

Prepared for:

**ESKOM MEGAWATT PARK
AND
ZITHOLELE CONSULTING**

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
ESKOM'S PROPOSED BRAVO PROJECT ON THE EASTERN
HIGHVELD IN THE GAUTENG AND MPUMALANGA PROVINCES
OF SOUTH AFRICA:**

**THE CONSTRUCTION OF A 400kV BY-PASS LINE ON THE
BRAVO-VULCAN LINE TO BY-PASS DUVHA.**

Prepared by:

Dr Julius CC Pistorius

Archaeologist and

Heritage Management Consultant

Member ASAPA

352 Rosemary Street

LYNNWOOD 0081

Pretoria

Tel and fax (012) 348 5668

Cell 0825545449

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EXECUTIVE SUMMARY

Eskom's proposed Bravo Integration Project spans the provinces of Gauteng and Mpumalanga and will be handled as the following five individual Environmental Impact Assessment (EIA) studies):

- Bravo 1: The construction of two 400kV by-pass lines of approximately 10km each from the Sol substation (Kriel) to the Zeus (Secunda) and Cambden substations respectively.
- Bravo 2: The construction of 2X400kV loop-in lines from the Kendal-Apollo and from the Duvha-Minerva lines into the Bravo power station. Each of these lines will be approximately 10km long.
- Bravo 3: The construction of a new 400kV power line from the Bravo power station to the Lulamisa substation which will be approximately 90km long.
- Bravo 4: The construction of 2X400kV power lines from the Kendal power station to the Zeus substation and from Bravo power station to the Zeus substation which will be approximately 90km long.
- Bravo 5: The construction of a 400kV by-pass line, approximately 10km in length, on the Bravo-Vulcan line to by-pass Duvha.

This study contains the report on the Phase I Heritage Impact Assessment study which was done for the construction of a 400kV by-pass line on the Bravo-Vulcan line to bypass Duvha.

The Eskom Project may impact on any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999). Consequently, Zitholele Consulting and Eskom commissioned the author to undertake a Phase I HIA study for the proposed Eskom Project Area with the following aims

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Eskom Project Area and, if so, to determine the level of significance of these heritage resources.

- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed Eskom Project.

The Phase I HIA study for the proposed Eskom Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards (GY01, GY02).
- Remains from the recent past.

The graveyards were geo-referenced, mapped and discussed in this report (Figure 2, Table 1). Their significance is indicated and mitigation measures are outlined should they be affected by the Eskom Project.

The remains from the recent past have no significance and are not further discussed.

The significance of the graveyards

It is possible that the graveyards may be impacted by the Eskom Project. The significance of the graveyards therefore is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and other legislation.

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Mitigating the graveyards

GY01 and GY02 can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* beneath power lines. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally,

- that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

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 authorisation (permits) from SAHRA to conduct the mitigation measures.

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1 INTRODUCTION

As part of Eskom's increased electricity supply plan the construction of the new coal-fired Bravo power station between Bronkhorstspuit and Witbank will commence later this year. The Bravo power station is expected to begin delivering electricity around 2013. The proposed Bravo Integration Project is necessary to integrate and connect Bravo into the existing Eskom electricity network. This will foresee that additional electricity supply to areas such as Secunda and Midrand are ensured.

The proposed Bravo Integration Project spans the provinces of Gauteng and Mpumalanga and will be handled as the following five individual Environmental Impact Assessment (EIA) studies):

- Bravo 1: The construction of two 400kV by-pass lines of approximately 10km each from the Sol substation (Kriel) to the Zeus (Secunda) and Cambden substations respectively.
- Bravo 2: The construction of 2X400kV loop-in lines from the Kendal-Apollo and from the Duvha-Minerva lines into the Bravo power station. Each of these lines will be approximately 10km long.
- Bravo 3: The construction of a new 400kV power line from the Bravo power station to the Lulamisa substation which will be approximately 90km long.
- Bravo 4: The construction of 2X400kV power lines from the Kendal power station to the Zeus substation and from Bravo power station to the Zeus substation which will be approximately 90km long.
- Bravo 5: The construction of a 400kV by-pass line, approximately 10km in length, on the Bravo-Vulcan line to by-pass Duvha..

Focused archaeological research has been conducted in the Gauteng and Mpumalanga Provinces of South Africa for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as the recording of rock art and historical sites. The Gauteng and

Mpumalanga Provinces have 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 Gauteng and Mpumalanga Provinces therefore form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) occur in the Gauteng and Mpumalanga Provinces (see Box 1, next page).

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

The National Heritage Resources Act (Act No 25 of 1999, Section 3) 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, Art 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 intends to implement the proposed Bravo Integration Project on the Eastern Highveld in the Gauteng and Mpumalanga Provinces of South Africa. The Bravo Integration Project involves five independent heritage impact assessment studies for various components of the project.

This study contains the report on the Phase I Heritage Impact Assessment study which was done for the construction of a 400kV by-pass line on the Bravo-Vulcan line to bypass Duvha. This project is referred to as the Eskom Project and the area to be affected by the power lines is referred to as the Eskom Project Area.

The Eskom Project may impact on any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999). Consequently, Zitholele Consulting and Eskom commissioned the author to undertake a Phase I HIA study for the proposed Eskom Project Area with the following aims

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Eskom Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed Eskom Project.

3 THE ESKOM PROJECT AREA

3.1 Location

The Eskom Project Area involves parts of the farms Rhenosterfontein 312 and Naauwpoort 335, located approximately fifteen kilometres to the south-east of Emahlaleni (Witbank) on the Eastern Highveld in the Mpumalanga Province of South Africa (2528 Pretoria 1:250 000) (Figures 1-2).

The alternatives for the 400kV by-pass line run across the farms Rhenosterfontein 312 and Naauwpoort 335 across undulating country and across parts of the Witbank Dam. The Eskom Project Area is an undulating piece of land which is cut into small holdings and upmarket suburbs along the Witbank Dam in the south while agricultural fields occur towards the north.

The project area has experienced major developments in the south such as the presence of the Duvha Power Station and its associated open cast mines. A large number of small holdings, upmarket suburbs and the Ikageng and Lesedi townships occur in the south and in the central part of the project area. An extensive squatter camp stretches along the Duvha-Kendall power line in the south.

This part of the Mpumalanga Province is known for its long standing production of agricultural crops such as maize wheat, sorghum, dairy, potatoes and other vegetables. Cattle and sheep ranching also make a significant contribution to the local economy. Gold and silica mines also occur in the area.

3.2 Within a cultural landscape

The Eskom Project Area is located in the midst of a cultural landscape that is marked by heritage remains dating from the pre-historical into the historical (colonial) period. Stone Age sites, Iron Age sites and colonial remains therefore do

occur in the Eastern Highveld (see Part 7 ‘Select Bibliography’). However, the historical character of the Eastern Highveld, which is so pronounced further towards the south, has largely been erased by various kinds of development in the Eskom Project Area.

The archaeological and historical significance of the Eastern Highveld must be described and explained in more detail before the results of the Phase I HIA study is discussed (see below, Part 5).



Figure 1- The Eskom Project Area to the south-east of Emahlaleni (Witbank) on the Eastern Highveld of the Mpumalanga Province (above). The Eskom Project Area is characterised by outstretched grass veldt and agricultural fields. Its southern part is marked by various kinds of development which has largely eased the historical character of the project area.

4 METHODOLOGY

This Phase I HIA study was conducted by means of the following:

- Surveying the proposed Eskom Project Area with a vehicle and selected spots on foot.
- Briefly surveying literature relating to the pre-historical and historical context of the Eskom Project Area.
- Consulting maps of the proposed Eskom Project Area.
- Consulting archaeological (heritage) data bases.
- Consulting spokespersons regarding the possible presence of graves and graveyards in the project area.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

4.1 Fieldwork

The proposed Eskom Project Area was surveyed with a vehicle where accessible roads existed while selected, sensitive spots in the project area were surveyed on foot.

4.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA) and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources of significance has been identified during earlier heritage surveys in or near the Eskom Project Area.

The author is not unacquainted with the Eskom Project Area at large as he had done several heritage impact assessment studies near the proposed project area (see Part 8, 'Select Bibliography').

Literature relating to the pre-historical and the historical unfolding of the Eastern Highveld where the Eskom Project Area is located was reviewed (see Part 5, 'Contextualising the Eskom Project Area').

It is important to contextualise the pre-historical and historical background of the Eskom Project Area in order to comprehend the identity and meaning of heritage sites in and near the project area.

In addition, the Eskom Project Area was studied by means of maps on which it appears (2528 Pretoria 1: 250 000).

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 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 notify 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.

4.4 Some remarks on terminology

Terms that may be used in this report are briefly outlined in Box 2.

Box 2. Terminologies that may be used in this report

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) (See Box 1).

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.

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 Eskom Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled in this area during the 1830's.

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 observations 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 floor 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 recognised and honoured whenever graveyards are exhumed and relocated.

The term '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).

The term '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 16th century and the 19th century and can therefore include the historical period.

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

The term 'study area', or 'Eskom Project Area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given area.

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 bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the co-operation and approval of SAHRA.

5 CONTEXTUALISING THE ESKOM PROJECT AREA

The following brief overview of pre-historical, historical, cultural and economic evidence will help to contextualise the proposed Eskom Project 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 as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (the period from 22 000 years ago to 200 years ago).

The Later Stone Age is also associated with rock paintings and engravings which were done by the San, Khoi Khoi and in more recent times by Iron Age farmers.

Heritage surveys up to now have recorded few Stone Age sites, rock paintings and engravings in the Eastern Highveld.

5.2 Iron Age remains

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

The Eastern Highveld has not been occupied by Early Iron Age communities but was occupied by Late Iron Age communities such as the Sotho, Swazi and

Ndebele who established settlement complexes that are associated with stone walls.

5.3 The historical period

Towns closest to the Eskom Project Area include Witbank and Middelburg. A brief historical background to each of these towns is provided below.

Witbank came into being as the railway line between Pretoria and Lourenzo Marques which was built in 1894 passed close to where Witbank is located today. The first Europeans who came to the area observed the abundance of coal, which is evident on the surface or in the beds of streams. A stage post for wagons close to a large outcrop of whitish stones (a 'white ridge') gave the town its name. Witbank was established in 1903 on a farm known as Swartbos which belonged to Jacob Taljaard.

Middelburg is one of the oldest towns that were established by the Voortrekkers in the previous Transvaal. The town was established on the farms of Klipfontein and Keerom on the banks of the Klein Olifants River in 1859. It is generally accepted that Middelburg's name is derived from the fact that the Transvaal Republic established the town midway between Pretoria and Lydenburg.

The choice for Middelburg's location was not well accepted by the inhabitants and it was moved to the farm Sterkfontein. Here, a town was established and named Nasaret (Nazareth). However, the name did not appeal to the local community and its original name was reinstated. Middelburg temporary served as the seat of the Transvaal Republic after the siege of Pretoria during the Second Anglo Boer War.

Today Middelburg and Witbank are important centres where coal is mined and transported to Richards Bay from where it is exported all over the world. The 20th

century also saw the introduction of large-scale irrigation and dry land farming on the Eastern Highveld.. Today the economic activities of the area include diamond and coal mining, light and heavy industries as well as steel and vanadium operations.

5.4 A coal mining heritage

Coal mining on the Eastern Highveld is now older than one century and has become the most important coal mining region in South Africa. Whilst millions of tons of high-grade coal are exported annually more than 80% of the country's electricity is generated on low-grade coal in Eskom's power stations such as Duvha, Matla and Arnot situated near coalmines on the Eastern Highveld.

The earliest use of coal (charcoal) in South Africa was during the Iron Age (300-1880AD) when metal workers used charcoal, iron and copper ores and fluxes (quartzite stone and bone) to smelt iron and copper in clay furnaces.

Colonists are said to have discovered coal in the French Hoek Valley near Stellenbosch in the Cape Province in 1699. The first reported discovery of coal in the interior of South Africa was in the mid-1830 when coal was mined in Kwa Zulu/Natal.

The first exploitation for coal was probably in Kwa Zulu/Natal as documentary evidence refers to a wagon load of coal brought to Pietermaritzburg to be sold in 1842. In 1860 the coal trade started in Dundee when a certain Pieter Smith charged ten shillings for a load of coal dug by the buyer from a coal outcrop in a stream. In 1864 a coal mine was opened in Molteno. The explorer, Thomas Baines mentioned that farmers worked coal deposits in the neighbourhood of Bethal (Transvaal) in 1868. Until the discovery of diamonds in 1867 and gold on the Witwatersrand in 1886, coal mining only satisfied a very small domestic demand.

With the discovery of gold in the Southern Transvaal and the development of the gold mining industry around Johannesburg came the exploitation of the Boksburg-Spring coal fields, which is now largely worked out. By 1899, at least four colliers were operating in the Middelburg-Witbank district, also supplying the gold mining industry. At this time coal mining also has started in Vereeniging. The Natal Collieries importance was boosted by the need to find an alternative for imported Welsh anthracite used by the Natal Government Railways.

By 1920 the output of all operating colliers in South Africa attained an annual figure of 9,5million tonnes. Total reserves were estimated to be 23 billion tonnes in Witbank-Springs, Natal and Vereeniging. Total reserves today are calculated to be 121 billion tonnes. The largest consumers of coal are Sasol, Iscor and Eskom.

5.5 A vernacular stone architectural heritage

A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19th century well into the early 20th century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete ('oukclip'), dolerite ('blouklip'), granite, shale and slate.

The origins of a vernacular stone architecture in the Eastern Highveld may be ascribed to various reasons of which the ecological characteristics of the region may be the most important. Whilst this region is generally devoid of any natural trees which could be used as timber in the construction of farmsteads, outbuildings, cattle enclosures and other structures, the scarcity of fire wood also prevented the manufacture of baked clay bricks. Consequently stone served as the most important building material in the Eastern Highveld.

Late Iron Age communities who contributed to the Eastern Highveld's stone walled architecture were the Sotho, Pedi, Ndebele and Swazi. The tradition set by these indigenous groups may have influenced the first settlers from Natal and the Cape Colony to utilize the same resources that their predecessors did. Many farmers from Scottish, Irish, Dutch, German and Scandinavian descent settled and farmed in the Eastern Highveld. These colonials brought the knowledge of stone masonry from Europe which compensated for the lack of fire wood necessary to manufacture baked clay bricks.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 Types and ranges of heritage resources

The Phase I HIA study for the proposed Eskom Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards (GY01, GY02).
- Remains from the recent past.

The graveyards were geo-referenced, mapped and discussed in this report (Figure 2, Table 1). Their significance is indicated and mitigation measures are outlined should they be affected by the Eskom Project.

The remains from the recent past have no significance.

The Phase I HIA study is now briefly discussed and illustrated with photographs.

Heritage resources	Coordinates	Significance
Graveyard 01	25° 56.846' 29° 19.168'	HIGH
Graveyard 02	25° 57.191' 29° 19.127'	HIGH
Remains from the recent past	Across a wide area	LOW

Table 1- Coordinates for two graveyards in the eastern parts of the Eskom Project Area (above).

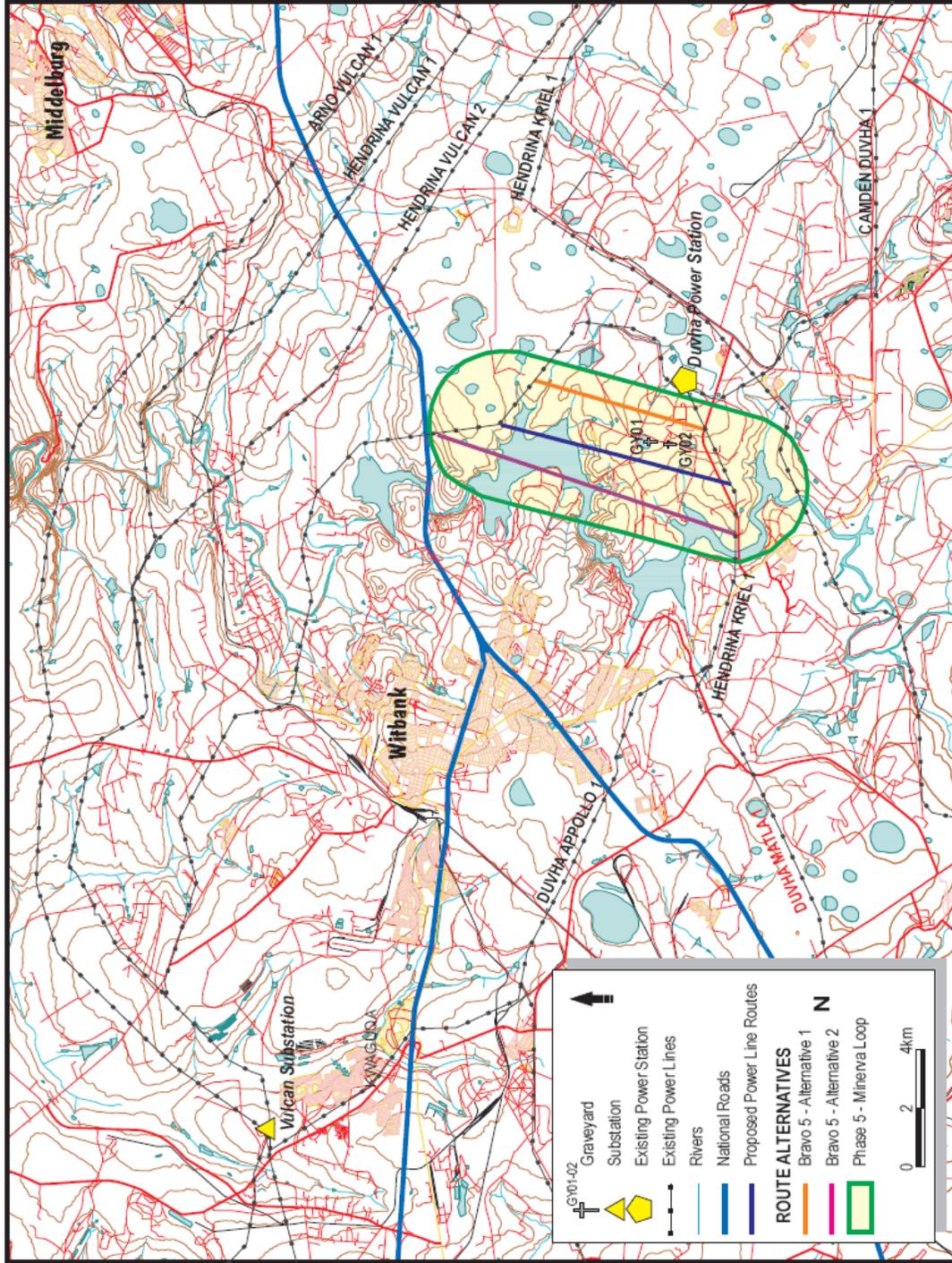


Figure 2- The Eskom Project Area on parts of the farms Rhenosterfontein 312 and Naauwpoort 335 south-east of Emahlaleni (Witbank) on the Eastern Highveld in the Mpumalanga Province of South Africa. Note the presence of graveyards in the eastern parts of the Eskom Project Area (above).

6.1.1 The graveyards

Two graveyards (GY01, GY02) were observed in the eastern part of the Eskom Project Area, namely:

6.1.1.1 Graveyard 01

GY01 is located within an area which is demarcated with a fence and which also holds remains from the recent past. At least thirteen white painted graves are demarcated within the confines of a fence in this area. All the graves are fitted with cement tombstones and are edged with cement strips.

At least two of the tombstones bear inscriptions, namely:

- 'Shabangu Pietland Mashete Died on 24 August 1958'
- 'Shabangu Zenani Wynand Died 14 July 1956'

6.1.1.2 Graveyard 02

GY02 holds the remains of approximately 36 individuals. At least 16 are fitted with cement headstones and are edged with cement strips. As many as twenty graves may be covered with cement slabs and with piles of brick and stone.

Three graves are fitted with granite headstones. Two have the following inscriptions:

- 'Mr Jim Ngwenyane. You will always be remembered by your family 1880-05-28 1972-05-28'
- 'Norman Dubazane Sindane'

Two graves with cement headstones bear the following inscriptions:

- 'Martha Sindane 1959'
- 'David Maile Sindane'



Figures 3 & 4- GY01 and GY02 in the eastern parts of the Eskom Project Area (above and below).



6.1.1.3 Remains from the recent past

Remains consisting of dilapidated dwellings which date from the recent past occur in the project area. Although these remains have been geo-referenced they hold little significance and are not discussed further.

6.2 The significance of the graveyards

It is possible that the graveyards may be impacted by the Eskom Project. The significance of the graveyards therefore is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and other legislation.

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

6.3 Mitigating the graveyards

GY01 and GY02 can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* beneath power lines. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected

existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.

- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

7 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA study for the proposed Eskom Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards (GY01, GY02).
- Remains from the recent past.

The graveyards were geo-referenced, mapped and discussed in this report (Figure 2, Table 1). Their significance is indicated and mitigation measures are outlined should they be affected by the Eskom Project.

The remains from the recent past have no significance and is not further discussed.

The significance of the graveyards

It is possible that the graveyards may be impacted by the Eskom Project. The significance of the graveyards therefore is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and other legislation.

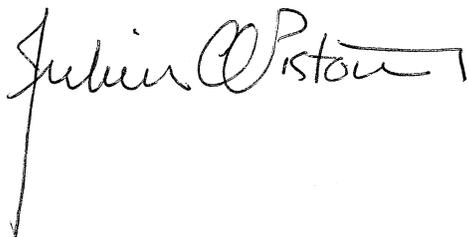
All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Mitigating the graveyards

GY01 and GY02 can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* beneath power lines. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.



DR JULIUS CC PISTORIUS

Archaeologist &

Heritage Management Consultant

Member ASAPA

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