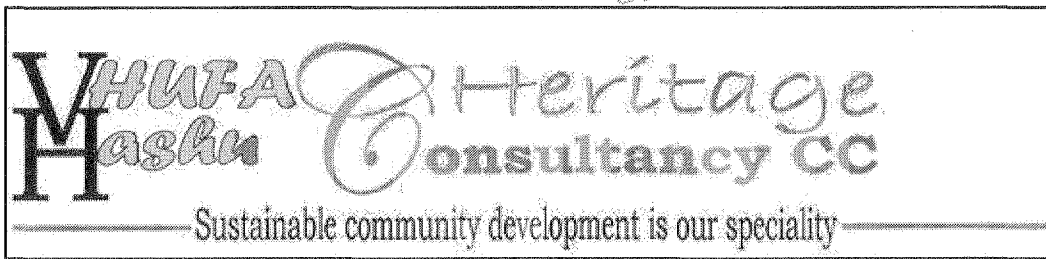


CaseID: 2063



ARCHAEOLOGICAL IMPACTS ASSESSMENT PROCESS

PROPOSED NEW 132KV POWER LINE FROM GEMSBOK SUBSTATION TO BIG TREE SUBSTATION VIA THE KWA- MHLANGA SUBSTATION, THEMBISILE HANI LOCAL MUNICIPALITY IN MPUMALANGA PROVINCE

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Executive Summary

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Note: This report follows minimum standard guidelines required by the South African Heritage Resources Agency (SAHRA) for compiling Archaeological Impact Assessment (AIA).

Site name and location: Proposed new 132kv power line from Gemsbok substation to Big tree substation via the Kwa-Mhlanga substation, has been proposed within the close proximity of Kwa Mhlanga Central Business District within Thembisile Hani Local Municipality of the Nkangala District of Mpumalanga Province, SA.

Local Authority: Thembisile Hani Local Municipality

Magisterial Authority: Nkangala District Municipality

Developer: Eskom (PTY) Limited

Date of field work: 31 July 2012

Date of report: August 2012

SURVEY AIMS AND ASSESMENT FINDINGS

The Phase 1 Archaeological scoping study (Archaeological Impacts Assessment as required in terms of section 38 of the National Heritage Resource Act (Act 25 of 1999) was done for the proposed Eskom power line establishment within Thembisile Hani Local Municipality of the Nkangala District, Mpumalanga Province, South Africa

The aims with the Phase1 Archaeological Impacts Assessment (AIA) program were the following:

- To establish whether any of the type and ranges of heritage resources as outlined in section 3 of the National Heritage Resources Act (Act 25 of 1999) do occur in or near the proposed power line route, and if so, to establish the significance of these heritage resources.

- To establish whether such heritage resources will be affected by the proposed development activities, and if so, to determine possible mitigation measures that can be applied to these heritage resources.

The phase 1 heritage impacts assessment survey for the proposed Eskom power line establishment revealed a large formal cemetery; farm homesteads with historical buildings and associated burial grounds, the age of the graves could not be established since there was no access into the burial ground site. (See sites location on the table below). Approximately 53 graves have been identified and geo-referenced. All the identified sites fall outside the proposed power line development corridors.

The location details and the field survey findings are presented in a Table below.

SITES	GPS-CO-ORDINATES	CULTURAL HERITAGE SITE TYPE
Site No. 001	S25°.29'.22.2" & E28°.39'.39.6"	Large formal cemetery
Site No. 002	S25°.26'.44.0" & E28°.36'.55.6"	Remains of farm homestead (historical houses) with associated Grave yard.

Sites significance

The significance of the identified burial ground sites has been indicated by means of stipulations derived from the National Heritage Resources Act (Act No 25 of 1999). Although identified site is situated on the outside of the proposed development routes foot print corridors it is important to note its location in case Eskom decide to realign its route, therefore the following should be taken in to account:

- *Informal graves and Formal grave yards (Cemeteries)*

Informal and formal grave yards (Cemeteries) can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (no 25 of 1999) this act applies whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regards to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on exhumation (Ordinance no 12 of 1980) and the Human Tissue Act (Act no 65 of 1983 as amended).

- *Historical structures, foundations, and stone walling sites.*

Old structures can be considered to be of Historical significance and are protected by section 34(1) of the National Heritage Resources Act (no 25 of 1999). **Section 34(1)** 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.

It should be made clear that the above mentioned sites should not be impacted and should be treated as “No go area”. We strongly recommend that these sites be left undisturbed and intact. The following mitigation measures are recommended for the identified sites and burial grounds. The developer in this regards ESKOM PTY (LTD) should take note of their location and the construction planning team should ensure that a small management plan is set in place to ensure their future safety. All project activities should be altered and should be planned around these sites. In order to protect them from any damage or other cumulative impacts that may occur during power line construction phase. The recommendations provided and outlined on this report should be followed and adhered to as appendices of the Environmental management Plan program of the constructions phase. Should the recommendation followed, there are no objections to the proposed power line project and we recommend to Provincial Heritage Resources Authorities (PHRA) to approve the project as planned.

Acknowledgements:

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PROFESSIONAL DECLARATION

I, the undersigned, Mr. Mathoho Ndivhuho Eric hereby declare that I am a Professional Archaeologist Accredited with the Association for South African Professional Archaeologist (ASAPA) Membership No 312 and that Vhufashu Heritage Consultants is an independent consultants with no association or with no any other interest what so ever with any institution, organization, or whatever and that the remuneration earned from consulting work constitute the basis of Company livelihood and income.



.....
Mr. Mathoho Ndivhuho Eric

Archaeologist and Heritage Consultant for Vhufashu Heritage Consultants
ASAPA Member

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1. INTRODUCTION

Eskom LTD (PTY) commissioned studies for the Proposed new 132kv power line from Gemsbok substation to Big tree substation via the Kwa-Mhlanga substation, has been proposed within the close proximity of Kwa Mhlanga Central Business District within Thembisile Hani Local Municipality of the Nkangala District of Mpumalanga Province, SA. Limpopo Water Initiative (PTY) Limited was appointed to handle environmental aspects of the proposed project. They appointed Vhufahashu Heritage Consultants to conduct an Archaeological and Cultural Heritage Impact Assessment study as part of the Environmental Impact Assessment (EIA) for the proposed project.

The proposed activities form part of the development process, where application for Environmental Assessment Authorization must be completed. The heritage impact assessments report form part of a series of appendices prepared for Environmental Impact Assessment (Full EIA) Report to be submitted to the National Department of Environmental Affairs (DEA) in support of the application as amended by the National Environmental Management (NEMA) Act no 107 of 1998. In terms of regulation 54 subsection 2(c)(i) of the regulation published in the Government Notice no R543 of 2010, in terms of section 24(5) read with section 44 of the Act. The project has been assigned NEAS reference no. DEA/EIA/000/339/2012 and DEA reference no.14/12/16/3/3/1/646. Information presented in this report form the basis of heritage resources assessment of the proposed project as the proposal constitutes an activity, which may potentially be harmful to heritage resources that may occur in the proposed demarcated area.

The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (section 34), archaeological sites and material (section 35) graves and burial sites (section 36). In order to comply with legislations, the Applicant requires information on the heritage resources, and their significance that occur in the demarcated area. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for the study with regards to the protection of heritage resources and graves.

2.1. The National Heritage Resource Act (25 of 1999)

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodians of the heritage resources and makes provision for the undertaking of heritage resources impact assessment for various categories of development as determined by section 38. It also provides for the grading of heritage resources (section 7) and the implementation of a three-tier level of responsibility and functions from heritage resources to be undertaken by the State, Provincial and Local authorities, depending on the grade of heritage resources (section 8)

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

Historical remains

Section 34 (1) 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.

Archaeological remains

Section 35(3) Any person who discover archaeological or palaeontological object or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum, which must immediately notify such heritage resources authority.

Section 35(4) 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 any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- trade in ,sell for private gain, export or attempt to export from republic any category of archaeological or palaeontological material or object or any meteorite; or
- bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

Section 35(5) When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order
- carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two week of the order being served.

Subsection 35(6) the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

Section 36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (i) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (ii) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36 (6) Subject to the provision of any person who in the course of development or any other activity discover the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to

the responsible heritage resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (l) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this act or is of significance to any community; and

if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Cultural Resource Management

Section **38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development*...

- must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

development 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 a 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 of use of a place or a structure at a place;
- (ii) Any change to the natural or existing condition or topography of land, and
- (iii) Any removal or destruction of trees, or removal of vegetation or topsoil;

place means a site, area or region, a building or other structure

structure means any building, works, device or other facility made by people and which is fixed to the ground.

2.1. The Human Tissue Act (65 of 1983)

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the

exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

3. TERMS OF REFERENCE

The terms of reference for the study were to undertake an archaeological impacts assessment on the proposed power line and associated substation establishment project and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

4. TERMINOLOGY

The Heritage impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage resources Act, 1999 (Act No 25 of 1999). Heritage resources, (Cultural resources) include all human-made phenomena and intangible products that are 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 lifestyle of the people or groups of people of South Africa.

The term '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 South Africa by the first colonist who settled in the Cape in the early 1652 and brought to the other different part of South Africa in the early 1800.

The term 'relatively recent past' refers to the 20th 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.

It is not always possible, based on the observation alone, to distinguish clearly between archaeological remains and historical remains or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floors plans (a historical feature) may serve as a guideline. However circular and square floors may occur together on the same site.

The 'term sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognized and honored whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the historical period. The Stone Age is divided into an Early Stone Age (3Million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years ago to 40 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Early Iron Age' and Late Iron Age respectively refers to the periods between the first and second millenniums AD.

The 'Late Iron Age' refers to the period between the 17th and the 19th centuries and therefore includes the historical period.

Mining heritage sites refers to old, abandoned mining activities, underground or on the surface, which may date from the pre historical, historical or relatively recent past.

The term 'study area' or 'project area' refers to the area where the developers wants to focus its development activities (refer to plan)

Phase I studies refers to survey using various sources of data in order to establish the presence of all possible types of heritage resources in a given area.

Phase II studies includes in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include documenting of rock art, engravings or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavation of archaeological sites; the

exhumation of bodies and the relocation of grave yards, etc. Phase II work may require the input of specialist and require the co-operation and the approval of SAHRA.

5. METHODOLOGY

Source of information

Most of the information was obtained through the initial site visit made on the 31 July 2012, where a systematic inspection of the proposed alternative routes and associated substation site was covered along linear transects which resulted in the maximum coverage of the proposed alternatives. Standard archaeological observation practices were followed; Visual inspection was supplemented by relevant written source, and oral communications with local communities from the surrounding area. In addition, the site was recorded by hand held GPS and plotted on 1:50 000 topographical map. Archaeological/historical material and the general condition of the terrain were photographed with a Canon 1000D Camera.

6. ASSESSMENT CRITERIA

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites were based on the following criteria:

- The unique nature of a site
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.)
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site
- The potential to answer present research questions.

6.1 Site Significance

The site significance classification standards as prescribed and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development

Community (SADC) region, were used as guidelines in determining the site significance for the purpose of this report.

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)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction

Grading and rating systems of heritage resources

6.2 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the public or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are real, but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or

social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people living some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a certain formation may be regarded as severe from a geological perspective, but is of NO SIGNIFICANCE in the overall context.

6.3 Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact, or of the likelihood of an impact occurring.

6.4 Duration

SHORT TERM : 0 – 5 years

MEDIUM: 6 – 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

6.5 Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- **A** – No further action necessary
- **B** – Mapping of the site and controlled sampling required

- C – Preserve site, or extensive data collection and mapping required; and
- D – Preserve site

7.1. REGIONAL SETTING: ARCHAEOLOGY AND HERITAGE.

Archaeological material finger print remains such as potsherd and stone walls suggest the presence of ethnic groups in the study area. The area was occupied long before arrival of colonialist. The Transvaal specifically Pretoria and Bronkhorstspuit area inherit its cosmopolitan vitality from an often violent and turbulent past currently represented by grave sites as a results of many battle fields which were fought between different groups of people. Many grave sites, monuments, buildings and stone walls have scattered throughout the study area bearing witness to the challenges faced by different groups of people. The late Iron Age(LIA) settlement are characterized by stone walled enclosures situated on defensive and promontory hills (especially c A.D.1640-A.D.1840)The occupation phase has been linked to the arrival of the Northern Sotho, Tswana and the Ndebele in the region dated to the sixteenth to the seventeenth century A.D. The terminal LIA is represented by late 18/early 19th century settlement with Multichrome, Moloko Pottery commonly attributed to the Sotho-Tswana. The multichrome pottery fragments correlates very well with oral traditions about various people who sought refuge in the mountain and hilly slopes during the process of disruption in the northern interior of South Africa.

The presence of the Transvaal Ndebele in the study area has been suggested by early researcher and historians as the descendents of the fraction who parted from the main Nguni-speaking migration along the eastern part of southern Africa. Oral history suggests an early (c. late 1500) settlement in the interior, to the immediate north of present-day Pretoria, under a founder ruler called Musi. A succession struggle among Musi's sons is a probable explanation for the two foldsplit in clans and the resultant two main tribal categories, Ndzundza and Manala. The twofold split resulted in clans associating themselves with one of the two groups. The majority of clans followed Ndzundza, who migrated to KwaSimkhulu, approximately 200 kilometers east of present-day Pretoria. The numerically smaller Manala occupied the areas called Ezotshaneni, KoNonduna, and Embilaneni, which include what are today the eastern suburbs of Pretoria.

The Ndzundza chieftaincy is believed to have extended its boundaries along the Steelpoort (Indubazi) River catchment area between the 1600s and early 1800s. Several

of these settlement sites (KwaSimkhulu, KwaMaza, and Esikhunjini) are known through oral history and are currently under archaeological investigation.

Both the Ndzundza and Manala chiefdoms were almost annihilated by the armies of Mzilikazi's Matebele (Zimbabwean Ndebele) around 1820. During the Difaqane in Natal, another band arrived in the Pretoria region, they were forced to abandon their villages in flight from a regiment of Zulu raiders in 1832. The Manala in particular suffered serious losses, but the Ndzundza recovered significantly under the legendary Mabhoko, during the 1840s. He revolutionized the Ndzundza settlement pattern by building a number of impenetrable stone fortresses and renamed the tribal capital KoNomtjharhelo (later popularly known as Mapoch's Caves). During the middle 1800s, the Ndzundza developed into a significant regional political and military force.

They soon had to face the threat of White colonial settlers, with whom they fought in 1849, 1863, and, finally, in 1883, during the lengthy Mapoch War against the ZAR forces. The latter's tactic of besiegement forced the famine-stricken Ndzundza to capitulate. They lost their independence, their land was expropriated, the leaders were imprisoned (Chief Nyabela to life imprisonment), and all the Ndebele were scattered as indentured laborers for a five-year (1883-1888) period among White farmers. The Manala chiefdom was not involved in the war and had previously (1873) settled on land provided by the Berlin Mission, some 30 kilometers north of Pretoria, at a place the Manala named KoMjekejeke (Wallmansthal).

Chief Nyabela Mahlangu was released after the Anglo-Boer War (1899-1902) in 1903 and died soon afterward. His successor tried fruitlessly in 1916 and 1918 to regain their tribal land. Instead, the royal house and a growing number of followers privately bought land in 1922, around which the Ndzundza-Ndebele reassembled. Within the framework of the Bantustan or homeland system in South Africa, the Ndebele (both Manala and Ndzundza) were only allowed to settle in a homeland called KwaNdebele in 1979. This specific land, climate, and soil were entirely alien to them.

7.2. THE BRONKHORSTPRUIT AMBUSH

During the Anglo Boer war of 1880, commonly known as the war of independence, there was a disaster suffered by the British at Bronkhorstspuit. The British were attacked on the road from Lydenburg to Pretoria, during that period the British had had several warnings that they could expect to be attacked. Sir Owen Lanyon underestimated the Boer commando, and was quoted on one influential document maintaining that the Boer were in

capable of any united action and they were moral cowards. The Boer regiments relied on standing army and its citizen of the Transvaal republic. The British were unaware of the unrest and military attitude that had suddenly developed; the Transvaal had requested permission to bring additional troops to Pretoria. Sir Owen Lanyon requested some assistance from army company 94, before those army regiments were sent in, hostility broke up, before movements were completed, the Boer commandos resume march, Two British scouts pointed at the party of the Boer and as such the British ignores them as the Boer surrounded them at approximately 1,5KM away from a small spruit, known as Bronkhorstspruit, a British band stop playing, inquiring heads were turned and it was established that there were 150 Boer regiments on the crest of a low ridge, the British wanted to proceed with their journey to Pretoria, After messenger returned to deliver answers to commandant Frans Joubert, heavy firing commences, historical source maintains that the war lasted for only short time, the Boer regiments closed in on the British wagon and also surrounded the rearguard. The Boer was very keen by advancing and surrounding from flank as well as front and rear. Casualties on the British side were high, an indication that the Boer fire were accurate and heavy, though figure vary considerably approximately 77 were killed and a total of 157 casualties excluding prisoner taken by the Boers. Commandant Frans Joubert ordered his men to take the wagon of the British but granted permission for the removal of the tents and blankets for the establishment of the wounded camps, he also allowed twenty of the wounded to bury the dead, and the remainder of the wounded were taken prisoner and later were released. A monument have been erected in commemoration of the British troops who lost their lives on their way to Pretoria

8. SITE LOCATION AND PROJECT DESCRIPTIONS

Eskom proposed to develop and establish ±15 kilometers long 132kv power line from Gemsbok substation to Big tree substation and associated new substation, in close proximity to Kwa Mhlanga Central Business District of the Thembisile Hani Local Municipality of the Nkangala District, Mpumalanga Province.

Three proposed power line options/alternative routes where identified by Eskom (LTD, PTY). All identified alternatives routes transverse through agricultural farm land that encompasses ploughing fields, animal husbandry (livestock grazing area), across gravel, tarred roads, perennial / non perennial stream and watershed /wetland. Generally the proposed power line cut across farms such as Hartebeestspruit 235JR, Prinsanna 234JR, Klipspruit 245JR, Zusterhoek 246JR, Graslaagte 232JR, most of which has been Assessments of the proposed 132kv Power line from gemsbok substation to Big tree substation via the Kwa-Mhlanga substation. 13

placed under agricultural potential influenced by the presence of flat and slope section of land coupled by the availability of good soil and the presence of good grass dominated by grass species such as *Themeda triandra* and *Eragrostis racemosa*, The most dominant tall tree species identified on some of the farms includes, *black wattle* and *eucalyptus* patches or small holding plantations.

Acocks (1975) some of the natural Vegetation which dominate the upper and lower lying area can be classified under mixed bushveld complex characterized by species such as: *Bridelia mollis*, *Euclea Crispa & divinorum*, *Rhus leptodicta*, *Ozonia insignis*, *Vanguina Gyanenscens*, *Acacia karoo*, *Sclerocarrya beria*, *Ziziphus mucronata*, *Dichrostachys cineria* etc.

The proposed project entails the following elements:

- Construction of ± 15 kilometers 132kV king Bird power line from Big tree substation to the proposed new Kwa Mhlanga substation.
- Establishment of a new Kwa Mhlanga 132/22kV 2x20MVA substation and constructions of 2x 132kV and 6x 22 kV feeder bays.
- Establishment of a 132kV feeder bay in Gemsbok substation and build a 14km 132kV king Bird new Kwa Mhlanga substation to Gemsbok substation
- Conversion 11kV network to 22kV, replace 238 11kV/400V transformers with 22kV/415V.
- Swing Kwa Mhlanga MV networks to the new kwa Mhlanga 132/22kV substation. Dismantle existing Kwa Mhlanga substation which is located alongside the main tarred road from Bronkhorstspruit to Libangeni, the area is located just several kilometers north east of Solomon Mahlangu Stadium (GPS S 25°, 25', 39, 3" and E28°, 43'.14, 1".) 33/11kV and kwa Mhlanga to Gemsbok 33kV line..

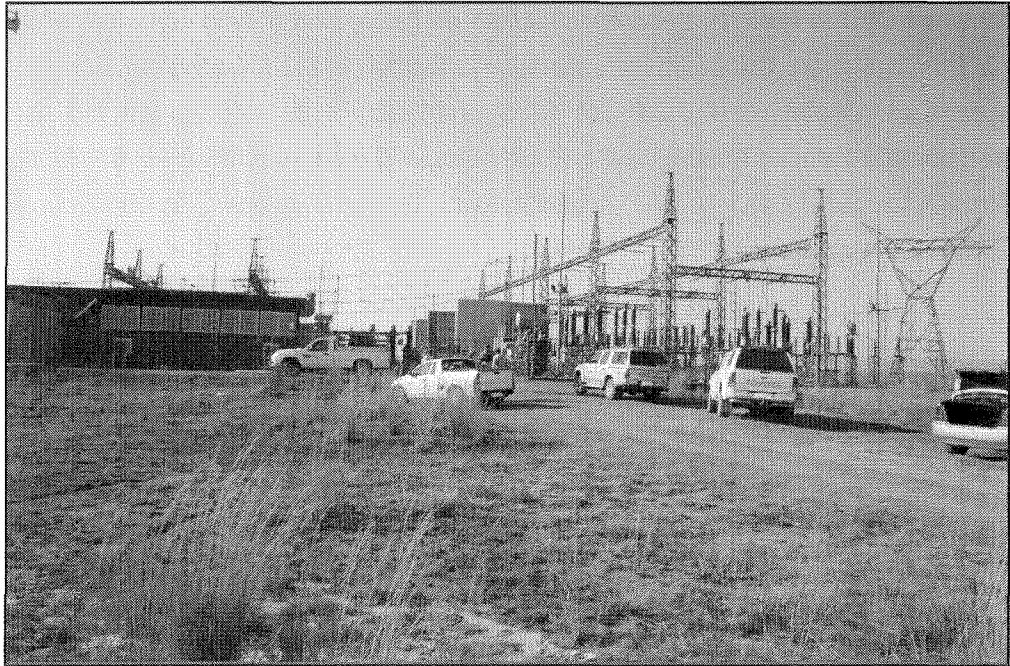


Figure 2: View of the Gemsbok substation towards the southern section

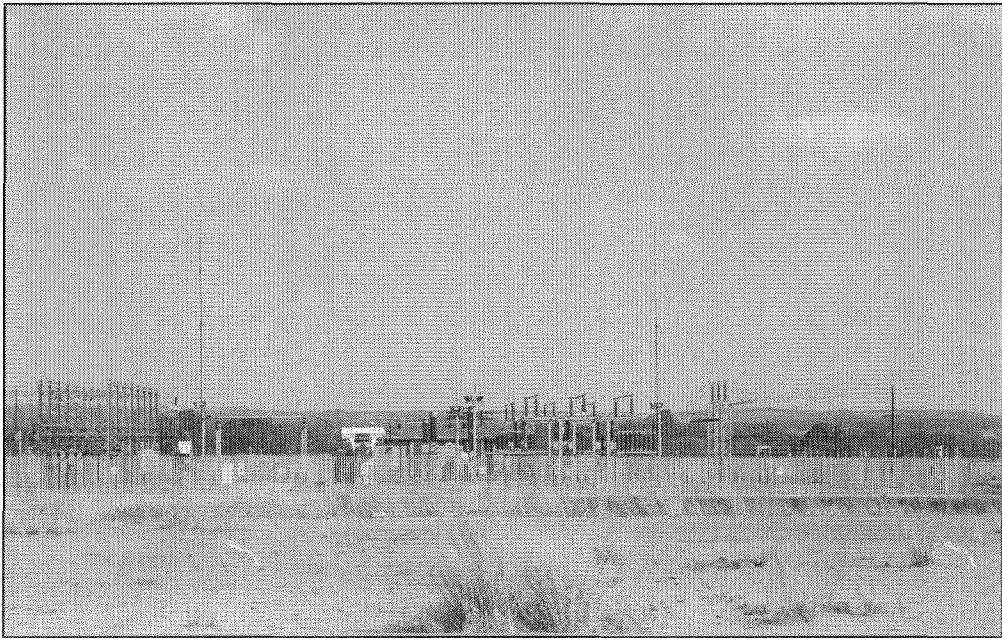


Figure 3: View of the Big tree substation towards the western section

8.1 PROPOSED OPTION ONE (1) SUBSTATION SITE

Option one (1) Substation site has been proposed south of Moloto Tarrred road from Kwa Mhlanga CBD to Pretoria, the area is located on flat section of land currently covered by natural vegetation. The proposed substation is located at the following global positioning system coordinates (GPS S 25°, 25', 12, 5" and E28°, 41'.26, 7.") Some of the identified tree species included *Bridelia mollis*, *Euclea Crispa & divinorum*, *Rhus leptodicta*, *Ozoroa insignis*, *Vanguina Gyanenscens*, *Acacia karoo*, *Sclerocarrya beria*, *Ziziphus mucronata*, *Dichrostachys cineria*.

Further south of the proposed site an existing well fenced sewage plant has been noticed, characterized by existing sewage ponds. Section of the site is currently used as garbage refusal area, represented by plastics and concrete rubble. Eskom has proposed this area as the most preferred site for the substation establishment. .No further studies/Mitigations are recommended for the proposed project and there is no archaeological or place of historical significance that will be impacted by the proposed establishment project.

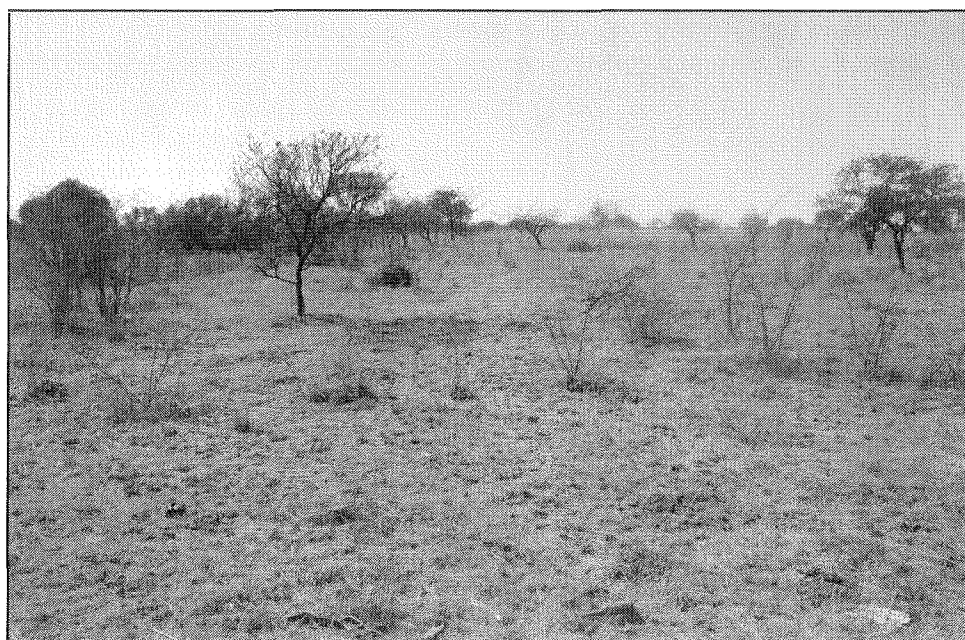


Figure 4: The proposed substation option no 1 indicated by an arrow

8.2. PROPOSED OPTION TWO (2) SUBSTATION SITE

Option two (2) Substations site has been proposed several kilometers west of Kwa Mhlanga Government Complex, the area is situated in between an existing concrete reservoir and existing telecommunication masts which are located on top of a rocky outcrop promontory hill. The proposed substation is located at the following global positioning system coordinates (GPS S 25°, 26', 38, 1" and E28°, 42'.34, 9".) on a slightly undulated section of land. Some of the identified tree species included *Bridelia mollis*, *Euclea Crispa & divinorum*, *Rhus leptodicta*, *Ozoroa insignis*, *Vanguina Gyanenscens*, *Acacia karoo*, *Sclerocarrya beria*, *Ziziphus mucronata*, *Dichrostachys cineria*. No further studies/Mitigations are recommended for the proposed project and there is no archaeological or place of historical significance that will be impacted by the proposed establishment project.

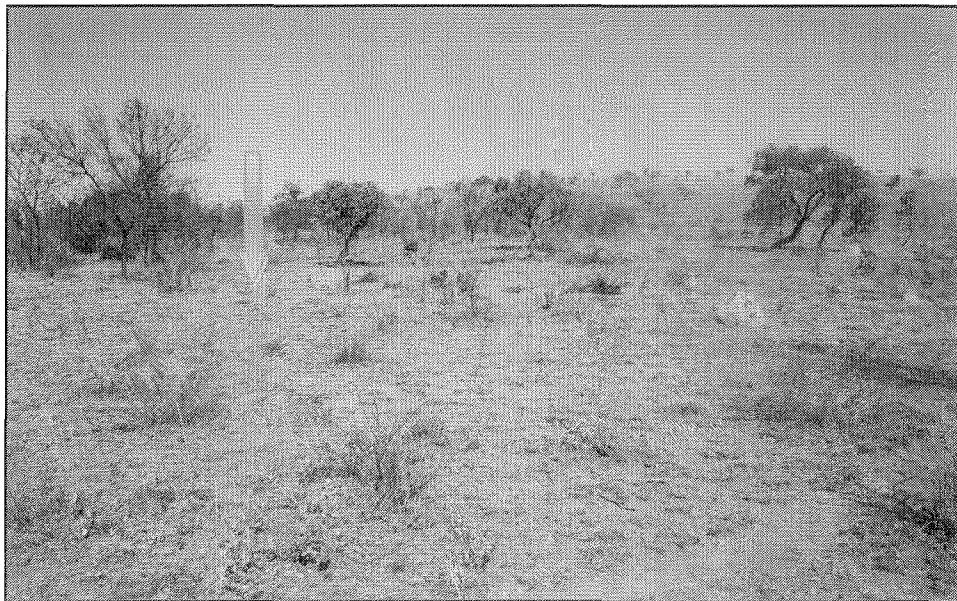


Figure 5: Proposed substation option 2 site indicated by an arrow, note the telecommunication mast at a distance located on top of a slope at the photo background.

8.3. PROPOSED OPTION THREE (3) SUBSTATION SITE

Option three (3) Substation site has been proposed on the western edge of the existing Moloto stands, the area is situated approximately 3 kilometers west of the existing Gemsbok substation. The area is located on flat section of land currently covered by grass very few scattered trees were noted. The proposed substation is located at the following global positioning system coordinates (GPS S 25°, 25', 58, 4" and E28°, 46'.00, 2.") No further studies/Mitigations are recommended for the proposed project and there is no

archaeological or place of historical significance that will be impacted by the proposed establishment project.

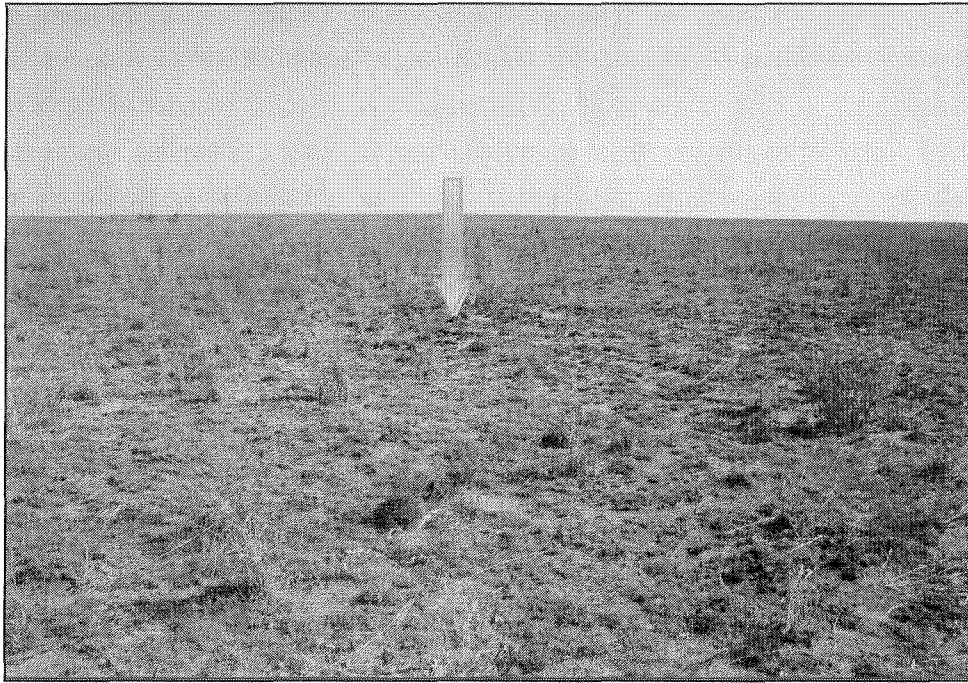


Figure 6: Proposed substation option 3 site indicated by an arrow

8.4. PROPOSED POWER LINE ROUTE OPTION ONE (1)

Option one (1) has been proposed on the existing power line servitude which start at Gemsbok substation. The Gemsbok substation is located approximately 6,3kilometres south west of the main tarred road from Kwa Mhlanga to Marble hall situated at the following global positioning system coordinates: (GPS S 25°, 25', 53,0" and E28°, 48'.44, 3".)

The proposed power line route transverse west of Gemsbok substation, south of the access gravel road, through animal grazing area parallel the proposed alternative option 2 as well as existing 132kv power lines. At some stage the proposed power line option1 changes its direction cutting across gravel road west of the *Eucalyptus* plantation and Moloto residential stands. At some stage the proposed power line route cut across the main tarred road from Bronkhorstspuit to Kwa Mhlanga through a slope, connecting the proposed substation option 2 which is located on top of a slope adjacent to the big concrete reservoir which is located western section of the Kwa Mhlanga government

complex, down the valley south of Moloto road where the proposed alternative option 1 substation has been earmarked.

From the proposed substation option 1 the proposed power line transverse across the main road R568 through farm land across existing power line adjacent to Khayalami/ Zenzele/ Enkeldoornoog, across a perennial stream until the proposed power line route connect with existing Big tree substation.

8.5. PROPOSED POWER LINE ROUTE OPTION TWO (2)

Just as described above, the proposed power line option two (2) route starts at Gemsbok substation, transverse west on an existing power line servitude, parallel option 1 at some stage the proposed power line route deviate from the existing power line servitude, changing direction just after crossing the main gravel road, through grass land area west of Moloto residential area across watershed area as well as the main tarred road from Bronkhorstspuit to Kwa Mhlanga area. On farm Prins Anna 234 JR, the proposed power line route turns towards the proposed substation site (option 2) behind the Kwa Mhlanga government complex. Still at the same farm (Prins Anna 234 JR) both proposed power line routes (Option 1,2,3) transverse parallel to each other up until the proposed option 1, deviate and run further adjacent to the built environment, here the proposed power line option 1 and 2 maintain the same route until they connect to the existing Big tree substation.

8.6. PROPOSED POWER LINE ROUTE OPTION THREE (3)

Option three (3) has been proposed on the existing power line servitude which start at Gemsbok substation. The proposed power line route transverse north east of Gemsbok substation stretching through animal grazing area running parallel existing 22kv power line. At some stage the proposed power line route cut across the gravel road through disturbed land, characterized by mound of stockpile soil and watershed area, south of Moloto residential stands, just west of Moloto stands the proposed power line connect with the proposed substation option 3. It is here where the proposed power line changes is route running parallel an existing 132kv power line, just further south of the newly demarcated stands, through a rocky outcrop ridge, characterized by sparse vegetation distribution, running parallel tarred road through the slope on farm Prins Anna 234 JR, the proposed power line route turns towards the proposed substation site (option 2) behind the Kwa Mhlanga government complex. Still at the same farm (Prins Anna 234 JR) both

proposed power line routes (Option 1,2,3) transverse parallel to each other up until the proposed option 1, deviate and run further adjacent to the built environment, here the proposed power line option 1 and 2 maintain the same route until they connect to the existing big tree substation.

9. ASSESMENT OF SITES AND FINDS

This section contains the results of the heritage sites/find assessment. The phase 1 heritage scoping assessment program as required in terms of the section 38 of the National Heritage Resource Act (Act 25 of 1999) was done for the proposed project.

9.1. (SITE001) LARGE FORMAL CEMETERY

The site is located at the following global positioning system co-ordinates (GPS S25° .28' 53.7" & E 28° .39' .39.8"). The cemetery is situated approximately 250 meters North east of the main gravel road which connect Moloto road from the southern section, the area can be identified by two large *Eucalyptus* trees, approximately 1000 grave were noticed most of which has been indicated by granite tombstones while others were indicated by oval parked stones as grave dressing.



Figure 7: One of the identified large formal cemetery, indicated by two large *Eucalyptus* trees

9.2. (SITE002) FARM HOME STEAD AND ASSOCIATED BURIAL GROUND

The site is located at the following global positioning system co-ordinates (GPS S25° .26'.44.0" & E 28° .36'.55.6"). The site is located further north west of the existing perennial stream, characterized by scattered built environment of the farm home stead's. Access to the site is situated further west of the site indicated by a linear occasional *eucalyptus* trees which occur on both sides of the gravel road. Approximately ten(10) house remains, abandoned ruins, characterized by main farm houses, and associated outbuildings, remains of several bore holes, concrete reservoirs , remains of charred big *Eucalyptus tree*. Some of the buildings architectural materials, such as building elements and ornament, fixtures and fittings have been removed, that could have assisted in determining the age and style of the buildings, some of the structures are in such a condition that they could not be properly assessed. Further west of the identified buildings a well fenced burial ground was noticed and geo-referenced with approximately 53 clusters of graves, some of the graves have been indicated by Granite tomb stones as dressings.

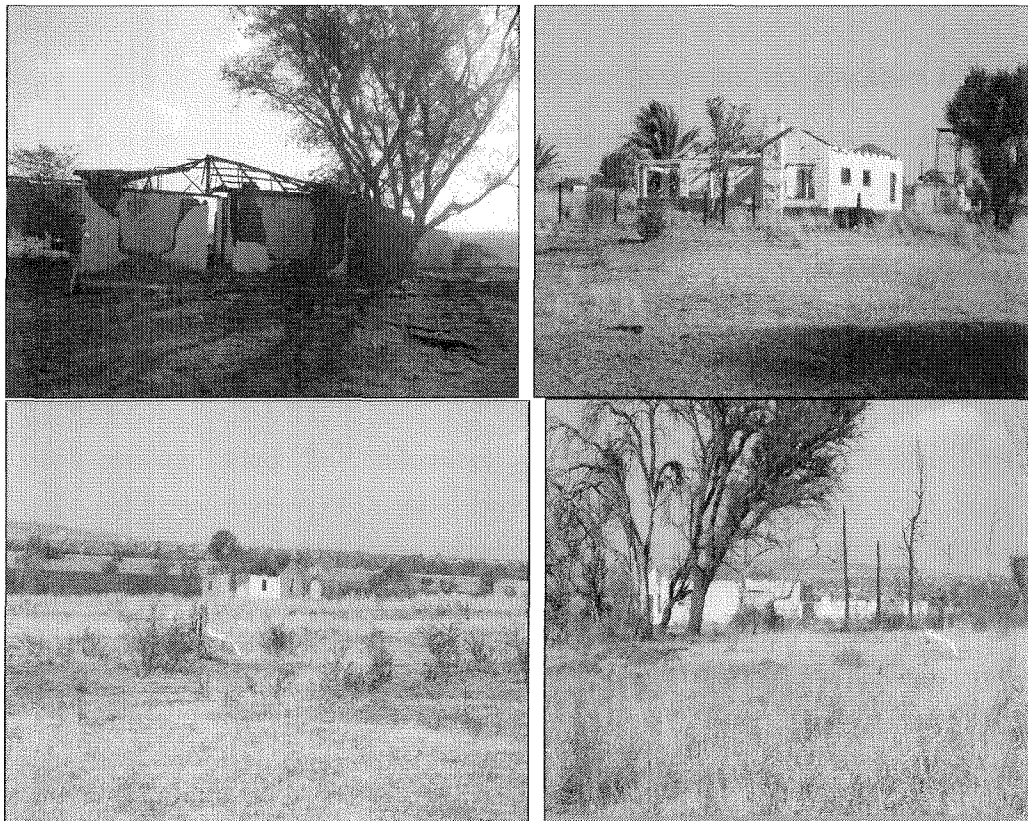


Figure 8: Some of the identified built environment represented by several old structures, associated barn or out buildings the structures qualifies to be protected in terms of national heritage resource act 25 of 1999.



Figure 9: Farm home stead burial ground, represented by 53 individual graves, indicated by tombstones, oval parked stones as grave dressings.

10. THE SIGNIFICANCE OF HISTORICAL STRUCTURES

Two set of criteria were used to determine the historical and cultural significance of the sites. The first set is determined by the National Heritage Resource Act which tends to focus on determining the significance of the site on national or macro geographic level. The second set of criteria is a refinement of those set out in the Act which tends to look at the site in more detail (addressing aspect such as building, structure, infrastructural elements, activities area and planted vegetation).

Remnants remains of a farm home stead in association with burial grounds and outbuildings, occur together are from historical past (referred to as remains of the 19th Century). Remains from this period are older than sixty years and therefore qualifies as historical remains, some of these remains however may be close to 100 years of age and qualify as heritage resources. Historical, Archaeological, and Paleontological sites are protected by Section 35 of the National heritage Resources Act (No.25 of 1999) this sites may not be affected (demolished, altered, renovated, removed) before the Provincial Heritage Resources Authority (PHRA) or South African Heritage Resource Agency(SAHRA) has approved such alterations, (these sites has high significance).

All buildings and structure older than sixty years are protected by section 34 of the National Heritage Resources Act (No 25 of 1999) and may not be affected (demolished, altered, renovated or removed) before the Provincial Heritage resource Authority (PHRA) or South African Heritage Agency (SAHRA) has approved such alterations.

11. THE SIGNIFICANCE OF GRAVES AND BURIAL SITES

The significance of burial grounds or graves has been indicated by means of stipulations derived from the National Heritage Resources Act (Act No 25 of 1999)

Heritage Significance:		GP.A; High/Medium Significance
Impact	:	Negative
Impact Significance	:	High
Certainty	:	Probable
Duration	:	Permanent
Mitigation	:	C

- *Informal graves and Formal grave yards (Cemeteries)*

Informal and formal grave yards (Cemeteries) can be considered to be sensitive remains of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (no 25 of 1999) this act applies whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regards to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on exhumation (Ordinance no 12 of 1980) and the Human Tissue Act (Act no 65 of 1983 as amended).

12. SUGGESTED MITIGATION MEASURES.

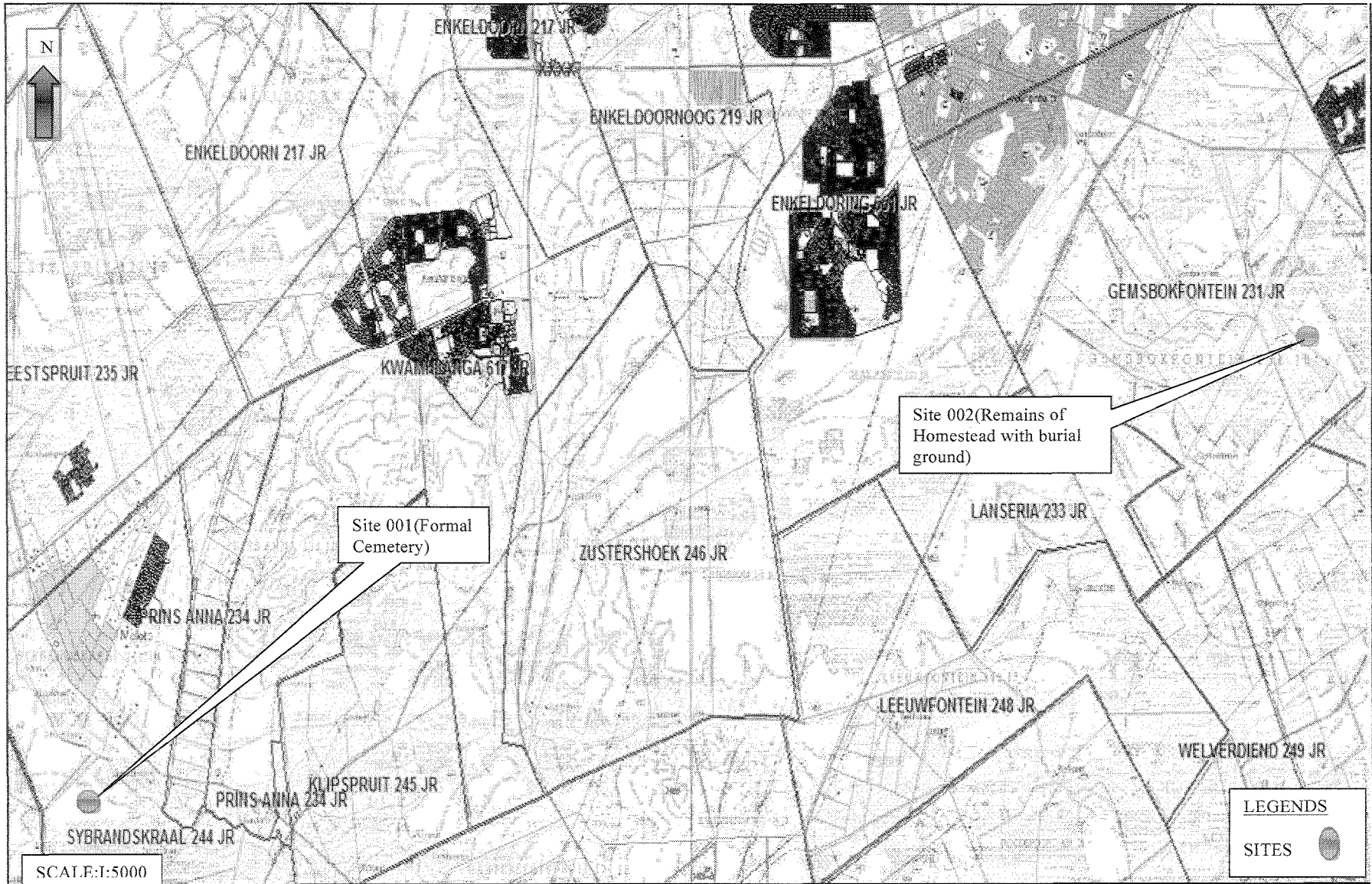
It would be of great important to note the location of the identified large cemetery, farm home stead and its associated burial ground, to enable the planning team to avoid them during the power line construction phase. The identified ruins are in such conditions that they could be properly assessed though most of the buildings elements, fixture and fittings are missing, (such as walls, roof, widows etc) the remaining features could assist in determining the age and style of the buildings, however the individual ruins have been vaguely described in order to find some order or to detect anything worthwhile that may be of heritage value.

Assessments of the proposed 132kv Power line from gemsbok substation to Big tree substation via the Kwa-Mhlanga substation. 24

13. CONCLUSIONS AND RECOMMENDATIONS

It should be made clear that the above mentioned sites should not be impacted and should be treated as “No go area”. We strongly recommend that these sites be left undisturbed and intact. The following mitigation measures are recommended for the identified sites and burial grounds. The developer in this regards ESKOM PTY (LTD) should take note of their location and the construction planning team should ensure that a small management plan is set in place to ensure their future safety. All project activities should be altered and should be planned around these sites. In order to protect them from any damage or other cumulative impacts that may occur during power line construction phase. The recommendations provided and outlined on this report should be followed and adhered to as appendices of the Environmental management Plan program of the constructions phase. Should the recommendation followed, there are no objections to the proposed power line project and we recommend to Provincial Heritage Resources Authorities (PHRA) to approve the project as planned.

14. TOPOGRAPHICAL MAP SHOWING IDENTIFIED SITES ADJECENT TO THE PROPOSED POWER LINE ROUTE ESTABLISHMENT



15. REFERENCE

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