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2001/077745/23

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### **1<sup>st</sup> Phase study**

#### **CULTURAL HERITAGE RESOURCES IMPACT ASSESSMENT FOR PROPOSED NEW 400 kV ESCOM POWER LINE BETWEEN HENDRINA POWER STATION AND GUMENI.**



*Photo 01. Graves at Gumeni substation.*

**February 2010**

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## **1. DEFINITION**

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

## **2. PROTECTED SITES IN TERMS OF THE NATIONAL HERITAGE ACT, Act. NO. 25 OF 1999**

The following are the most important sites and objects protected by the National Heritage Act:

- a. Structures or parts of structures older than 60 years
- b. Archaeological sites and objects
- c. Palaeontological sites
- d. Meteorites
- e. Ship wrecks
- f. Burial grounds
- g. Graves of victims of conflict
- h. Public monuments and memorials
- i. Structures, places and objects protected through the publication of notices in the Gazette and Provincial Gazette
- j. Any other places or object which are considered to be of interest or of historical or cultural significance
- k. Geological sites of scientific or cultural importance
- l. Sites of significance relating to the history of slavery in South Africa
- m. Objects to which oral traditions are attached
- n. Sites of cultural significance or other value to a community or pattern of South African history

### **2.1 SPECIAL NOTE.**

All heritage sites in South Africa are evaluated and classed in three different categories. From this classification then arise the status of the site with added value the higher the status.

2.1.1. Some sites, such as individual buildings with low heritage value are deemed to be of **Local Interest**.

2.1.2. Some sites such as large Iron Age sites with some added heritage value are deemed to be of **Provincial Interest**.

2.1.3. Other sites that are old, large and of significant heritage value to most South Africans are deemed to be of **National Interest**.

2.1.4. A few sites such as Sterkfontein Caves that are of significant heritage value for people also outside of South Africa are deemed to be of **International Interest**.

### **3. METHODOLOGY**

**3.1.** The coordinating consultancy, Strategic Environmental Focus (Pty) Ltd <sup>1</sup>arranged a combined visit of concerned consultants and representatives of the client, ESCOM, to the route over the period 10, 11 and 12<sup>th</sup> February. This was to combine strategic resources such as transport and identification of the route, as well as to minimise the impact on landowners. This was especially significant where the route passed over land that was mined, owing to safety legislation at such facilities.

**3.2.** Apart from the above all relevant maps and documents available, concerning the site, were studied.

**3.3.** The actual visit to relevant points in the landscape was severely challenged owing to several conditions.

**3.3.1.** In the first place the last 20 kilometres of the route to Gumeni crosses robust broken countryside with nearly no land route access to pylon positions.

**3.3.2.** Secondly the vast coal mining operations, now slotted in with local maize farming<sup>2</sup>, made access to land difficult.



*Photo 02. Typical interaction between farmers and miners*

**3.3.3.** In the third place, with the lateness of the season, and the remarkable precipitation of the present season the vegetation cover on all portions of the route was more impeding than normal from an archaeological perspective. (The consultants concerned with natural heritage on the other hand welcomed the noteworthy vegetation.)

**3.3.4.** The extraordinary maize crop of this season.

**3.3.5.** Rain and road conditions.

**3.4.** Positives of the investigation were:-

**3.4.1.** The first is the immaculate maps drawn from Google Earth and overlain with positions of existing infrastructure, as well as the route under investigation, that was made available to the investigators by S.E.F.

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<sup>1</sup> From now on read Strategic Environmental Focus (Pty) Ltd as S.E.F.

<sup>2</sup> There are obvious clashes of interest between the farmers and the miners, and any 'outsiders' (such as the consulting investigation group) are always viewed with suspicion. This makes access to farms difficult, even if proper meetings are arranged.

*This especially highlighted archaeological features which made fieldwork much more exact and concise.*

**3.4.2.** Secondly the S.E.F. agent had coordinated reference points of all pylon positions plotted on a Global Positioning System apparatus that was able to take the consulting group to within an accurate location for examining the conditions.

**3.5.** For the purpose of this survey it was assumed that the placement of the proposed new power line **can impact** on cultural heritage remains in two ways:-

**3.5.1.** The actual footprint of a pylon on a site.

**3.5.2.** The access routes of contractors during construction.

**3.6.** For the purpose of this survey it was assumed that the placement of the proposed new power line **will not impact** on cultural heritage remains in two ways:-

**3.5.1.** The over-spanning of the actual power lines over sites.

**3.5.2.** The aesthetic influence in the landscape, as the proposed line is following existing corridors.

**3.7.** During the investigation impact areas were pointed out to S.E.F. representative. These impact areas will be reassessed by the engineering design team to move pylon positions in accordance with requests. ***If this is not possible then ESCOM and their representatives must seek mitigation through the normal channels with SAHRA.***

**3.8.** It is prescribed that before construction is commenced that all heritage elements that may be influenced by contractor access are to be demarcated with one meter high, red fluorescent temporary danger marker fencing. This is to be placed in conjunction between the contractor, a heritage specialist and an 'Auditor'<sup>3</sup>.

**3.9.** As there are several sensitive areas involved, it is prescribed that a strict penalty clause should be included in the tender document, and that all sensitive areas positions are to be included in tender documentation for contractors notice.

**3.10.** Photographs of only mitigation sites are included in the report. General photographs taken during the survey are included as an Addendum

**3.11.** The map book provided to all the consultants must be read as the main reference to information included in the report. Owing to its bulk it must be included as an Addendum.

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<sup>3</sup> This ideally should be the same person/s that will be auditing the environmental impacts as well. (S.E.F.?)

#### **4. BACKGROUND INFORMATION.**

The Strip of land under investigation is situated on the South-eastern high-veldt and extends over some broken landscape towards the low-veldt. It passes just south of Belfast, one of the coldest places in South Africa and terminates not far from the De-Kaap valley, known for its tropical climate and high summer temperatures.

The area is therefore not really suitable for either Hunter Gatherer societies or for Agro-Pastoralists from the Iron Age. This stems from lack of fuel for fires and for wood for building purposes in the area.

With the growth of indigenous populations in the more moderate regions from the fifteenth century onwards, as well as the introduction of **Maize** into Southern Africa by the Portuguese from the seventeenth century we then also find that people are now also utilising the eastern high-veldt. These include different peoples at different times owing to civil conflict. Some of these are the Pedi, (North Sotho) the Swazi and the Ndebele peoples.

After the period known as the *Defikane* or *Mfekane* in the early nineteenth century, white pioneers moved into the area, and started 'modern', farming practices resulting in the production of meat, dairy and maize products.

Finally the advent of gold mining on the Witwatersrand from the 1880's onward and the urbanisation of the South African population from the 1920's onward resultant in urgent need for electricity.

This again resulted in the massive scale of coal mining and power production in the area.



*Photo 03. This is a typical view of Later Iron Age sites in the area taken in the dry season with minimal grass coverage. With the present survey it was nearly impossible to photograph sites owing to high precipitation and exceptional vegetation coverage.*

## **5. RESULTS.**

**5.1. (See photo 1 front page.)** During the fencing of the Gumeni site, the contractor busy with the construction of the Gumeni substation discovered two graves. These were visited and may date to between 80 and 120 years old. The reason for assuming these dates is that the trees that have grown in the graves cannot be much younger than 60 years and that it appears to be the graves of Christianised black people.

**5.1.1. Suggested mitigation.** The graves are not hampering any important construction work. It is therefore suggested that an area of twenty by twenty meters is fenced off around the grave site with the same fencing material that the contractor is using on the site. All stone walling and vegetation should be left in place.

**5.1.2. Alternative mitigation.** ESCOM may wish to have the graves relocated in a modern facility

**5.1.1. Waypoint T200 TO T199. (See photo 6 on page 12.)** A cattle enclosure associated with the farmstead situated at T201 is located close to T200. It has already partially been disturbed by the building of the existing line.

**5.1.1.1. Suggested mitigation.** The area must be demarcated for the period of construction.

**5.1.1.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.2. Waypoint T201. (See photo's 4 and 5 on page 11)** This pylon is situated in or near an old farmyard with graves dating to the early part of the twentieth century. Several structures form a formal farmyard that includes a small cemetery, formal orchards and formal fields that were brought under flood irrigation by water furrows.

**5.2.1. Suggested mitigation.** The pylon T201 must be moved to the east..

**5.2.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.3. Waypoint T197 TO T196. (See photo 7 on page 12.)** A Later Iron Age Site<sup>4</sup> is located next to an existing road under the proposed power line.

**5.3.1. Suggested mitigation.** The areas must be demarcated for the period of construction.

**5.3.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.4. Waypoint T191 TO T190. (See photo 8 on page 13.)** A large L.I.A. site is located next to an existing road under the proposed power line. There is also a large complex of similar L.I.A. homesteads to the south of pylon T190 that may be influenced during construction. *This is an extremely sensitive area*

**5.4.1. Suggested mitigation.** The areas must be demarcated for the period of construction, *and all construction roads must be planned with the input of a heritage specialist.*

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<sup>4</sup> Later Iron Age site is abbreviated as L.I.A. site.

**5.4.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.5. Waypoint T189 TO T188.** (See photo 8 on page 13.) A L.I.A. site is located under the proposed power line. There is also a large complex of similar L.I.A. homesteads both to the south of, and to the north of pylons T189 and T188 that may be influenced during construction.

Pylon T188 also appear to be located within an L.I.A. enclosure

*This is an extremely sensitive area*

**5.5.1. Suggested mitigation.** Pylon T188 must be moved towards the east and out of the L.I.A. enclosure. The areas must be demarcated for the period of construction, *and all construction roads must be planned with the input of a heritage specialist.*

**5.5.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.6. Waypoint T176 TO T175.** A L.I.A. site is located next to an existing road under the proposed power line. There is also similar L.I.A. homesteads to the south of pylon T175 that may be influenced during construction. *This is a sensitive area*

**5.6.1. Suggested mitigation.** The areas must be demarcated for the period of construction, *and all construction roads must be planned with the input of a heritage specialist.*

**5.6.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.7. Waypoint T149 TO T148.** (See photo's 9 and 10 on pages 13 and 14.) A circular stone structure as well as some walling is located under the proposed power line, as well in close proximity to pylon T149. These may either be associated with the second South African War<sup>5</sup> or may be associated with irrigation structures. *This is a sensitive area*

**5.7.1. Suggested mitigation.** Pylon T149 must be moved. The areas must be demarcated for the period of construction.

**5.7.2. Alternative mitigation.** ESCOM may wish to have the structures demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.8. Waypoint T132 TO T131.** The ruins of an old farmstead are located in close proximity of the proposed power line. (no buildings survive, only vegetation.)

**5.8.1. Suggested mitigation.** The areas must be demarcated for the period of construction,

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<sup>5</sup> Also known as the second Anglo-Boer War



**5.8.2. Alternative mitigation.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.9. Waypoint T101 TO T100.** (*See photo 11 on page 13.*) The ruins of an old farmstead are located in close proximity of the proposed power line, especially pylon T100. There is little left of the old dwelling, but opportunistic temporary settlers have occupied the site. As many as 30 people may live here at present. ***This is an extremely sensitive social issue.***

**5.9.1. Suggested mitigation from a heritage perspective.** Pylon T100 must be moved westwards. The areas must be demarcated for the period of construction.

**5.9.2. Alternative mitigation from a heritage perspective.** ESCOM may wish to have the complex demolished by method of second phase impact assessment and application for destruction through SAHRA.

**5.10. Waypoint T47 TO T46.** The 'stone walls' indicated on the Google Maps are in fact cosmos flowers that are concentrated between the road and the fields.

**5.9.1. Suggested mitigation.** No action.

## **6. EVALUATION OF SITES.**

**All the sites are of Local Importance except the large Later Iron Age site situated between waypoints T190 TO T189 and between waypoints T189 TO T188 that may be of Provincial Importance.**

## **7. COMMENTS AND CONCLUSIONS.**

As far as conditions permitted it was found that there are only 10 sites that need to be taken into consideration with new design parameters as far as heritage issues are concerned.

All of these can be easily mitigated by the movement of pylons and the careful demarcation of Later Iron Age sites during construction.

Underground heritage remains cannot be identified by heritage consultants and these have to be dealt with when encountered according to existing rules.

It is of special concern that construction roads in the sensitive areas must be laid out under the supervision of a heritage specialist, as the roads do more damage to heritage sites than the footprint of a pylon.

## **8. RECOMMENDATIONS.**

It is recommended that all identified sites are to be properly mapped and documented for inclusion in the contract documentation for purposes of meaningful auditing of contractors actions. Without such documentation there will be no reference for either the contractor or the client or the heritage authorities in cases of dispute. This will also assist the client and the contractor with the planning and building of access routes.

## **9. STATEMENT OF INDEPENDENCE AND PROFESSIONAL AFFILIATION**

I the undersigned hereby declare that I am not involved in any way with the developers or the consulting company Strategic Environmental Focus (Pty) Ltd.

I further state that I have been sub-contracted by Strategic Environmental Focus (Pty) Ltd to conduct a cultural heritage resources impact assessment of the above-mentioned property and this I have done for a professional fee. I conducted this survey in a scientific and impartial fashion.

Signed: at Pretoria on the 26 February 2010.



Udo Siegwalt Küsel

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**Sidney Miller**

B.Sc (Engineering) Civil M.A. (Architecture) Conservation

## **10. REFERENCES**

- Delius, 2009: The History of Mpumalanga**  
**Maggs, T.M.O'C. 1976: Iron Age Communities of the Southern High-veldt.**  
**Mason , R.J. 1962: The Prehistory of the Transvaal .**  
**THE NATIONAL HERITAGE ACT, Act. NO. 25 OF 1999.**

**PHOTOGRAPHS.**



*Photo 04. One of the farm buildings at proposed pylon T201. This collection of buildings, graves and orchards date to the period between circa 1870 and 1940.*



*Photo 05. One of the graves at proposed pylon T201.*



*Photo 06. The cattle enclosure at proposed pylon T200.*



*Photo 07. Overgrown hilltop beyond Later Iron Age site between T197 and T196. The sites are not easily perceived in the landscape by untrained eyes especially after a good rain season. This is why it is necessary to demarcate the sites with proper 'safety fencing', especially during construction.*



*Photo 08. Looking down from pylon T187 onto the valley that is filled with Later Iron Age enclosures. This is an exceptionally sensitive area.*



*Photo 09. Circular stone structure next to Klein Komatie River at proposed pylon T148.*



*Photo 10. Stone structure next to Klein Komatie River at proposed pylon T149.*



*Photo 11. Old farmyard near proposed pylon T100. Note large informal settlement that will be situated within a few meters from the proposed pylon.*