

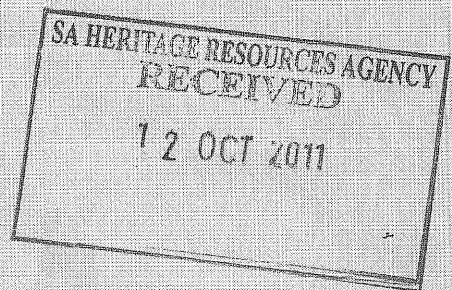
PGS
HERITAGE & GRAVE
RELOCATION CONSULTANTS

**South African National
Roads Agency**

**N1 - Misgund Interchange
Johannesburg**

Heritage Impact Report

Issue Date: 27 September 2011
Revision No.: 1
Project No.: 0834



EXECUTIVE SUMMARY

PGS Heritage & Grave Relocation Consultants was appointed by Environmental Impact Management Services (Pty) Ltd to undertake a Heritage Impact Assessment (HIA) that forms part of the Basic Assessment (BA) for the upgrade of the N1 Misgund Interchange, Johannesburg, Gauteng Province.

The field work identified two archaeological sites of significance within the boundaries of the proposed N1 Freeway Misgund Interchange upgrade. The field work and research also further dispelled the rumour of a cemetery situated within the development area of the interchange.

The following recommendations are made:

Archaeological Sites

PGS01

It is thus recommended that the site (**PGS01**) be documented through a documentation of the layout of the site and excavations to determine the cultural and temporal affinity of the site before construction in the area may commence.

After completion of the documentation and excavation of the site, the developer must apply for a destruction permit from SAHRA and subsequent to the issuing of the destruction permit, construction can commence.

PGS02

If the site is to be impacted by the construction activity, it is recommended that the site (**PGS02**) be documented through distribution maps of lithics and core materials on the site and collection and analysis of the materials for further scientific analysis.

After completion of the documentation and collection on the site, the developer must apply for a destruction permit from SAHRA and subsequent to the issuing of the

Further to these recommendations the general Heritage Management Guideline in Sections 6 needs to be incorporated in to the EMP for the project.

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1 INTRODUCTION

PGS Heritage & Grave Relocation Consultants was appointed by Environmental Impact Management Services (Pty) Ltd to undertake a Heritage Impact Assessment (HIA) that forms part of the Basic Assessment (BA) for the upgrade of the N1 Misgund Interchange, Johannesburg, Gauteng Province.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development area. The Heritage Impact Assessment aims to inform the EIA in the development of a comprehensive EMP to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 Specialist Qualifications

This Heritage Scoping Report was compiled by PGS Heritage & Grave Relocation Consultants (PGS).

The staff at PGS has a combined experience of nearly 40 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. PGS will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

Wouter Fourie, Principal Archaeologist for this project, and the two field archaeologist, Henk Steyn and Marko Hutton are registered with the Association of Southern African Professional Archaeologists (ASAPA) and has CRM accreditation within the said organisation.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape under the aegis of his Cape Town-based company Natura Viva cc. He is a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling

- b. Environmental Scoping Report (ESR) – Section (29)(1)(d)
 - c. Environmental Impacts Assessment (EIA) – Section (32)(2)(d)
 - d. EMP (EMP) – Section (34)(b)
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
 - a. Protection of Heritage resources – Sections 34 to 36; and
 - b. Heritage Resources Management – Section 38
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
 - a. Section 39(3)
- iv. Development Facilitation Act (DFA) Act 67 of 1995
 - a. The GNR.1 of 7 January 2000: Regulations and rules in terms of the Development Facilitation Act, 1995. Section 31.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA states that “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”. The NEMA (No 107 of 1998) states that an integrated EMP should (23:2 (b)) “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. In accordance with legislative requirements and EIA rating criteria, the regulations of SAHRA and ASAPA have also been incorporated to ensure that a comprehensive legally compatible AIA report is compiled.

area within 10m of such representation;

- iii. wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- iv. features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

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

- i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- ii. carrying out any works on or over or under a place;
- iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- iv. constructing or putting up for display signs or boards;
- v. any change to the natural or existing condition or topography of land; and
- vi. any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 2500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

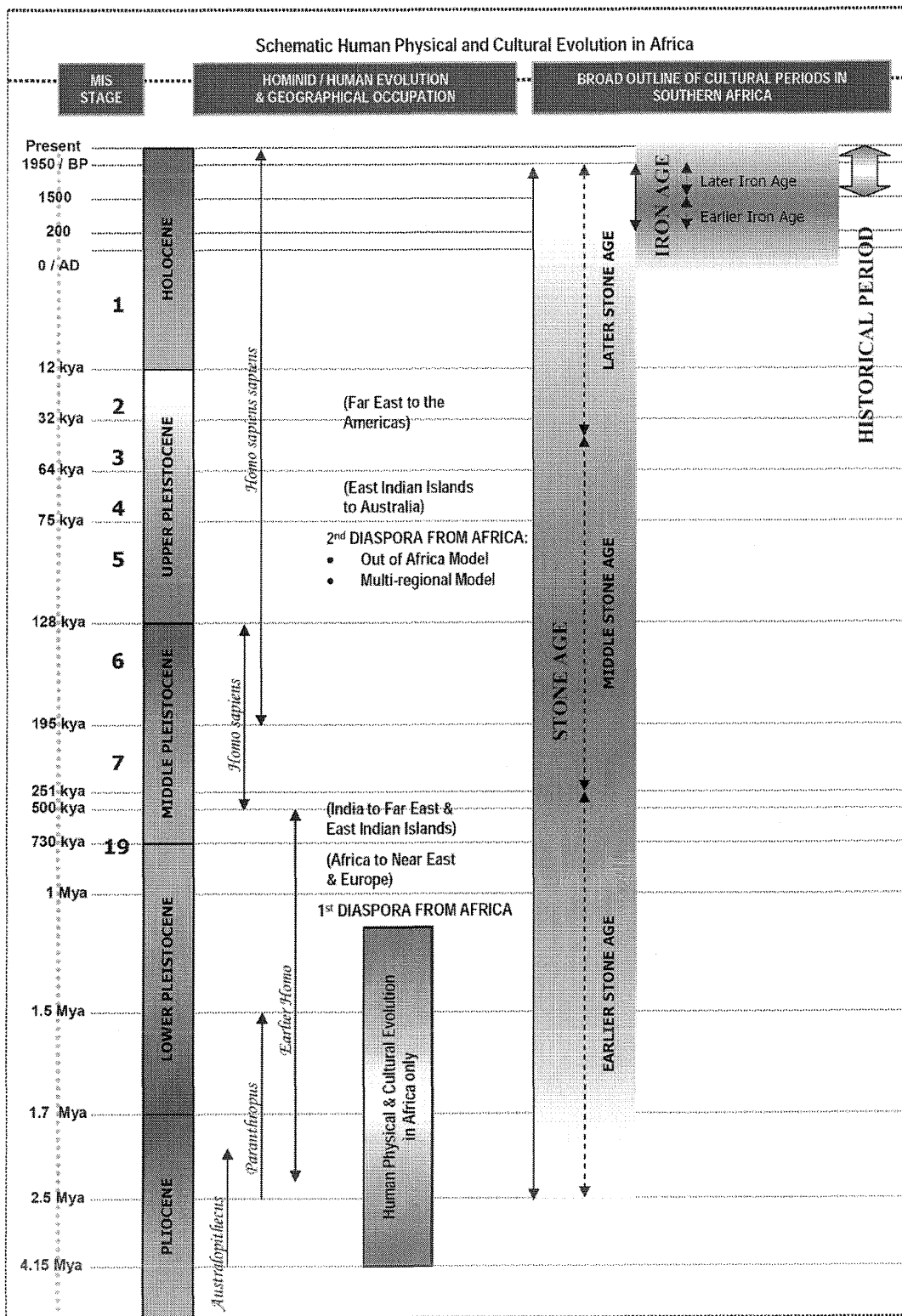


Figure 1 – Human and Cultural Time line in Africa (Morris, 2008)

3 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study.

3.1 Methodology for Assessing Heritage Site significance

This Heritage Impact Assessment (HIA) report was compiled by PGS Heritage and Grave Relocation Consultants (PGS) for the proposed Humansrus Project. The applicable maps, tables and figures, are included as stipulated in the NHRA (no 25 of 1999), the National Environmental Management Act (NEMA) (no 107 of 1998) and the Minerals and Petroleum Resources Development Act (MPRDA) (28 of 2002). The HIA process consisted of three steps:

- Step I – Literature Review: The background information to the field survey leans greatly on the Heritage Scoping Report completed by PGS for this site in September 2010.
- Step II – Physical Survey: A physical survey was conducted on foot through the proposed project area by qualified archaeologists (February 2011), aimed at locating and documenting sites falling within and adjacent to the proposed development footprint.
- Step III – The final step involved the recording and documentation of relevant archaeological resources, as well as the assessment of resources in terms of the heritage impact assessment criteria and report writing, as well as mapping and constructive recommendations

The significance of heritage sites was based on four main criteria:

- site integrity (i.e. primary vs. secondary context),
- amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
 - Low - <10/50m²
 - Medium - 10-50/50m²
 - High - >50/50m²

Table 1: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.A)	-	Low Significance	Destruction

3.2 Methodology for Impact Assessment

The rating system used for assessing impacts is based on three criteria, namely:

- The relationship between impacts/issues and impact status (Box 1);
- The relationship between impacts/issues and spatial scale (Box 2);
- The relationship between impacts/issues and temporal scale (Box 3);
- The relationship between impacts/issues and probability (Box 4)
- The relationship between impacts/issues and severity (Box 5);

These five criteria are combined to describe the overall importance rating, namely the significance (Box 6).

Table 5: Probability of impacts

Rating	Description	Quantitative Rating
None	No impact	0
Improbable	Possibility of the impact materialising is negligible; Chance of occurrence <10%.	1
Probable	Possibility that the impact will materialise is likely; Chance of occurrence 10 – 49.9%.	2
Highly Probable	It is expected that the impact will occur; Chance of occurrence 50 – 90%.	3
Definite	Impact will occur regardless of any prevention measures; Chance of occurrence >90%.	4

Table 6: Severity of impacts

Rating	Description	Quantitative Rating
None	No impact	0
Negligible / Minor	The system(s) or party(ies) is marginally affected by the proposed development.	1
Average	Medium or short term impacts on the affected system(s) or party(ies). Mitigation is very easy, cheap, less time consuming or not necessary. For example, a temporary fluctuation in the water table due to water abstraction.	2
Severe	Medium to long term impacts on the affected system(s) or party (ies) that could be mitigated. For example constructing a narrow road through vegetation with a low conservation value.	3
Very Severe	An irreversible and permanent change to the affected system(s) or party(ies) which cannot be mitigated. For example, the permanent change to topography resulting from a quarry.	4

4 CURRENT STATUS QUO

4.1 Site Description

The site is situated on topographical sheet 2627BD, some 20km south of the Johannesburg CBD. The site is currently open and degraded by previous construction and dumping activities.

The southern section of the development area is characterised by disturbed grass land, the current interchange alignment, while the northern section is characterised by a small rocky hill.

4.1.1 Archival findings

The archival research focused on available information sourced that was used to compile a background history of the study area and surrounds. This data then informed the possible heritage resources to be expected during field surveying.

The findings can be compiled as follow:

Archaeology

The farm Misgund is situated on the western boundary of the Klipriviersberg range. This mountain range to the south of Johannesburg is well known for its Later Iron Age stone walled settlements and associated Iron Age rock engravings (Maggs, 1976; Mason, 1968 and Huffman, 2007).

Historical

The Battle of Doornkop

On 28 and 29 May 1900 a decisive battle of the Anglo-Boer War of 1899-1902 took place along a wide strip of land to the south of Johannesburg. The present study area formed part of this battlefield.

The British forces under the overall command of Lord F.S. Roberts had achieved a number of victories in the period leading up to this battle. On 27 February 1900, for example, General

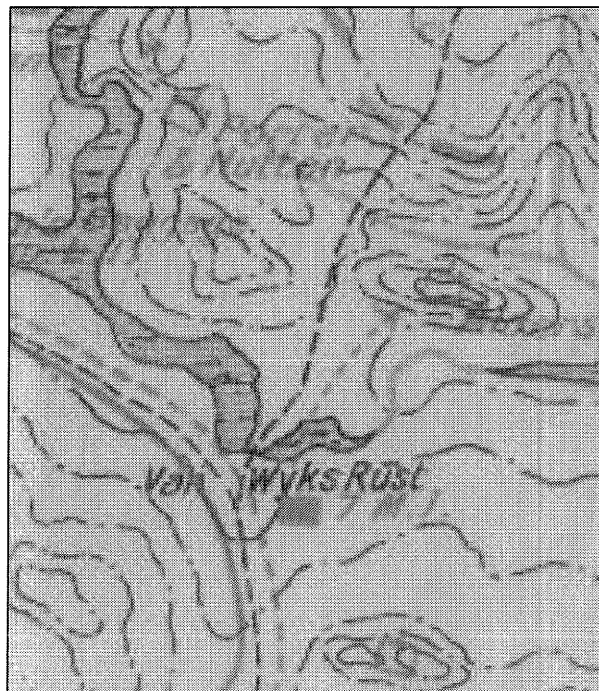
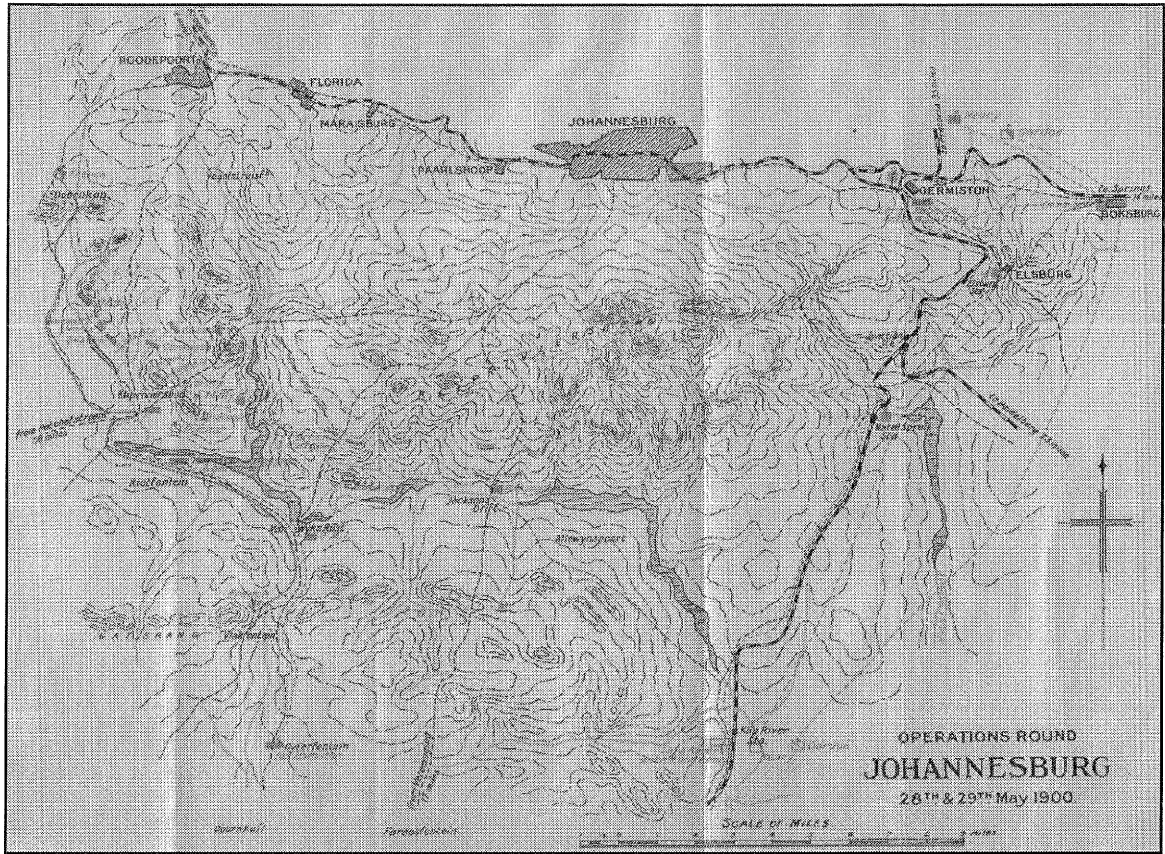


Figure 3 - Map published in Amery (1906). It depicts the Battle of Doornkop (also known as the Battle of Klipriviersberg) of 28 and 29 May 1900. The bottom depiction is an enlargement of the study area and surroundings. The British forces are marked in red and the Boer forces in green.

4.1.3 Heritage sites

Site PGS01

Coordinates: S26 18 02.6 E27 56 48.7

The site is situated at the foot of a small koppie just to the east of the current interchange alignment (*Figure 5*). The site consists of a number of low walls arranged in two large circles adjoining each other. The larger walls are all double walling with infill. The central kraal has two smaller enclosures in the middle that was possibly utilised as small stock enclosures.

Although a small section of the site has been destroyed by the construction of the current Misgund interchange the site is still well preserved, although most of the walling has been removed previously.

Although no ceramics could be found on surface a midden could be identified along the south eastern wall of the settlement.

The settlement unit conforms to the N-type as identified by Maggs (1976) and Class III-Klipriviersberg as identified by Mason (1968) and Huffman (2007).

Site size: Approximately 70 metres in diameter



Figure 7 – View of site from hill (Walling indicated in yellow)

Heritage significance of the site is seen as of Medium significance and rated as **Generally Protected B**.

Specific Impact	No Mitigation							With Mitigation						
	Heritage Signif	Status	Extent	Duration	Probability	Intensity	Impact Signif	Heritage Signif	Status	Extent	Duration	Probability	Intensity	Impact Signif
Impact on site by interchange upgrade	GP/A	-	1	4	2	4	-11	GP/A	-	1	4	2	2	-10

Mitigation:

- It is thus recommended that the site (**PGS01**) be documented through a documentation of the layout of the site and excavations to determine the cultural and temporal affinity of the site before construction in the area may commence.
- After completion of the documentation and excavation of the site, the developer must apply for a destruction permit from SAHRA and subsequent to the issuing of the destruction permit, construction can commence.

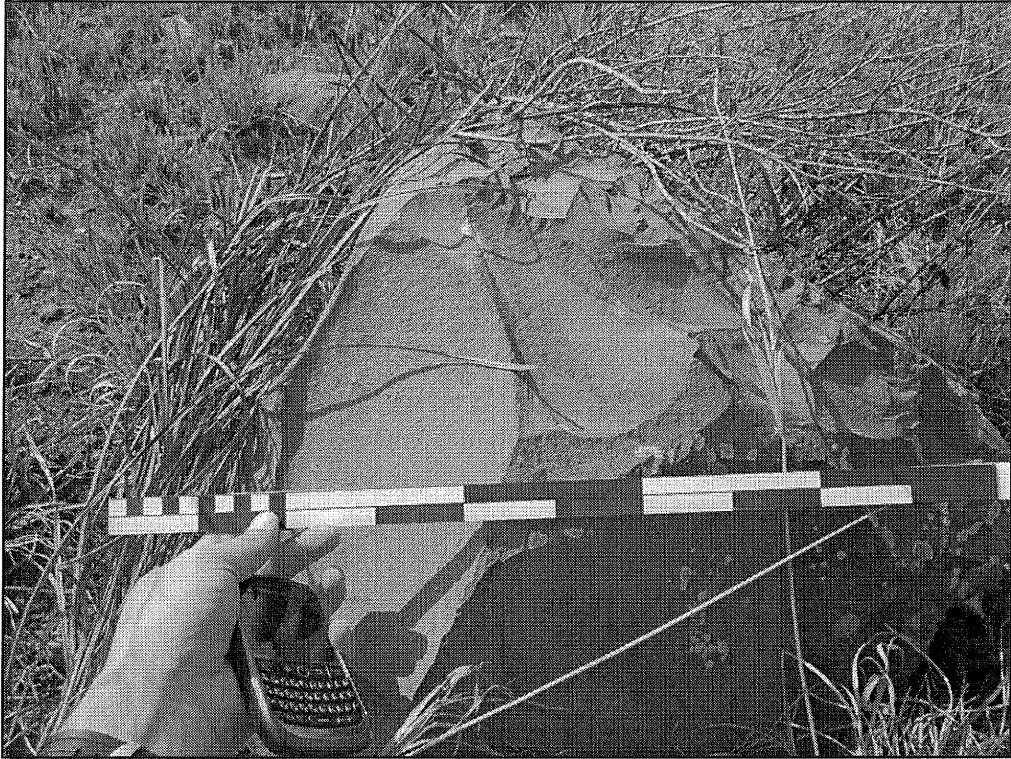


Figure 9 – Flaking marks evident on boulder



Figure 10 – Flaking marks evident on boulder

5 POSSIBLE CEMETERY

At the time of appoint PGS was informed that City Parks was of the opinion that a historical cemetery was situated in close proximity to the proposed Interchange upgrade. PGS contacted Mr. Alan Buff of City Parks to garner further information on the position of the cemetery.

Mr. Fourie from PGS informed Mr. Buff that no cemetery was found on site but a cemetery existed some 800 meters south of the Misgund interchange. It was further indicated to Mr. Fourie that the cemetery should have recent headstone as an application for the erection of a tombstone was lodged a few years back with City Parks in the area of the interchange.

It was then concluded that the cemetery in question is not situated on site, as the walk through of the development area revealed no cemeteries or graves. The cemetery referred to by City Park is the cemetery situated 800 meters south of the interchange.



Figure 12 – Cemetery to the south of the Misgund Interchange

The overall impact of the development on heritage resources is seen as acceptably low and can impacts can be mitigated to acceptable levels.

7 HERITAGE MANAGEMENT GUIDELINES

7.1 General Management Guidelines

1. The National Heritage Resources Act (Act 25 of 1999) states that, any person who intends to undertake a development categorised as-
 - (a) the construction of a road, wall, transmission line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
 - (b) the construction of a bridge or similar structure exceeding 50m in length;
 - (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000 m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
 - (d) the re-zoning of a site exceeding 10 000 m² in extent; or
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, 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 event that an area previously not included in an archaeological or cultural resources survey is to be disturbed, the South African Heritage Resources Agency (SAHRA) needs to be contacted. An enquiry must be lodged with them into the necessity for a Heritage Impact Assessment.

2. In the event that a further heritage assessment is required it is advisable to utilise a qualified heritage practitioner preferably registered with the Cultural Resources Management Section (CRM) of the Association of Southern African Professional Archaeologists (ASAPA).

8. If during the initial survey sites of cultural significance is discovered, it will be necessary to develop a management plan for the preservation, documentation or destruction of such a site. Such a program must include an archaeological/palaeontological monitoring programme, timeframe and agreed upon schedule of actions between the company and the archaeologist.
9. In the event that human remains are uncovered or previously unknown graves are discovered a qualified archaeologist needs to be contacted and an evaluation of the finds made.
10. If the remains are to be exhumed and relocated, the relocation procedures as accepted by SAHRA needs to be followed. This includes an extensive social consultation process.

The definition of an archaeological/palaeontological monitoring programme is a formal program of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

The purpose of an archaeological/palaeontological monitoring programme is:

- To allow, within the resources available, the preservation by record of archaeological/palaeontological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- To provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological/palaeontological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.
- A monitoring is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.
- The objective of the monitoring is to establish and make available information about the archaeological resource existing on a site.

7.2 All phases of the project

7.2.1 Archaeology

Based on the findings of the HIA, all stakeholders and key personnel should undergo an archaeological induction course during this phase. Induction courses generally form part of the employees' overall training and the archaeological component can easily be integrated into these training sessions. Two courses should be organised – one aimed more at managers and supervisors, highlighting the value of this exercise and the appropriate communication channels that should be followed after chance finds, and the second targeting the actual workers and getting them to recognize artefacts, features and significant sites. This needs to be supervised by a qualified archaeologist. This course should be reinforced by posters reminding operators of the possibility of finding archaeological/palaeontological sites.

The project will encompass a range of activities during the construction phase, including ground clearance, establishment of construction camps area and small scale infrastructure development associated with the project.

It is possible that cultural material will be exposed during operations and may be recoverable, but this is the high-cost front of the operation, and so any delays should be minimised. Development surrounding infrastructure and construction of facilities results in significant disturbance, but construction trenches do offer a window into the past and it thus may be possible to rescue some of the data and materials. It is also possible that substantial alterations will be implemented during this phase of the project and these must be catered for. Temporary infrastructure is often changed or added to the subsequent history of the project. In general these are low impact developments as they are superficial, resulting in little alteration of the land surface, but still need to be catered for.

During the construction phase, it is important to recognize any significant material being unearthed, making and to make the correct judgment on which actions should be taken. A responsible archaeologist/palaeontologist must be appointed for this commission. This person does not have to be a permanent employee, but needs to sit in at relevant meetings, for example when changes in design are discussed, and notify SAHRA of these changes. The

- iv. A permit from the local authority;
- v. A permit from the Provincial Department of health;
- vi. A permit from the South African Heritage Resources Agency if the graves are older than 60 years or unidentified and thus presumed older than 60 years;
- vii. An exhumation process that keeps the dignity of the remains intact;
- viii. An exhumation process that will safeguard the legal implications towards the developing company;
- ix. The whole process must be done by a reputable company that are well versed in relocations;
- x. The process must be conducted in such a manner as to safeguard the legal rights of the families as well as that of the developing company.

8 REFERENCES

- MAGGS, T. 1976. Iron Age patterns and Sotho History on the southern Highveld: South Africa. *World Archaeology*. Vol. 7:3
- MASON, R.J. 1968. Transvaal and Natal Iron Age Settlement revealed by aerial Photography and Excavation. *African Studies*. Vol 27:4

LEGISLATIVE REQUIREMENTS – TERMINOLOGY AND ASSESSMENT CRITERIA**3.1 General principles**

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage, destroy, alter, or disturb them. People who already possess material are required to register it. The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the construction company's cost. Thus, the construction company will be able to proceed without uncertainty about whether work will have to be stopped if an archaeological or heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32) it is stated that:

regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administered by a local authority. Graves in the category located inside a formal cemetery administered by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation.

If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.