

In terms of the ECA, Section 38(1) of the NHRA is also applicable – thus any person undertaking any development in the categories of Section 38 (1) a-e, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the

location, nature and extent of the proposed development. In the case of an EIA, comments from the responsible heritage resources agency based on a heritage scoping report are required.

The NHRA Section 2 (xvi) states that a “heritage resource” means any place or object of cultural significance, and in Section 2 (vi) that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

This report forms part of an EIA for the site.

Based on the report, SAHRA will be able to authorise the proposed development with possible conditions. These conditions have been included in the Recommendations in this report.

Apart from a heritage report assisting a client to make informed development decisions, it also serves to provide the relevant heritage resources authority with the necessary data to perform their statutory duties under the NHRA. After evaluating the heritage scoping report, the relevant heritage resources authority will decide on the status of the resource, whether the development may proceed as proposed or whether mitigation is acceptable, and whether the heritage resources require formal protection, i.e. as a Grade I, II or III resource, with relevant parties having to comply with all aspects pertaining to such Grading.

**1.4.3 Section 35 of the NHRA**

Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered. In the case of such chance finds, the heritage practitioner will assist in investigating the extent and significance of the finds and consult with an archaeologist about further action. This may entail removal of material after documenting the find site or mapping of larger sections before destruction.

**1.4.4 Section 36 of the NHRA**

Section 36 (3) of the NHRA stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or 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. This section may apply in case of the discovery of chance burials, which is unlikely.

**1.4.5 Section 34 of the NHRA**

Section 34 of the NHRA stipulates that no person may alter, damage, destroy, relocate etc any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. This section does not apply since no buildings and structures older than 60 years are affected.

**1.4.6 Section 37 of the NHRA**

This section deals with public monuments and memorials but it does not apply in this case.

**1.4.7 NEMA**

The Regulations (21 April 2006) in terms of Chapter 5 of the *National Environmental Management Act*, or NEMA (Act 107 of 1998) provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard.

**1.5 Planning context of the report**

The project supports the intent of the Nkomazi Municipality’s 2007-2008 IDP to promote and stimulate tourism development.

**1.6 Development criteria in terms of Section 38 of the NHRA**

<b>1.6</b>	<b>Development criteria in terms of Section 38(1)</b>	<b>Yes/No details</b>
1.6.1	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
1.6.2	Construction of bridge or similar structure exceeding 50m in length	No

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1.6	Development criteria in terms of Section 38(1)	Yes/No details
1.6.3	Development exceeding 5000 sq m	Yes
1.6.4	Development involving three or more existing erven or subdivisions	No
1.6.5	Development involving three or more erven or divisions that have been consolidated within past five years	No
1.6.6	Rezoning of site exceeding 10 000 sq m	No
1.6.7	Any other development category, public open space, squares, parks, recreation grounds	No

**1.7 Property details**

1.7	Property details	
1.7.1	Name and location of affected properties	Farm Tenbosch
1.7.2	Erf or farm numbers	Portion 19 of Tenbosch 162 JU
1.7.3	Magisterial district	Komatipoort
1.7.4	Closest towns	Komatipoort
1.7.5	Local authority	Nkomazi
1.7.5	Current use	Agriculture
1.7.5	Current zoning	Agriculture
1.7.5	Predominant land use of surrounding properties	Wildlife conservation and agriculture
1.7.9	Total extent of property	226,9652 ha (of which 12 ha will be developed)

**1.8 Property owner**

1.8	Property owner	
1.8.1	Name and contact address	Mr John Hume
1.8.2	Telephone number	
1.8.3	Fax	
1.8.4	E-mail	

**1.9 Implementing Agent/Developer**

1.9	Implementing Agent/Developer	
1.9.1	Name and contact address of representative	Mr John Hume
1.9.2	Telephone number	
1.9.3	Fax	
1.9.4	E-mail	

**1.10 Environmental specialist**

1.10	Environmental Specialist	
1.10.1	Name and contact address	Stephanie Webber, Seedcracker Environmental Consulting
1.10.2	Telephone number	(082) 626-4117
1.10.3	Fax	(086) 518-4885
1.10.4	E-mail	stephweb@mweb.co.za

**1.11 Heritage impact assessment practitioners**

1.11	Specialist (1)	
1.11.1	Name and contact address	Dr RC de Jong (Principal Member: Cultmatrix cc), PO Box 12013, Queenswood 0121, Pretoria
1.11.2	Qualifications and field of expertise	PhD (Cultural History) UP (1990), Post-Graduate Museology Diploma UP (1979), generalist heritage management specialist with experience in museums and heritage since 1983
1.11.3	Relevant experience in study area	HIA reports for Lebombo border post upgrade (2008)

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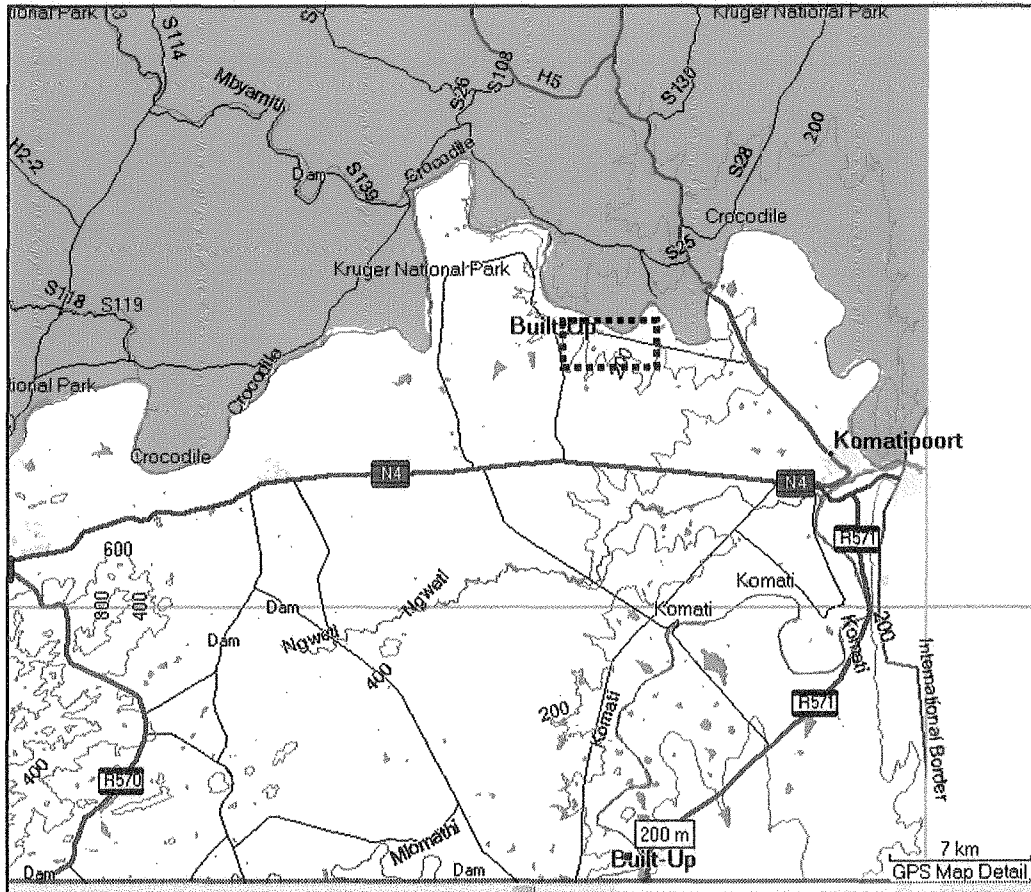
1.11.4	Telephone number	(082) 577-4741
1.11.5	Fax number	(086) 612-7383
1.11.6	E-mail	cultmat@iafrica.com

<b>Specialist 2</b>		
1.8.1	Name and contact address	Dr JA van Schalkwyk, PO Box 26389, Monument Park 0105
1.8.2	Qualifications and field of expertise	DLitt et Phil (UNISA), Post-Graduate Museology Diploma UP, general heritage management specialist with experience in museums and heritage, anthropologist and archaeologist
1.8.3	Relevant experience in study area	Numerous archaeological studies in the area, HIA for Lebombo border post upgrade
1.8.4	Telephone number	(012) 347-7270
1.8.5	Fax number	
1.8.6	E-mail	jvschalkwyk@mweb.co.za

## 2. DEVELOPMENT CONTEXT

### 2.1 Development site/area location

This HIA deals with the proposed development of a lodge/resort to be located on an area of ca 12 ha along the bank of the Crocodile River.



**FIGURE 1: General location of the study area**

### 2.2 Description of distinguishing features

#### 2.2.1 Environmental features

COMPONENT	DESCRIPTION
Acocks veld type	Lowveld
Conservation	Within 3 km buffer zone from Kruger National Park
Geological and mining	-
Geology	Arenite and gabbro
Hydrology	Crocodile River
Land cover	Commercial cultivated land (sugar cane) and woodland
Land use	Sugar cane and vacant
Vegetation	Sweet Lowveld bushveld
Terrain morphology	Slightly undulating plains
Wetlands	Riverine



**2.2.2 Heritage features**

S 3(2) NHRA heritage resource	Identification of heritage resources	
	Development site	Components
Buildings, structures, places and equipment of cultural significance	Tenbosch	Modern farmstead
Areas to which oral traditions are attached or which are associated with intangible heritage	Tenbosch	None
Historical settlements and townscapes	Tenbosch	None
Landscapes and natural features of cultural significance	Tenbosch	Crocodile River scenic landscape
Geological sites of scientific or cultural importance	Tenbosch	None
Archaeological and palaeontological sites	Tenbosch	None observed
Graves and burial grounds	Tenbosch	None
Areas of significance related to labour history	Tenbosch	None
Movable objects	Tenbosch	None

**2.2.3 Surrounding environment**

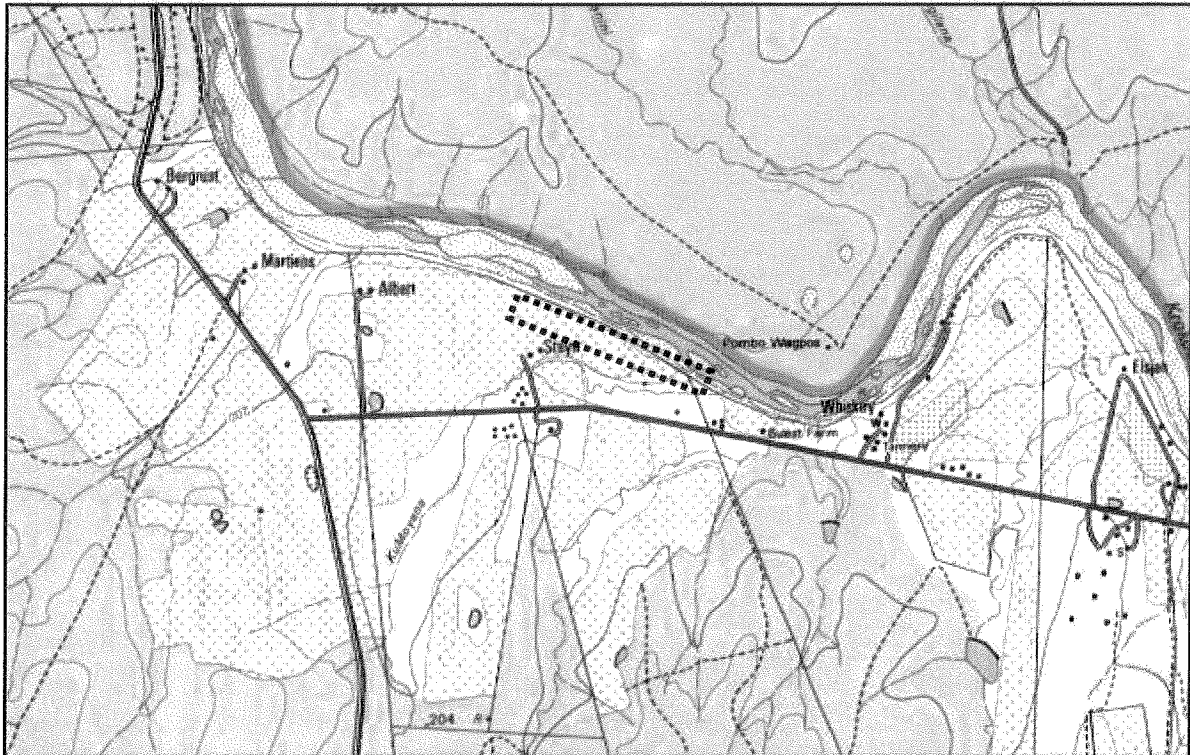
S 3(2) NHRA heritage resource	Elements
Buildings, structures, places and equipment of cultural significance	Farmsteads, homesteads, kraals, dams, furrows, mining sites, roads, bridges, causeways, cultivated fields, nature conservation
Areas to which oral traditions are attached or which are associated with intangible heritage	Rivers and wetlands, dams, furrows
Historical settlements and townscapes	None
Landscapes and natural features of cultural significance	Riverine areas
Geological sites of scientific or cultural importance	None
Archaeological and palaeontological sites	Stone and Iron Age, rock art (on Kruger side of river)
Graves and burial grounds	Graves
Areas of significance related to labour history	Ruins of homesteads
Movable objects	Farming and mining equipment, archaeological artefacts

**2.3 Development description**

2.3	Development description	
2.3.1	Nature of proposed development	The proposed development will consist of 100 chalets and a lodge that will be sold as time-share, share block or full title units to be located in 4 to 5 clusters overlooking the Crocodile River.
2.3.2	Possible impacts on heritage value of sites and contents	Neutral (no impact on physical resources); low negative (visual impact)
2.3.3	Structures older than 60 years affected by proposed development	No
2.3.4	Rezoning or change of land use	No details
2.3.5	Construction work	Yes



2.3	Development description	
2.3.6	Total floor area of proposed development	Not available
2.3.7	Extent of land coverage of development	12 ha
2.3.8	Earth moving and excavation	Earthmoving and excavation work
2.3.9	Number of storeys	Immaterial
2.3.10	Maximum height above ground level	-
2.3.11	Monetary value development	-
2.3.12	Time frames	Urgent

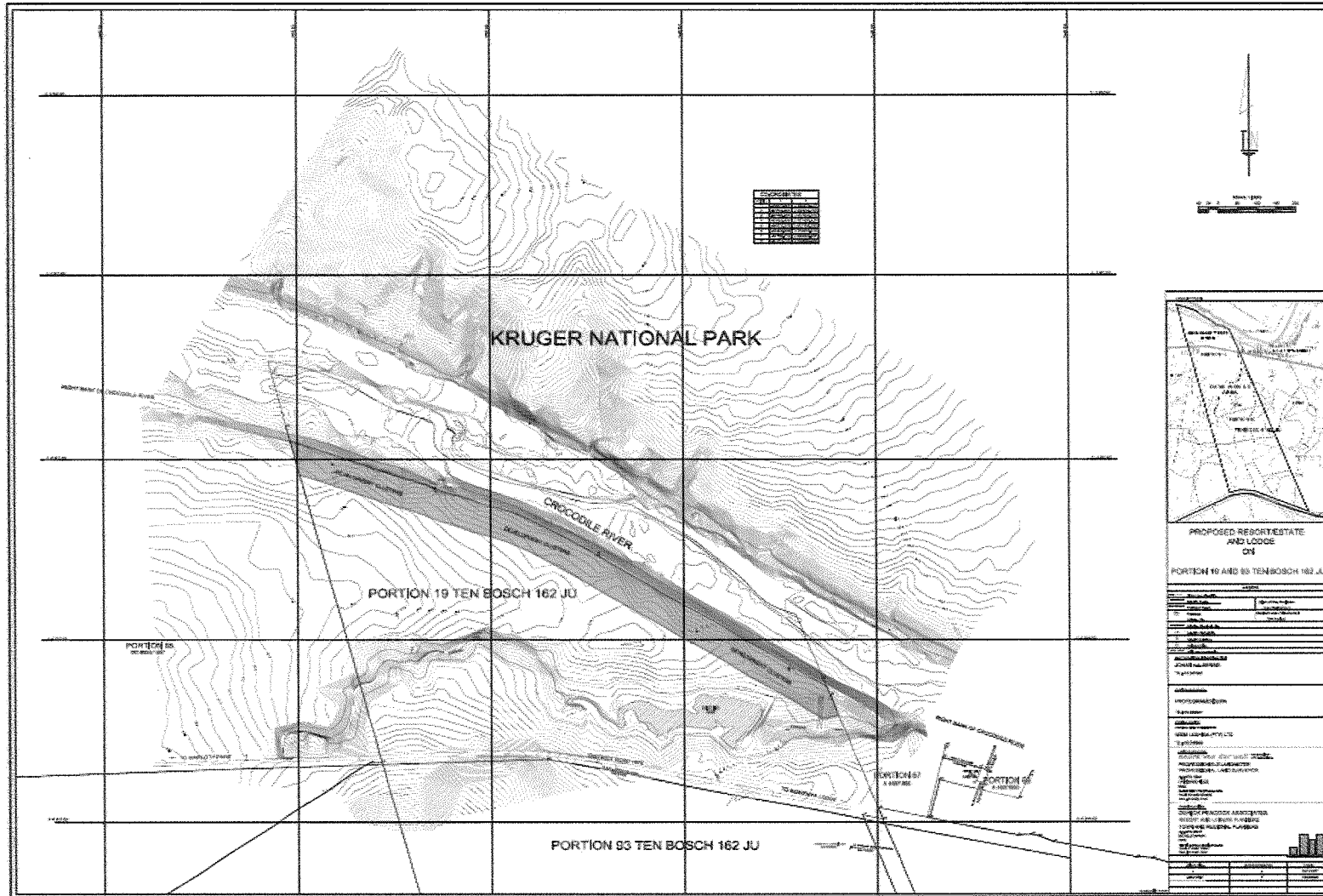


**FIGURE 2: Portion of 2531 BD Komatipoort (1984) indicating the location of the development site on land used for cultivation (sugar cane)**

Currently, the site is utilized for Agricultural purposes, namely; sugar cane farming. The Department of Agriculture has allowed the applicant to develop up to 85 meters south of the Kruger National Park Fence (Snyman Fence). This area shall be developed for resort establishment, whilst the remainder of the farm shall be utilized for game viewing purposes. The developable area of the property will be 12 hectares only. The units shall overlook the Crocodile River, into the Kruger National Park. The development concept is similar to that of *Ngwenya Lodge*.

The proposed development will consist of 100 chalets and a lodge that will be sold as time-share, share block or full title units to be located in 4 to 5 clusters overlooking the Crocodile River.

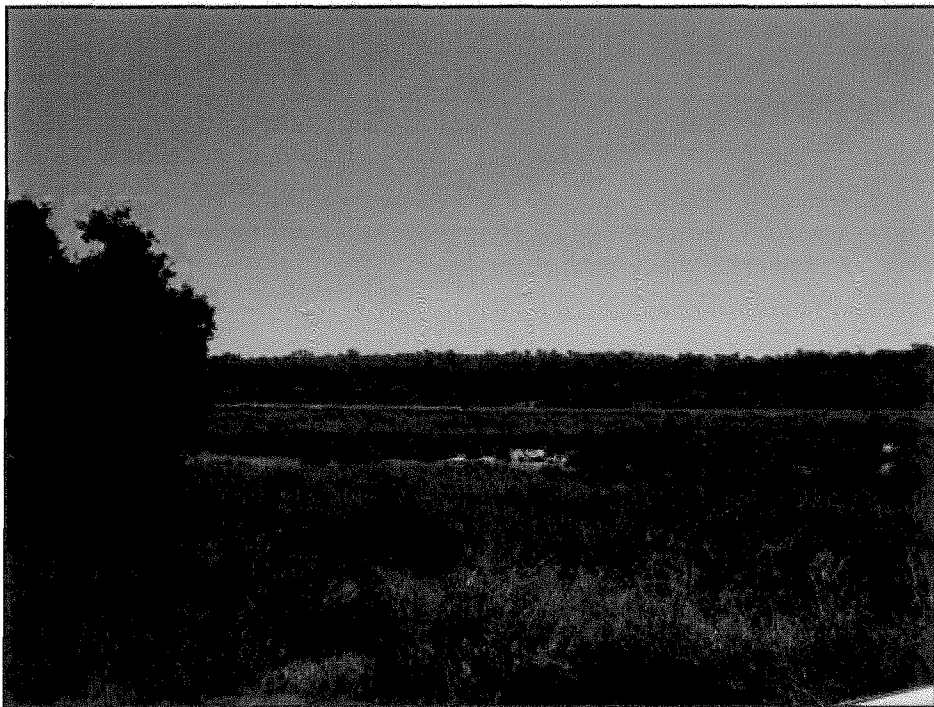
The area will be landscaped with indigenous vegetation in an effort to restore its original natural status. Strict architectural and lighting guidelines enforced in the development will ensure that the development will blend in with the natural surroundings.



**FIGURE 3: Location of the proposed lodge/resort along the Crocodile River bank (green strip)**



**FIGURE 4: General view of development site showing ploughed fields (sugar cane) and the riverine vegetation along the Crocodile River bank (left)**



**FIGURE 5: General view from the development site across the Crocodile River towards the west**



**FIGURE 6:** General view from the development site across the Crocodile River towards the east with a herd of buffalo from Kruger



**FIGURE 7:** Another view of the development site indicating the generally disturbed nature of the surface area



### 3. HERITAGE IMPACT CONTEXT

#### 3.1 Cultural landscape evidence

HERITAGE LANDSCAPE CONTEXT	ELEMENTS	EVIDENCE
A. PALAEOONTOLOGICAL LANDSCAPE CONTEXT	Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations.	None
B. ARCHAEOLOGICAL LANDSCAPE CONTEXT	Archaeological remains dating to the following periods: <ul style="list-style-type: none"> <li>• Early Stone Age</li> <li>• Middle Stone Age</li> <li>• Late Stone Age</li> <li>• Early Iron Age</li> <li>• Late Iron Age</li> <li>• Historical</li> </ul>	None
C. HISTORICAL BUILT URBAN LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• Historical townscapes/streetscapes</li> <li>• Historical structures; i.e. older than 60 years</li> <li>• Formal public spaces</li> <li>• Formally declared urban conservation areas</li> <li>• Places associated with social identity/displacement</li> </ul>	None
D. HISTORICAL FARMLAND CONTEXT	<p><b>These possess distinctive patterns of settlement and historical features such as:</b></p> <ul style="list-style-type: none"> <li>• <b>Historical farm werfs</b></li> <li>• <b>Historical farm workers villages/settlements</b></li> <li>• <b>Irrigation furrows</b></li> <li>• <b>Tree alignments and groupings</b></li> <li>• <b>Historical routes and pathways</b></li> <li>• <b>Distinctive types of planting</b></li> <li>• <b>Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting.</b></li> </ul>	Yes
E. HISTORICAL RURAL TOWN CONTEXT	<ul style="list-style-type: none"> <li>• Historical mission settlements</li> <li>• Historical townscapes</li> </ul>	None
F. PRISTINE/NATURAL LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• Historical patterns of access to a natural amenity</li> <li>• Formally proclaimed nature reserves</li> <li>• Evidence of pre-colonial occupation</li> <li>• Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages</li> <li>• Historical structures/settlements older than 60 years</li> <li>• Pre-colonial or historical burial sites</li> <li>• Geological sites of cultural significance.</li> </ul>	None
G. RELIC LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• Past farming settlements</li> <li>• Past industrial sites</li> <li>• Abandoned and working mines</li> <li>• Places of isolation related to attitudes to medical treatment</li> <li>• Battle sites</li> <li>• Sites of displacement,</li> </ul>	Remains of farm buildings, infrastructure, planted vegetation, crops
H. BURIAL GROUND & GRAVE SITE CONTEXT	<ul style="list-style-type: none"> <li>• Pre-colonial burials (marked or unmarked, known or unknown)</li> <li>• Historical graves (marked or unmarked, known or unknown)</li> <li>• Human remains (older than 100 years)</li> <li>• Associated burial goods (older than 100 years)</li> <li>• Burial architecture (older than 60 years)</li> </ul>	None
I. ASSOCIATED LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes</li> </ul>	None

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HERITAGE LANDSCAPE CONTEXT	ELEMENTS	EVIDENCE
	<ul style="list-style-type: none"> <li>• Sites associated with displacement &amp; contestation</li> <li>• Sites of political conflict/struggle</li> <li>• Sites associated with an historic event/person</li> <li>• Sites associated with public memory</li> </ul>	
J. HISTORICAL FARM WERF CONTEXT	<ul style="list-style-type: none"> <li>• Setting of werf and its context</li> <li>• Composition of structures</li> <li>• Historical/architectural value of individual structures</li> <li>• Tree alignments</li> <li>• Views to and from</li> <li>• Axial relationships</li> <li>• System of enclosure, e.g. werf walls</li> <li>• Systems of water reticulation and irrigation, e.g. furrows</li> <li>• Sites associated with slavery and farm labour</li> <li>• Colonial period archaeology</li> </ul>	None
K. HISTORICAL INSTITUTIONAL LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• Historical prisons</li> <li>• Hospital sites</li> <li>• Historical school/reformatory sites</li> <li>• Military bases</li> </ul>	None
L. SCENIC/VISUAL	<ul style="list-style-type: none"> <li>• Scenic routes</li> </ul>	None
K. AMENITY LANDSCAPE CONTEXT	<ul style="list-style-type: none"> <li>• View sheds</li> <li>• View points</li> <li>• Views to and from</li> <li>• Gateway conditions</li> <li>• Distinctive representative landscape conditions</li> <li>• Scenic corridors</li> </ul>	

3.2 Heritage context classification

CATEGORY	DESCRIPTION	EVIDENCE
A	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources	No
B	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	No
C	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	No
D	Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage	Yes

3.3 Development context type

CATEGORY	ONE OR MORE ELEMENTS	EVIDENCE
A: Minimal intensity development	<ul style="list-style-type: none"> <li>• No rezoning involved; within existing use rights</li> <li>• No subdivision involved</li> <li>• Upgrading of existing infrastructure within existing envelopes</li> <li>• Minor internal changes to existing structures</li> <li>• New building footprints limited to less than 1000m<sup>2</sup></li> </ul>	No
B: Low-intensity development	<ul style="list-style-type: none"> <li>• Spot rezoning with no change to overall zoning of a site</li> <li>• Linear development less than 100m</li> <li>• Building footprints between 1000m<sup>2</sup>-2000m<sup>2</sup></li> <li>• Minor changes to external envelop of existing structures (less than 25%)</li> <li>• Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%).</li> </ul>	No

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CATEGORY	ONE OR MORE ELEMENTS	EVIDENCE
C: Moderate intensity development	<ul style="list-style-type: none"> <li>Rezoning of a site between 5000m2-10 000m2</li> <li>Linear development between 100m and 300m</li> <li>Building footprints between 2000m2 and 5000m2</li> <li>Substantial changes to external envelop of existing structures (more than 50%)</li> <li>Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%)</li> </ul>	No
D: High intensity development	<ul style="list-style-type: none"> <li>Rezoning of a site in excess of 10 000m2</li> <li>Linear development in excess of 300m</li> <li>Any development changing the character of a site exceeding 5000m2 or involving the subdivision of a site into three or more erven</li> <li>Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%)</li> </ul>	Yes

3.4 Expected impact significance

HERITAGE CONTEXT	TYPE OF DEVELOPMENT			
	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY D
A: High heritage value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
B: Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
C: Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
D: Low heritage value	Little or no heritage impact expected	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected

## 4. HERITAGE IMPACT ASSESSMENT

### 4.1 Approach

#### 4.1.1 Definitions and assumptions

The following aspects have a direct bearing on the investigation and the resulting report:

- *Cultural (heritage) resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.
- The *cultural significance* of sites and artefacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their 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.
- The *value* is related to concepts such as *worth, merit, attraction* or *appeal*, concepts that are associated with the (current) usefulness and condition of a place or an object. Hence, in the development area, there are instances where elements of the place have a high level of significance but a lower level of value.
- It must be kept in mind that significance and value are not mutually exclusive, and that the evaluation of any feature is based on a combination or balance between the two.
- Isolated occurrences: findings of artefacts or other remains located apart from archaeological sites. Although these are noted and samples are collected, it is not used in impact assessment and therefore do not feature in the report.
- Traditional cultural use: resources which are culturally important to people.
- All archaeological remains, artificial features and structures older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the National Heritage Resources Act (NHRA) (Act No. 25 of 1999). No archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority. Full cognisance is taken of this Act in making recommendations in this report.
- The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3, and the Australian ICOMOS Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- It should be kept in mind that archaeological deposits usually occur below ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted, and it would be required that the heritage consultants would be required to be notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

#### 4.1.2 Limiting/Restricting factors

The investigation has been influenced by the following factors related to the overall HIA:

- Unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence)
- Difficulty in establishing intangible heritage values
- Unpredictable results from public participation
- Ploughed fields may have obscured heritage remains



**4.1.3 Field work**

The approach used in the study entailed foot and vehicle investigations of the study area. This was done in March 2009. The farmer accompanied the heritage specialists.

**4.1.4 Desktop study**

Published literature was sourced, 1:50 000 maps were studied, an assessment of archival information was done and aerial images were studied.

**4.2 General issues of site and context**

<b>4.2.1 Context</b>		
	<i>(check box of all relevant categories)</i>	<i>Brief description/explanation</i>
	Urban environmental context	<ul style="list-style-type: none"> <li>• Roads</li> <li>• Tracks</li> <li>• Sugar cane</li> <li>• Modern farmstead</li> <li>• Game viewing areas</li> </ul>
x	Rural environmental context	
	Natural environmental context	
<b>Formal protection (NHRA)</b>		
	Is the property part of a protected area (S. 28)?	No
	Is the property part of a heritage area (S. 31)?	No
<b>Other</b>		
X	Is the property near to or visible from any protected heritage sites?	Yes: Kruger National Park
x	Is the property part of a conservation area or special area in terms of the Zoning Scheme?	Yes: 3 km buffer zone around Kruger
	Does the site form part of a historical settlement or townscape?	No
x	Does the site form part of a rural cultural landscape?	Yes: Working farm
x	Does the site form part of a natural landscape of cultural significance?	Yes: Crocodile River banks
	Is the site within or adjacent to a scenic route?	No
x	Is the property within or adjacent to any other area which has special environmental or heritage protection?	Yes: Crocodile River and Kruger National Park
x	Does the general context or any adjoining properties have cultural significance?	Yes: Rock art (in Kruger), rivers and wetlands, historic railway line in the south

<b>4.2.2 Property features and characteristics</b>		
	<i>(check box if YES)</i>	<i>Brief description</i>
x	Have there been any previous development impacts on the property	Yes: Sugar cane
x	Are there any significant landscape features on the property?	Crocodile River
	Are there any sites or features of geological significance on the property?	No
	Does the property have any rocky outcrops on it?	No
x	Does the property have any fresh water sources (springs, streams, rivers) on or	Yes: Crocodile River

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	alongside it?	
	Does the property have any sea frontage?	No
	Does the property form part of a coastal dune system?	No
	Are there any marine shell heaps or scatters on the property?	No
	Is the property or part thereof on land reclaimed from the sea?	No

<b>4.2.3 Heritage resources on the property</b>		
	<i>(check box if present on the property)</i>	<i>Name / List / Brief description</i>
<b>Formal protections (NHRA)</b>		
	National heritage site (S. 27)	No
	Provincial heritage site (S. 27)	No
	Provisional protection (s.29)	No
	Place listed in heritage register (S. 30)	No
<b>General protections (NHRA)</b>		
	structures older than 60 years (S. 34)	No
x	archaeological site or material (S. 35)	Possible
	palaeontological site or material (S. 35)	No
	graves or burial grounds (S. 36)	No
	public monuments or memorials (S. 37)	No
<b>Other</b>		
	Any heritage resource identified in a heritage survey (state author and date of survey and survey grading/s)	No
	Any other heritage resources (describe)	No

<b>4.2.4 Property history and associations</b>		
	<i>(check box if YES)</i>	<i>Brief description/explanation</i>
x	Provide a brief history of the property (e.g. when granted, previous owners and uses).	See Annexure 1
	Is the property associated with any important persons or groups?	No
	Is the property associated with any important events, activities or public memory?	No
	Does the property have any direct association with the history of slavery?	No
	Is the property associated with or used for living heritage?	No
	Are there any oral traditions attached to the property?	No

**4.3 Summarised identification and cultural significance assessment of affected heritage resources**

- See Appendix 3 (Glossary of Terms) for significance assessment criteria

S 3(2) NHRA heritage resource category	ELEMENTS	INDICATORS OF HERITAGE SIGNIFICANCE										CUMULATIVE SIGNIFICANCE RATING (TOTAL 30) 1-9 = Low = 1 10-19 = Medium = 2 20-30 = High = 3	
		HISTORICAL	RARE	SCIENTIFIC	TYPICAL	AESTHETIC	TECHNOLOGICAL	PERSON COMMUNITY	LANDMARK	MATERIAL CONDITION	SUSTAINABILITY		
Buildings, structures, places and equipment of cultural significance	None	-	-	-	-	-	-	-	-	-	-	-	-
Areas to which oral traditions are attached or which are associated with intangible heritage	None	-	-	-	-	-	-	-	-	-	-	-	-
Historical settlements and townscapes	No	-	-	-	-	-	-	-	-	-	-	-	-
Landscapes and natural features of cultural significance	Riverina areas (visual aesthetics)	0	0	0	3	3	0	1	3	3	3	16 = Medium = 2	
Geological sites of scientific or cultural importance	None	-	-	-	-	-	-	-	-	-	-	-	-
Archaeological and palaeontological sites	Possible	1	-	1	1	-	1	2	-	-	-	6 = Low = 1	
Graves and burial grounds	None	-	-	-	-	-	-	-	-	-	-	-	-
Areas of significance related to labour history	None	-	-	-	-	-	-	-	-	-	-	-	-
Movable objects	None	-	-	-	-	-	-	-	-	-	-	-	-

**4.4 Summarised impact assessment affecting heritage resources**

- See Appendix 4 for an explanation of the rating system

ITEM	AFFECTED HERITAGE RESOURCES	IMPACT TYPE	ISSUES	SEVERITY RATING (intensity factor x duration factor = value = rating)				PROBABILITY RATING	IMPACT SIGNIFICANCE RATING (severity rating x probability rating)	RISK CONS.	RISK RATING
				INTENSITY	DURATION	VALUES	RATING				
1	Buildings, structures, places and equipment of cultural	Pos.	-	-	-	-	-	-	-	-	-
		Neg.	-	-	-	-	-	-	-	-	-

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ITEM	AFFECTED HERITAGE RESOURCES	IMPACT TYPE	ISSUES	SEVERITY RATING (intensity factor x duration factor = value = rating)				PROBABILITY RATING	IMPACT SIGNIFICANCE RATING (severity rating x probability rating)	RISK CONS.	RISK RATING
				INTENSITY	DURATION	VALUES	RATING				
	significance										
2	Areas to which oral traditions are attached or which are associated with intangible heritage	Pos.	-	-	-	-	-	-	-	-	
		Neg.	-	-	-	-	-	-	-	-	
3	Historical settlements and townscapes	Pos.	-	-	-	-	-	-	-	-	
		Neg.	-	-	-	-	-	-	-	-	
4	Landscapes and natural features of cultural significance	Pos.	-	-	-	-	-	-	-	-	
		Neg.	Possible visual intrusion	2	3	6	3	4	12	Medium	2
5	Geological sites of scientific or cultural importance	Pos.									
		Neg.									
6	Archaeological and palaeontological sites	Pos.	Chance finds	1	2	2	2	2	4	Low	1
		Neg.	Chance finds	1	2	2	2	2	4	Low	1
7	Graves and burial grounds	Pos.	-	-	-	-	-	-	-	-	
		Neg.	-	-	-	-	-	-	-	-	
8	Areas of significance related to labour history	Pos.	-	-	-	-	-	-	-	-	
		Neg.	-	-	-	-	-	-	-	-	
9	Movable objects	Pos.	-	-	-	-	-	-	-	-	
		Neg.	-	-	-	-	-	-	-	-	

4.5 Summarised recommended impact management interventions

S 3(2) NHRA heritage resource	Site no	Site name	Impact significance Cultural significance rating x impact risk rating			Impact management	Motivation
			Cult. Sign.	Impact risk	Impact Sign.		
Buildings, structures, places and equipment of cultural significance	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Areas to which oral traditions are attached or which are associated with intangible heritage	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Historical settlements and townscapes	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Landscapes and natural features of cultural significance	Entire site	Riverine area	2	Pos. 2 = Medium Neg.	- -4	Appropriate siting and design	Minimise possible visual intrusion

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S 3(2) NHRA heritage resource	Site no	Site name	Impact significance Cultural significance rating x impact risk rating			Impact management	Motivation
			Cult. Sign.	Impact risk	Impact Sign.		
Geological sites of scientific or cultural importance	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Archaeological and palaeontological sites	All	-	1	Low Pos.	+ 1	Monitor for chance finds	May contribute to knowledge
				Low Neg.	- 1	Monitor for chance finds	Identify and document before destruction
Graves and burial grounds	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Areas of significance related to labour history	-	-	-	Pos.	-	-	-
				Neg.	-	-	-
Movable objects	-	-	-	Pos.	-	-	-
				Neg.	-	-	-

**4.6 Social and economic benefits**

The proposed development will have no heritage-related benefits since no heritage resources will be affected.

The number of jobs created during the construction phase and the running of the resort/estate thereafter will far outweigh the present agricultural employment figures.

The agricultural activities (including breeding of game) will be continued with, and the small section of the farm (2%) that will be utilized has far greater potential for tourism than agriculture.

The Maputo Corridor, the increased traffic flows on the N4 and the excellent accessibility increase the feasibility of tourism facilities within this subject area.

The property has marginal agricultural potential and there is a need to supplement this with tourism facilities. Tourism makes a bigger contribution to the provincial and national economy and the tourism potential of properties should be developed to its maximum potential.

The property has a safe direct access from district road 1870 that in turn links up with other roads and a national route (N4) only 8 km to the south.

There are no camps or tourist roads in the Kruger National Park in the direct vicinity that the proposed development can impact negatively on.

**4.7 Public participation**

This process is part of the EIA as a whole.

**4.8 Identification of risk sources**

The following project actions may impact negatively on any potential historical and archaeological sites and remains.

The actions are likely to occur during the Construction Phase of the proposed project.

- Site preparations and excavations may expose or uncover foundations, ruins, objects and artefacts.
- Public participation may bring new information to light.

**4.9 Key mitigation and enhancement measures before construction**

The selected sites should be inspected once again for any chance finds during site preparation activities.

No further mitigation and enhancement measures are required.

#### **4.10 Key mitigation and enhancement measures during construction**

The following project actions may impact negatively on any archaeological sites and other sites of cultural importance. The actions are most likely to occur during the construction phase of the proposed project.

- Road making, construction and rehabilitation activities and development of services may expose chance finds.

We recommend that:

- Construction work is monitored for the uncovering of any chance finds through excavation activities;
- This recommendation must be included in construction tender documents.
- Identified sites should be properly documented and protected.

#### **4.11 Consideration of alternatives**

No alternatives are considered.

#### **4.12 Key uncertainties and risks that may influence accuracy and confidence of impact assessment**

It is possible that new information, which could change the recommendations, will be generated through the following research activities:

- Archaeological and historical sites and objects that are hidden or are buried;
- Inputs from public participation process.

#### **4.13 Final recommendations**

Based on what was found and its evaluation, there are within a heritage framework no compelling reasons to delay or abandon the proposed development.

Cultmatrix recommends that SAHRA authorises the proposed development, provided that the following mitigation measures will be applied:

1. Construction work will be monitored for chance finds and a heritage specialist will be consulted about such issues.
2. The design, layout and siting of the proposed resort units/components should minimise any visual intrusion into the scenic landscape of the Crocodile River.

## APPENDIX 1: SOCIO-CULTURAL HISTORY OF DEVELOPMENT AREA

The Crocodile River valley has a rich legacy of cultural resources. Occupation of this area took place since Early Stone Age times, and was mostly open sites located close to watercourses. During the Later Stone Age, people become more settled and occupied sites over long periods of time. A number of rock shelters containing San rock art are known to exist in the region. These usually occur in shelters located on the granite outcrops, e.g. in the Mithethemousha Nature Reserve and K'Shani Nature Reserve. Rock art sites exist on the Kruger National Park side of the river not far from Tenbosch.

Iron Age people moved into southern Africa by ca. 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, with others for example at Matola in Mozambique. Some sites dating to this and to a slightly later period were identified at Plaston and, still closer to the study area, on the farms Vergenoeg and The Curlews east of Nelspruit. One site, dating to AD 980, is found south of the study area in the region of Mbuzini.

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. No direct trail went through the Komatipoort. 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.

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 but they did not use the Komatipoort route.

The tropical climate, malaria, bilharzia, nagana, sleeping-sickness and other human and animal diseases prevented widespread colonial occupation. The rinderpest of the 1890s (which decimated large numbers of wild animals and cut down the distribution of tsetse flies), the advent of the railways, planned land settlement of white farmers, the development of agriculture and the establishment of nature conservation areas changed this situation and resulted in increasing numbers of colonists settling in the Komatipoort area.

During the 1840s until the 1880s, the Komatipoort area was visited sporadically by prospectors, scientists, hunters and other explorers, most notably St Vincent Whitshed Erskine (1868 and 1871) and Karl Mauch (1870).

Most of the railways in the *Zuid-Afrikaansche Republiek* (Transvaal Boer republic) were constructed and operated by the *Nederlandsche Zuid-Afrikaansche Spoorweg-Maatschappij* (Netherlands South African Railway Company, or NZASM), a shareholder company with German and Dutch capital. Founded in Amsterdam in 1887, the NZASM's main objective was the establishment of a railway line between Pretoria and Komatipoort, known together with the Komatipoort-Maputo railway of the Portuguese colony of Mozambique as the Eastern Line. However, the NZASM was also granted permission to develop and work other railway lines, such as the *Rand Tram* from Springs to Krugersdorp via Johannesburg and Germiston (1889-1891), the Pretoria-Germiston-Vereeniging line (1890-1893), the Barberton branch line (1894-1896), the Elsburg-Volksrust line (1894-1896) and the Krugersdorp-Klerksdorp line (1895-1897).

The main objective behind the founding of the NZASM in June 1887 in Amsterdam was the construction and working of a railway line between Pretoria and Komatipoort on the Mozambique border, where it would join a line from Maputo, to be constructed and worked by the Mozambican colonial government. The motives behind the Pretoria-Maputo line, known as the *Oosterlijn* (Eastern Line) were economical and political. Maputo was the harbour closest to Pretoria and the Witwatersrand, and the line would promote development on the Eastern Highveld and in the Lowveld. A link with this port would also make the Transvaal Boer republic less vulnerable to interference with its imports and exports at the ports of Natal and the Cape, both of which were colonies controlled by the British government which, in the minds of many Transvalers, posed a threat to their independence.



Although the route was surveyed as early as 1875 by Richard Thomas Hall and Major Joachim Machado in 1883, these were preliminary inspections. However, the Machado route used Komatipoort and much of his entire route was adopted by the NZASM's surveyors who started detailed survey work from Komatipoort in November 1887.

Construction in a westerly direction started at Komatipoort in 1890, and by 1892 the railway reached Nelspruit. After the completion of the railway line from Vereeniging to Pretoria in 1893, construction materials could now also be brought up to the Eastern Line's western terminus (Pretoria). In that year a start was made with construction work in an easterly direction, and in October 1894 the sections from Pretoria and Nelspruit were connected at Wilge River station. The inauguration of the Eastern Line in July 1895 was a festive event in Pretoria.

On the Mozambican side of the border a station was established, named *Ressano Garcia* after one of the most respected Portuguese railway engineers of the time, who also was involved with the planning and construction of the Mozambican railway. This station was laid out on the flats adjoining the Komati River. The station attracted human settlement and eventually a town grew around it.

On the Transvaal side of the border, a station was established at Komatipoort, named after the poort (gap) in the Lebombo Mountains. Due to unsuitable terrain, Komatipoort was laid out further west of the border on higher land overlooking the Komati River. As in the case of *Ressano Garcia*, the station rapidly evolved into a small town.

The line crosses Tenbosch but only between 1902 and 1904 a railway halt was established, named after the farm. The farm name probably had its origin in the *Huis Ten Bosch*, one of the royal palaces in the Netherlands. When the farm was established is not clear since it already existed when it was formally surveyed in 1927. Even for its period, it was a very large farm.

For many decades the farm was occupied by a few farmers and a large black community. Improved irrigation systems made large-scale sugar-cane farming commercially viable since the early 1960s and large parts of the farm are covered with sugar-cane fields.





## APPENDIX 2: INFORMATION SOURCES USED IN THIS REPORT

### Databases

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.  
Heritage Sites Database, Pretoria

### Literature

BERGH, JS (ed), 1999, *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: JL van Schaik.

DE JONG, RC, HEYDENRYCH, DH, VAN DER WAAL, GM, 1988, *NZASM 100*. Johannesburg: Chris van Rensburg Publishers for HSRC.

ICOMOS Australia. 1999. *The Australia ICOMOS Burra Charter for the conservation of places of cultural significance*.

*Living with the land. A manual for documenting cultural landscapes in the Northwest Territories*. Yellowknife (Canada), 2007.

MASON, R, *Prehistory of the Transvaal*.

*National Heritage Resources Act (Act 25 of 1999)*

PIENAAR, U de V, 2007, *Neem uit die Verlede*. Pretoria: Protea Boekhuis.

*Standard Encyclopedia of Southern Africa*.

WILDENBOER, L A, 1976, Stasiename op die Oosterlyn III. SASSAR, January 1976.

### Maps

2531 BD and 2532 AC Komatipoort (1965 and 1984)  
Survey diagrams (Chief Surveyor-General's website [csg.dla.gov.za](http://csg.dla.gov.za))

### Aerial photographs

Job 150/1939 strip 11 Nos 27317, 27319, 27321  
Google Earth

## APPENDIX 3: GLOSSARY OF TERMS

### Cultural significance (Burra Charter)

Aesthetic, historic, scientific, social or spiritual importance, meaning or noteworthiness for past, present or future generations

Cultural significance is embodied in the place itself (intrinsic significance), its fabric, setting, use, associations, meanings, records, related places and related objects.

Cultural significance is assessed in terms of the following criteria, some of which are embodied in the NHRA:

- **Historic value:** Material or intangible evidence resulting from changing social, political and environmental circumstances or conditions
- **Rarity:** Unique or unusual features also possess rarity value, apart from their age. Section 34 of the NHRA provided general protection for all structures older than 60 years. This does not imply that recently erected structures cannot possess rarity, or for that matter cultural value.
- **Scientific value:** Indicates research potential (the capacity to yield more knowledge)
- **Typical:** Indicates that the feature is a good example of a certain class or type of heritage resource
- **Aesthetic:** Other than artistic or architectural expression, aesthetic value can also be evident in craftsmanship, technique, visual cohesion (harmony), visual evidence of permanence and stability, setting etc.
- **Technological:** Indicates value in terms of a technological achievement
- **Personal/Community:** Indicates value in terms of association with a certain person, community, organisation or cultural group
- **Landmark:** A sense of place or belonging involves the physical and visual relationship between a feature and its environment.
- **Condition (material integrity):** Indicates substantial evidence of authentic fabric with minor degree of lost or obliterated fabric; also refers to a structure's restoration potential
- **Sustainability:** The potential for lasting economic viability (use) and the perpetuation of the original use or part thereof.

### Heritage resources/features (NHRA)

Any place or object of cultural significance, including:

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including—
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims of conflict;
  - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
  - (v) historical graves and cemeteries; and
  - (vi) other human remains, which are not covered in terms of the Human Tissue Act, 1983 Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including—
  - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - (ii) objects to which oral traditions are attached or which are associated with living heritage;
  - (iii) ethnographic art and objects;
  - (iv) military objects;

(v) objects of decorative or fine art;  
 (vi) objects of scientific or technological interest; and  
 (vii) 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).

#### Heritage significance (NHRA)

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

#### Historic period

Since the arrival of the white settlers - c. AD 1840 in this part of the country

#### Impact

A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space

#### Impact assessment

Issues that cannot be resolved during screening (Level 1) and scoping (Level 2) and thus require further investigation

#### Intangible heritage

Defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) as:

- Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
- Performing arts;
- Social practices, rituals and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship.

The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

Visual and social impact assessments as part of an HIA are directly associated with intangible cultural heritage.

## **Iron Age**

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

## **Issue**

A question that asks what the impact of the proposed development will be on some element of the environment

## **Maintenance**

Keeping something in good health or repair

## **Management actions**

Actions that enhance benefits associated with a proposed development or avoid, mitigate, restore, rehabilitate or compensate for the negative impacts

## **Preservation**

Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource

## **Reconstruction**

Re-erecting a structure on its original site using original components

## **Rehabilitation**

Re-using an original building or structure for its historic purpose or placing it in a new use that requires minimal change to the building or structure characteristics and its site and environment.

## **Restoration**

Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components

**SAHRA** - South African Heritage Resources Agency

## **Stone Age**

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

## **Value**

Worth, conservation utility, desirability to conserve etc in terms of physical condition, level of significance (importance), economy (feasibility), possible new uses and associations/comparisons with similar features elsewhere

## APPENDIX 4: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON INDIVIDUAL HERITAGE FEATURES

### Category of heritage significance of feature

One or more of the categories (a) to (i) in terms of Section 3(3) of the NHRA

From a heritage perspective there should be a distinction between significance embedded in the physical fabric, or in associations with events or persons, or in the experience of the place.

### Conservation value of heritage feature (individual)

Worth, conservation utility, and desirability to conserve: low, medium, high

### Duration of the impact

- Short term 1-5 years  
Factor 2
  
- Medium term 5-10 years  
Factor 3
  
- Long term Risk will only cease after the operational life of the activity, either because of natural processes or by human intervention  
Factor 4
  
- Permanent (irreversible) Mitigation, either by natural process or by human intervention, will not occur in such a way that the risk can be considered transient  
Factor 5

### Impact significance rating

This is calculated by multiplying the **severity rating** with the **probability rating**.

The impact significance factor should influence the development project as described below.

LEVEL	RATING	POSITIVE RISK CONSEQUENCE	NEGATIVE RISK CONSEQUENCE
Low	4-6	No influence on proposed development	No influence on proposed development
Medium	7-12	Proposed development should be approved	Proposed development should be mitigated or mitigation measures should be formulated before it can be approved
High	13-18	Points towards a decision to approve the development and with enhancement in final design	Points towards a decision to terminate development proposal or to formulate and perform mitigation to reduce significance level to at least low
Very high	19-25 and above	The development should be approved	If mitigation cannot be effectively implemented the development proposal should be terminated

### Intensity of impact

- Low Functions and processes of natural or human origin are not affected and only minor risks may occur  
Factor 1
  
- Medium Natural or heritage environment is affected but functions and processes of natural or human origin can continue through often in an altered manner



**Archaeological impact survey report for the  
PROPOSED TENBOSCH ESTATE DEVELOPMENT,  
BARBERTON MAGISTERIAL DISTRICT  
MPUMALANGA PROVINCE**



**THE PROJECT:**

Development of a housing estate

**THIS REPORT:**

ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED  
TENBOSCH ESTATE DEVELOPMENT, BARBERTON MAGISTERIAL DISTRICT  
MPUMALANGA PROVINCE

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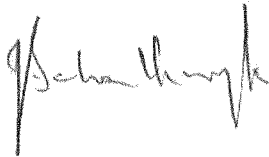
**EXECUTIVE SUMMARY**

**ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED  
TENBOSCH ESTATE DEVELOPMENT, BARBERTON MAGISTERIAL DISTRICT  
MPUMALANGA PROVINCE**

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop a housing estate.

No sites, features or objects of cultural significance were identified in the study area. Therefore, based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

- If construction takes place and archaeological sites are exposed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk  
Heritage Consultant

**TECHNICAL SUMMARY**

<b>Property details</b>						
Province	Mpumalanga Province					
Magisterial district	Berberton					
Topo-cadastral map	2531BD					
Closest town	Malelane					
Farm name & no.	Tenbosch 162JU					
Portions/Holdings						
Coordinates	Centre point					
	No	Latitude	Longitude	No	Latitude	Longitude
	1	S 25.37056	E 31.82948	2	S 25.37648	E 31.84283
	3	S 25.37719	E 31.84305	4	S 25.37221	E 31.82984

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

<b>Development</b>	
Description	Development of a housing complex
Project name	Tenbosch

<b>Land use</b>	
Previous land use	Farming
Current land use	Farming

<b>Heritage sites assessment</b>		
<i>Site type</i>	<i>Site significance</i>	<i>Site grading (Section 7 of NHRA)</i>
None		
<b>Impact assessment</b>		
<i>Impact</i>	<i>Mitigation</i>	<i>Permits required</i>
None	None	None

**TABLE OF CONTENTS**

	Page
EXECUTIVE SUMMARY .....	II
TECHNICAL SUMMARY .....	III
TABLE OF CONTENTS .....	IV
LIST OF FIGURES.....	IV
GLOSSARY OF TERMS AND ABBREVIATIONS .....	V
1. INTRODUCTION.....	1
2. TERMS OF REFERENCE .....	1
3. DEFINITIONS AND ASSUMPTIONS .....	1
4. STUDY APPROACH AND METHODOLOGY .....	2
5. DESCRIPTION OF THE AFFECTED ENVIRONMENT .....	3
6. SITE SIGNIFICANCE AND ASSESSMENT .....	5
7. RECOMMENDED MANAGEMENT MEASURES.....	5
8. RECOMMENDATIONS.....	6
9. REFERENCES.....	7
APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES .....	8
APPENDIX 2. RELEVANT LEGISLATION .....	10
APPENDIX 3: SURVEY RESULTS .....	12
APPENDIX 4: ILLUSTRATIONS.....	13

**LIST OF FIGURES**

	Page
Fig. 1. Location of the study area (red dot) in regional context. ....	3
Fig. 2. The study area, outlined in red). ....	12
Fig. 3. View across the site, showing the wetland area. ....	13