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**A PHASE I HERITAGE IMPACT ASSESSMENT STUDY FOR  
ESKOM'S PROPOSED 132KV CHIKADEE POWER LINE (LOOP-  
OUT) FROM THE WARMBAD-PELLY 132KV BACKBONE TO  
THE RUST DE WINTER SUBSTATION IN THE LIMPOPO  
PROVINCE**

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## EXECUTIVE SUMMARY

A Phase I Heritage Impact Assessment (HIA) study as required in terms of Section 38 of the National Heritage Resources Act (No 25 of 1999) was done for Eskom's proposed new 132kV power line running between the Pelly-Warmbad backbone and the Rust de Winter Substation in the Limpopo Province. The construction of the proposed new 132kV Pelly-Warmbad to Rust De Winter power line is hereafter referred to as the Eskom Project whilst the footprint of the proposed power line is referred to as the Eskom Project Area.

The aims with the Phase I HIA study were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Eskom Project Area and, if so to determine the significance of these heritage resources, and
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the Eskom Project.

This Phase I HIA study did not provide for a paleontological study.

The Phase I HIA study for the proposed Eskom Project did not reveal the presence of any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Eskom Project Area.

There is consequently no reason from a heritage point of view why the Eskom Project should not continue.

Both Alternative 01 as well as Alternative 02 seems to be suitable from a heritage point of view for the construction of the new 132kV power line between the Pelly-Warmbad backbone and the Rust de Winter Substation.

### **General**

It is possible that this Phase I HIA study may have missed heritage resources in the Eskom Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all

development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

# CONTENTS

	<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>1</b>	<b>INTRODUCTION</b>	<b>5</b>
<b>2</b>	<b>TERMS OF REFERENCE</b>	<b>8</b>
<b>3</b>	<b>THE ESKOM PROJECT AREA</b>	<b>9</b>
3.1	Location	9
3.2	The nature of the Eskom Project	10
3.3	The nature of the Eskom Project Area	11
<b>4</b>	<b>METHODOLOGY</b>	<b>12</b>
4.1	Fieldwork	12
4.2	Databases, literature survey and maps	12
4.3	Assumptions and limitations	13
4.4	Some remarks on terminology	13
<b>5</b>	<b>CONTEXTUALISING THE ESKOM PROJECT AREA</b>	<b>17</b>
5.1	Stone Age sites	17
5.2	Early Iron Age	18
5.3	Late Iron Age and historical remains	19
<b>6</b>	<b>THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY</b>	<b>21</b>
6.1	The heritage field survey	21
6.1.1	Alternative 01	21
6.1.2	Alternative 02	24
6.2	Types and ranges of heritage resources	25
<b>7</b>	<b>CONCLUSION AND RECOMMENDATIONS</b>	<b>26</b>
<b>8</b>	<b>SELECT BIBLIOGRAPHY</b>	<b>27</b>

## **1 INTRODUCTION**

This document contains the report on the results of the Phase I Heritage Impact Assessment (HIA) study that was done for Eskom's proposed 132kV Pelly-Warmbad to Rust De Winter power line in the Limpopo Province.

Focused archaeological research has been conducted in the Limpopo Province for several decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as of the recording of rock art and historical sites in this area. The Limpopo Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Limpopo Province form a record of the heritage of most groups living in South Africa today.

Heritage resources in the Limpopo Province therefore constitute a rich and wide diversified range (comprising the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999) (see Box 1, next page).

**Box 1: Types and ranges of heritage resources (the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999)**

The National Heritage Resources Act (No 25 of 1999) outlines the following types and ranges of heritage resources that qualify as part of the national estate, namely:

- (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 paleontological 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 by 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) moveable objects, including -
  - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological 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, photographs, 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).

The National Heritage Resources Act (Act No 25 of 1999, Sec 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

- (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;
- (i) sites of significance relating to the history of slavery in South Africa

## **2 TERMS OF REFERENCE**

Eskom's Limpopo Operating Unit (Land Development) (Eskom) plans to construct a 20km 132kV chickadee power line (loop out) from Warmbad-Pelly backbone to Rust de Winter Substation in the vicinity of Rust de Winter in the Limpopo Province.

This Eskom Project may have an influence on any of the types and ranges of heritage resources which are listed in Section 3 of the National Heritage Resources Act (No 25 of 1999).

In order to comply with heritage legislation, Eskom requires knowledge of the presence, relevance and the significance of any heritage resources that may be affected by the Eskom Project. Eskom needs this knowledge in order to take pro-active measures with regard to any heritage resources that may be affected, damaged or destroyed when the Eskom Project is implemented. Texture Environmental Consult, the environmental consultant who is responsible for compiling the Basic Assessment study for the Eskom Project Eskom therefore commissioned the author to undertake a Phase I HIA study for the Eskom Project Area.

The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Eskom Project Area and, if so to determine the significance of these heritage resources, and
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the Eskom Project.

### 3 THE ESKOM PROJECT AREA

#### 3.1 Location

The Eskom Project is located approximately thirty km to the east of the village Pienaarsrivier and the N1 Highway which runs from Pretoria in the south to Polokwane in the north. The Eskom Project Area is located on the southern border of the Springbok Flats and stretches across the flat grasslands of this ecozone in an area which is bordered by Pienaarsrivier in the west and Rust de Winter in the east (Pretoria 1:250 000 map & 2528AB Pienaarsrivier 1:50 000 topographical map).



Figure 1- Regional setting for the Eskom Project Area near Pienaarsrivier and the Rust de Winter Dam in the Limpopo Province (above).



### 3.2 Development components of the Eskom Project

The development component of the Eskom Project comprises the following:

- The construction of a 20km 132 kV chickadee line (loop-out) from the Pelly-Warmbad backbone to the Rust de Winter Substation. Two alternatives are available for this route, namely Alternative 01 and Alternative 02.

Alternative 01 runs along the following stretches, namely:

- Stretch AB runs from the Rust de Winter Substation southwards across the farm Buffelsdrift 179JR.
- Stretch BC runs westwards across Kliprand 76JR and Kameelrivier 77JR.

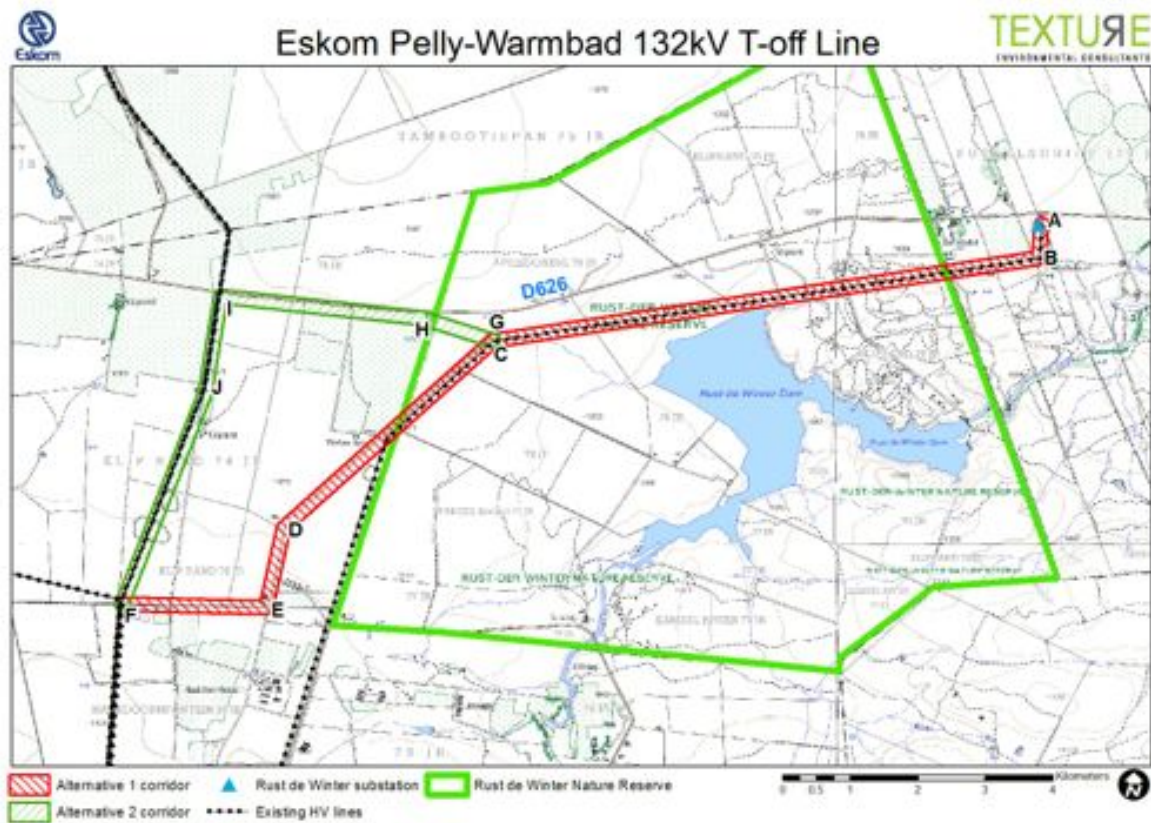


Figure 2- The Eskom Project comprising the construction of a 132kV power line between the Pelly-Warmbad backbone and the Rust de Winter Substation on the Springbokflats in the Limpopo Province. Two alternatives are proposed for the new power line (above).

- Stretch CD bends south-westwards and runs across the farm Kameelrivier 77JR and Kliprand 74JR.
- Stretch DE runs southwards for a short distance across Kliprand 74JR.
- Stretch EF bends westwards and runs along the border fence of Kliprand JR and Haakdoringfontein 35JR to the existing Pelly-Warmbad power line.

Alternative 02 runs along the following stretches, namely:

- Stretch AG runs from the Rust de Winter Substation southwards across the farm Buffelsdrift 179JR. (Identical to Stretch AB for Alternative 01).
- Stretch GHI runs westwards across the farm Kliprand 74JR where it joins the existing 132kV Pelly-Warmbad power line.
- Stretch IFJ runs southwards across the farm Kliprand 74JR and ends at the Pelly-Warmbad backbone on Kliprand 76JR.

The construction of the proposed 132V chickadee power line between the Warmbad-Pelly backbone to the Rust de Winter Substation is hereafter referred to as the Eskom Project whilst the footprint of the power line is referred to as the Eskom Project Area.

### **3.3 The nature of the Eskom Project Area**

The Eskom Project Area involves the flat grasslands of the Springbokflats which is covered with low acacia trees and here and there clumps of trees creating a savannah landscape. Although pristine stretches with grass veld and indigenous trees occur, irrigation and dry-land agriculture have been established on large tracks of the original land. Consequently, the Eskom Project Area cannot be described as pristine any longer. Occupation of the area is scarce and farmsteads which exist occur far from each other.

In the discussion of the field survey the nature and characteristics of the Eskom Project Area is more clearly illuminated ('Part 6.1 The field survey').

## 4 METHODOLOGY

### 4.1 Fieldwork

The proposed Eskom Project Area (which involves two alternatives for the 132kV Pelly-Warmbad to Rust de Winter power lines) were surveyed with a vehicle whilst pedestrian surveys were undertaken from the mains route that were followed with a vehicle.

A fixed (or mounted) GPS was used to record main routes from where the pedestrian surveys were conducted.



**Figure 1– Main routes that were registered with a mounted GPS instrument during the field survey for Eskom’s 132kV Pelly-Warmbad power line routes (above).**

### 4.2 Databases, literature survey and maps

The desktop study involved consulting heritage data banks maintained at institutions such as the Limpopo Provincial Heritage Resources Agencies, the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and the

national heritage resources register at the South African Heritage Resources Agency (SAHRIS) in Cape Town.

The author is acquainted with the Eskom Project Area at large as he had done a large number of heritage impact assessment studies near the Eskom Project Area (see Part 8, 'Select Bibliography').

Literature relating to the pre-historical and the historical unfolding of the Eskom Project Area was reviewed (see Part 5, 'Contextualising the Project Area') in order to comprehend the identity and meaning of heritage sites which may be found in and near the Project Area.

Maps outlining the Eskom Project Area were studied (2528AB Pienaarsrivier 1:50 000 topographical map; 2527 Pretoria 1: 250 000 map).

#### **4.3 Assumptions and limitations**

It is possible that this Phase I HIA study may have missed heritage resources in the Eskom Project Area as heritage sites may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorization (permits) from SAHRA to conduct the mitigation measures.

#### **4.4 Some remarks on terminology**

Terms that may be used in this report are briefly outlined below:

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its

continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.

- Cultural resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- Cultural resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.
- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.

- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16<sup>th</sup> century and the 19<sup>th</sup> century and can therefore include the Historical Period.
- Maintenance: Keeping something in good health or repair.
- Pre-historical: Refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- Recent past: Refers to the 20<sup>th</sup> century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems. Various types of protected areas occur in South Africa.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.

- Stone Age: Refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).
- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.
- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to Figure 3).
- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in any given Project Area (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).
- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

## **5 CONTEXTUALISING THE ESKOM PROJECT AREA**

No archaeological research or fully-flexed archaeological surveys have as yet been undertaken in the Eskom Project Area. It is known that the Springbokflats has been occupied by humans from the earliest times. However, no evidence exists which indicate that the area was occupied by particular groups of people (cultures) over a considerable long period of time. It can therefore be expected that heritage remains which may occur will be fragmentary and scattered across the Eskom Project Area. It can also be expected that only a narrow range of all the types and ranges of heritage resources that are outlined in the National Heritage Resources Act (No 25 of 1999) will actually occur in the area but not necessarily in the Eskom Project Area itself.

The following brief overview of archaeological (pre-historical), cultural and ethnographic information, as well as historical evidence, will help to contextualise the Eskom Project Area within the wider area.

### **5.1 Stone Age sites**

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or that are parts of the deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (ESA) (dating from 2.5 million years ago to 250 000 years ago), Middle Stone Age (MSA) (dating from 250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (dating from 22 000 years ago to about 2 000 years ago).

The ESA is divided into the Olduvian and the Acheulian Industrial Complexes. The Acheulian dates from 500 000 years ago and is widely distributed across the world. Tools dating from the Acheulian also occur throughout South Africa. It is highly likely that Acheulian sites may exist in woody areas such as Buffelsdrift 179JR and Rust de Winter 180JR where the Elands River flows along the southern base line of a mountain range outside the southern borders of the Eskom Project Area.



MSA sites are the most common types of Stone Age sites which occur throughout South Africa. These sites are either associated with caves or with 'open' sites, i.e. with sites which occur on the surface of the earth. It can be expected that MSA sites may occur in eroded areas, dry dongas or ploughed agricultural fields that occur across the Eskom Project Area.

The LSA is associated with small microlithic tools, rock paintings and engravings which were done by the San, Khoi Khoi and, in more recent times, by Negroid (Iron Age) farmers. LSA sites, like MSA artefacts, occur in cave sites or as scatters of tools on the surface of the earth. These types of artefacts may also be found in areas which have experienced erosion or where rock types, suitable for the manufacture of small LSA artefacts, abound.

## **5.2 Early Iron Age**

The Iron Age is associated with the first Bantu-Negroid agro-pastoralists who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is divided into the Early Iron Age (EIA) (covers the 1<sup>st</sup> millennium AD) and the Later Iron Age (LIA) (covers the first 880 years of the 2<sup>nd</sup> millennium AD).

EIA communities lived near Groblersdal, to the east of the Eskom Project Area. These communities were culturally similar to the EIA communities who lived elsewhere in the Mpumalanga, Limpopo, KwaZulu/Natal and the North-West Province during the AD600-900. Early Iron Age sites have been recorded near Marble Hall, in the Loskop Dam Nature Reserve and to the north of the Loskop Dam.

The presence of an EIA site was also recorded on the farm Derdepoort 326, north of the Magaliesberg but far to the south of the Eskom Project Area.

### 5.3 Late Iron Age and historical remains

The Late Iron Age (LIA) is associated with ethnic groups such as the Tswana, Pedi, Ndebele, Zulu, Venda and other groups. Settlements that date from the LIA are mostly associated with stone walls and date from the last four hundred years. Large parts of the Project Area are devoid of conspicuous mountain ranges, 'randjes' or kopjes where stone walled sites could have been established. However, the Ditlhabane mountain range which incorporates the Simon Skosana and the Mabusa Nature Reserves, occur to the south of the Eskom Project Area. The mountainous terrain in these nature reserves may hold LIA sites.

According to oral tradition LIA clans occupied the Eskom Project Area prior to the arrival of the first Colonists in the middle of the 19<sup>th</sup> century. These people include the Kgatla of Motša who lived at Marapjane (Schilpadfontein) (to the north of the Eskom Project Area) from as early as the 17<sup>th</sup> century and possibly Koni clans related to Matlala and Dikgale (to the east and south of the Eskom Project Area) who established villages with similar names in the larger project area, probably more than two centuries ago, AD1790-1800. None of the early settlements that were occupied by these people have been documented. There are a few low, inconspicuous kopjes between Masobe (Pankop) and Mmametlhake as well as near Seabe and Marapjane, to the north of the Eskom Project Area, where settlements constructed with stone walls may be found.

Larger tribal groupings such as the Bantwane, Bakôpa and Bakgatla lived towards the Loskop Dam and Groblersdal in the east, outside the Eskom Project Area, whilst the Hwaduba and Kgatla Môsêtla and Kgatla Motša/Mmakau lived towards the north and west, also outside the Eskom Project Area. Consequently, no large tribal groupings occupied the Eskom Project Area during the LIA. People who lived here during the last four hundred years must have been limited to small groups or clans who did not establish large permanent settlements with formidable proportions.

These small scattered groups in the Eskom Project Area were joined by the (Southern) Ndebele who arrived in this area from the 1920's onwards. The sojourn of the Southern Ndebele peoples, who initially left Kwa Zulu/Natal during the 16<sup>th</sup> century, ended in the

Eskom Project Area when the Manala and the Ndzundza- Ndebele left their respective homes near the Bronberg in Pretoria and KoNomtjarhelo (Erholweni) near Roosenekal during the early 20<sup>th</sup> century. KwaNdebele officially became the homeland of the Southern Ndebele in the 1980's. The Eskom Project Area therefore is today primarily occupied by descendants of the following sections of the Ndebele, namely the Manala, Ndzundza-Ndebele and the Hwaduba. Historically, the Eskom Project Area has not been occupied for much longer than a century by substantial numbers of Ndebele people. Small groups and clans of the Kgatla, Koni and other minor Sotho communities also lived in the area but for a longer period of time.

Some individually known Ndebele sites outside the Eskom Project Area include Komjekejeke on Downbern 594 near Wallmansthal, north of Pretoria, and KwaMkina on Derdepoort 326, also north of Pretoria. KwaMkina has disappeared as this area has been developed in the more recent past. Kwamhlanga is located on Welgelegen 158 JR in the former KwaNdebele homeland.

## 6 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

### 6.1 The heritage field survey

#### 6.1.1 Alternative 01

The Phase I HIA survey is now briefly discussed and illuminated with photographs.



**Figures 3 & 4- Stretches AB and BC for Alternative 01 runs from the Rust de Winter Substation and enters the Rust de Winter Nature Reserve (above and below).**



**Figures 4 & 5- Stretch BC for Alternative 01 runs in a straight line following one of Eskom's existing 400kV power lines across the farms Kameelrivier 77JR and Kliprand where no heritage resources of significance were observed (below).**





**Figures 5 & 6- Stretches CD and EF initially crosses the national road running to Hammanskraal (above) and thereafter runs along the border fence between Kliprand 76JR and Haakdongfontein 35JR to the existing Pelly-Warmbad backbone (below).**





### 6.1.2 Alternative 02

Alternative 02 runs along the following stretches, namely:



**Figures 7 & 8- Stretch GHI follows the southern shoulder of the national road that runs between Pienaarsrivier and Rust de Winter whilst Stretch IJF runs southwards across the farm Kliprand 76JR following Eskom's existing Pelly-Warmbad power line (above and below).**



## **6.2 Types and ranges of heritage resources**

The Phase I HIA study for the proposed Eskom Project did not reveal the presence of any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Eskom Project Area.

There is consequently no reason from a heritage point of view why the Eskom Project should not continue.

Both Alternative 01 as well as Alternative 02 seem to be suitable from a heritage point of view for the construction of the new 132kV power line between the Pelly-Warmbad backbone and the Rust de Winter Substation.

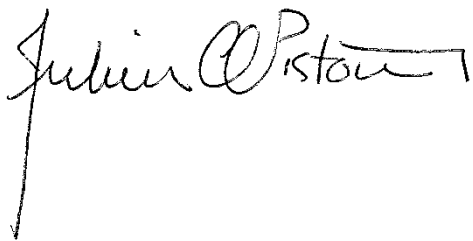


## **7 CONCLUSION AND RECOMMENDATIONS**

The Phase I HIA study for the proposed Eskom Project did not reveal the presence of any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Eskom Project Area.

There is consequently no reason from a heritage point of view why the Eskom Project should not continue.

Both Alternative 01 as well as Alternative 02 seem to be suitable from a heritage point of view for the construction of the new 132kV power line between the Pelly-Warmbad backbone and the Rust de Winter Substation.

A handwritten signature in black ink, reading "Julius CC Pistorius". The signature is written in a cursive style with a long vertical line extending downwards from the 'J'.

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