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HERITAGE IMPACT SCOPING REPORT FOR THE WITKLOOF-THULI 132KV  
LINE AND THE NEW THULI SUBSTATION, CAROLINA DISTRICT,  
MPUMALANGA

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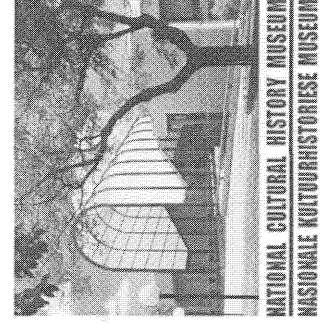
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## **SUMMARY**

### **Heritage impact scoping report for the Witkloof-Thuli 132kV line and the new Thuli Substation, Carolina District, Mpumalanga**

From a heritage point of view, it is anticipated that all four of the identified corridors would, at least for shorter sections, have an impact on heritage sites. Selection of the preferred corridor is then based on the criteria of the least number of sites that would be impacted on. Based on current knowledge, this would be corridor 4, with corridor 1 & 3 taking an equal second place. Corridor 2 would be the least preferred.

Based on the above, it is anticipated that if the development takes place, it would be on condition of acceptance of the management measures as set out in Section 7 of this report. The most important of this would be the conducting of a full Phase 1 archaeological survey of the selected corridor in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

In the case where resources do occur, assessment of the potential impact of the development can only be done once a final corridor has been selected and tower positions determined. Mitigation of heritage sites implies first of all total avoidance, or, secondly, the recovery of sufficient data from the site in order that it can be studied and understood at a later stage. This latter scenario is not necessarily negative as science stands to benefit from such actions.

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## HERITAGE IMPACT SCOPING REPORT FOR THE WITKLOOF-THULI 132KV LINE AND THE NEW THULI SUBSTATION, CAROLINA DISTRICT, MPUMALANGA

### 1. INTRODUCTION

The National Cultural History Museum was contracted by Bohlweki Environmental to undertake a scoping review of cultural heritage resources that might occur and as a result be impacted on in an area in which the Witkloof-Thuli 132kV electricity sub-transmission line and Thuli Substation are to be developed.

*Cultural heritage resources* are broadly defined as 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.

### 2. BACKGROUND AND BRIEF

This report gives an overview of the cultural heritage potential of the area in which it is proposed to build the sub-transmission line, as well as for the erection of the Thuli Substation. Four alternative corridors have been identified and are under environmental investigation. The aim was therefore to determine if there are any heritage sites that would be impacted on negatively by the proposed development. This could be achieved by identifying areas/locations of possible high significance that consequently should be avoided.

The scope of work consisted of:

- 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;
- Select a preferred corridor for the proposed development.
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

### 3. STUDY APPROACH

#### 3.1 Information base

Not much is known about the archaeology of this particular area, largely as very little research has been done here in the past. Most of the work relates to the documentation of Stone Age and rock art sites east of the study area (e.g. ADRC,

Korsman 1990, Van Schalkwyk 2003) and the Iron Age and anthropology (e.g. Myburg 1956, Van Schalkwyk 2003). Some Anglo-Boer War battlefields occur in the area, e.g. Witkloof and, further to the west, Berg-en-Dal/Dalmanutha and Machadodorp.

### 3.2 Assumptions and limitations

Based on the above, it must be stated that this is not a final survey of the corridors, but an evaluation based on existing information and a one-day field visit to determine which of the corridors would be the preferred option. It is assumed that when all factors have been considered and a decision has been made, the selected corridor and specific tower positions would then have to be subjected to a full Phase 1 assessment by a suitably qualified archaeologist.

### 3.3 Methodology

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. A few published sources pertaining to the archaeology of the larger area was found.

The *Archaeological Data Recording Centre* (ADRC), housed at the National Cultural History Museum, Pretoria, was consulted. This was used to draw up a preliminary map to indicate the existence of known sites of cultural significance, indicating potential problem areas.

This preliminary study was followed by a short field trip, from which an overview of the area was gained and an idea of the potential problem areas and expected heritage sites could be formulated.

## 4. STUDY AREA

The location and extent of the study area can be determined from the map in Figure 1. One corridor, no. 2, runs from the town of Carolina in a north-easterly direction, to an area east of the Nooitgedacht Dam, turning west in the direction of the head of the dam. Corridors no. 1 & 3 also runs from the town of Carolina, but in a much more direct line towards the Nooitgedacht Dam, where it joins up with corridor no. 2. Corridor no. 4 runs from the town of Carolina in a north-western direction to an area west of the Nooitgedacht Dam, before turning eastwards to the head of the dam.

Topographically, the area can be described as undulating plains, changing to high mountains to the north. A number of smaller rivers are running through it. The geology is made up of arenite and shale and the vegetation is classified as Moist Sandy Highveld Grassland in the south, changing with the topography to North-eastern Mountain Grassland in the northern parts.

Currently, most of the area is used either for settling on, or for agricultural purposes (grazing, with a little bit of planting).

### 4.1 Description of affected environment



Figure 1. Location of the study area.

### **Stone Age**

Although no stone tools and flakes were noticed during the site visit, a more detailed search would undoubtedly reveal some. Based on the existence of the number of known Stone Age sites in the area, and linked to the geology and topography, the chances of finding small rock shelters that could have been inhabited in the past is highly likely.

### **Iron Age**

During the site visit, some archaeologically sensitive areas dating to the Iron Age were identified. They were identified by means of stone walling, pottery and faunal remains. These sites conform to the types described by Myburg (1956), who undertook a detailed survey of the Carolina area. Some of these sites are located under the existing power line that is identified as corridor 2. Expansion of this corridor would definitely have a further impact on these sites. Similarly, on the northern side of the Nootgedacht Dam, a number of sites occur close to the area that corridors 1-3 would pass through. The northern most section of corridor 4 would also pass in close proximity of some stone walled sites.

### **Historic period**

Although no sites dating to the historic period were identified during the field visit, it is anticipated that informal farm cemeteries, farm labourer homesteads, etc. could be located in or close to any one of the corridors.

## **5. LEGISLATIVE REQUIREMENTS**

Aspects concerning the conservation of cultural heritage are mainly dealt within the Heritage Resources Act (Act No 25 of 1999) and, to a lesser extent, the Environment Conservation Act (Act No 73 of 1989).

### **5.1 National Heritage Resources Act**

In terms of Section 35(4) of this Act, no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; bring onto, or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists 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 Section 7(1) of the Act, SAHRA, in consultation with the Minister and the MEC of every province, must by regulation establish a system of grading of places and objects which form part of the national estate, and which distinguishes between at least the categories-

- (a) Grade I: Heritage resources with qualities so exceptional that they are of special national significance. Examples would be Mapungubwe Iron Age Site or the Castle in Cape Town.
- (b) Grade II: Heritage resources that, although forming part of the national estate, can be considered to have special qualities that make them significant within the context of a province or a region. Examples would be sites containing rock art, or the house of a person important in the history of the country.
- (c) Grade III: Other heritage resources worthy of conservation. Examples would be houses showing architectural merit, etc.

It is unlikely that any site classified as grade I, or even II, are located in the survey area.

## 6. IDENTIFICATION OF RISK SOURCES

Scoping exercises usually focus on two phases of a proposed development: *the construction and operation phases*.

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

TABLE 1:

<b>Construction phase:</b>	
<b>Possible Risks</b>	<b>Source of the risk</b>
Actually identified risks - damage to sites	Construction work in servitude and outside servitude
Anticipated risks - looting of sites	Curious workers
<b>Operation phase:</b>	
<b>Possible Risks</b>	<b>Source of the risk</b>
Actually identified risks - damage to sites	Not keeping to management plans
Anticipated risks - damage to sites	Unscheduled construction/developments

## 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.

Impact analysis and resultant management of cultural resources under threat of the proposed development are based on the present understanding of the construction and operation of a sub-transmission line. The following objectives and design standards, if adhered to, can eliminate, minimise or enhance potential impacts.

- The developer must ensure that an archaeologist inspects each site selected for the erection of a pole structure. If a particular pole structure impacts on a heritage site but cannot be shifted, mitigation measures (i.e. the controlled excavation of the site prior to development) can be implemented. This can only be done by a qualified archaeologist after obtaining a valid permit from the PHRA (Provincial Heritage Resources Agency) (or SAHRA, if it is a category 1 site).
- The same action holds true for any infrastructure development such as access routes, construction campsites, etc.
- In the past, people used to settle near water sources. Therefore riverbanks, rims of pans and smaller watercourses should be avoided as far as possible.
- In this particular part of the country, Iron Age people also preferred to settle on hilltops and the slopes of mountains, preferably where there are outcrops from which stone for building purposes could be obtained. These areas should also be avoided.
- Avoid all patches bare of vegetation unless previously inspected by an archaeologist. These might be old settlement sites.
- Rock outcrops might contain rock shelters, engravings or stone walled settlements, and should therefore be avoided unless previously inspected by an archaeologist.
- Communities living close to the proposed corridor should be consulted as to the existence of sites of cultural significance, e.g. graves, as well as sites that do not show any structures but have emotional significance, such as battlefields, etc.
- All graves or cemeteries should be avoided, unless when totally impossible. The correct procedure (i.e. notification of intent to relocate them, consultation with descendants and permit application) should then be followed in relocating the graves. If any of the graves are older than 60 years, they can only be exhumed by an archaeologist. Graves of victims of conflict requires additional permits from SAHRA before they can be relocated.
- Archaeological material, by its very nature, occurs below ground. The developer should therefore keep in mind that archaeological sites might be exposed during the construction work. If anything is noticed, work in that area should be stopped and the occurrence should immediately be reported to a museum, preferably one at which an archaeologist is available. The archaeologist should then investigate and evaluate the find.

- Any mitigation measures applied by an archaeologist, in the sense of excavation and documentation, should be published in order to bring this information into the public domain.

## 8. DISCUSSION

From a heritage point of view, it is anticipated that all four of the identified corridors would, at least for shorter sections, have an impact on heritage sites. Selection of the preferred corridor is then based on the criteria of the least number of sites that would be impacted on. Based on current knowledge, this would be corridor 4, with corridor 1 & 3 taking an equal second place. Corridor 2 would be the least preferred.

Based on the above, it is anticipated that if the development takes place, it would be on condition of acceptance of the management measures as set out in Section 7 of this report. The most important of this would be the conducting of a full Phase 1 archaeological survey of the selected corridor and tower positions in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

In the case where resources do occur, assessment of the potential impact of the development can only be done once a final corridor has been selected. Mitigation of heritage sites implies first of all total avoidance, or, secondly, the recovery of sufficient data from the site in order that it can be studied and understood at a later stage. This latter scenario is not necessarily negative as science stands to benefit from such actions.

## 9. REFERENCES

### 9.1 Data bases

Archaeological Data Recording Centre, National Cultural History Museum, Pretoria.  
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

### 9.2 Literature

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### 9.3 Maps

1: 50 000 Topocadastral maps – 2529DD, 2530CC, 2629BB, 2630AA

## 10. PROJECT TEAM

J van Schalkwyk, principal investigator (ASAPA)

## APPENDIX 1. GLOSSARY AND ABBREVIATIONS

This section is included to give the reader some necessary background. It must be kept in mind, however, that these dates are all relative and serve only to give a very broad framework for interpretation.

### 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

### IRON AGE

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

### HISTORICAL PERIOD

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

ADRC - Archaeological Data Recording Centre

core - a piece of stone from which flakes were removed to be used or made into tools

PHRA – Provincial Heritage Resources Agency

SAHRA - South African Heritage Resources Agency