

**PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT
SPECIALIST STUDY REPORT**

**PROPOSED CONSTRUCTION OF A NEW ± 1 KM 132KV
PILANESBURG POWER LINE AND SEDIBELO SUB STATION IN
MOSES KOTANE LOCAL MUNICIPALITY, BOJANALA DISTRICT,
NORTH WEST PROVINCE.**

October 2008, Johannesburg

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REPORT DETAILS

PROJECT NAME: PROPOSED CONSTRUCTION OF A NEW ±1KM 132KV PILANESBURG POWER LINE AND SEDIBELO SUB STATION IN MOSES KOTANE LOCAL MUNICIPALITY, BOJANALA DISTRICT, NORTH WEST PROVINCE.

REPORT TITLE: ARCHAEOLOGICAL AND CULTURALAND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY FOR PROPOSED CONSTRUCTION OF A NEW ±1KM 132KV PILANESBURG POWER LINE AND SEDIBELO SUB STATION IN MOSES KOTANE LOCAL MUNICIPALITY, BOJANALA DISTRICT, NORTH WEST PROVINCE.

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REFERENCE NO.: HIA

STATUS OF

REPORT:

FINAL ISSUE: Date: October 2008

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PROFESSIONAL SERVICE PROVIDER (PSP) Nzumbululo Heritage Solutions (South Africa) cc.

MANAGEMENT SUMMARY

Background

Limpopo Water Initiative (Pty) Ltd on behalf of Eskom commissioned Nzumbululo Heritage Solutions (South Africa) (HeSSA) to conduct an archaeological and heritage impact assessment [HIA] study for proposed construction of a new ± 1 km 132kv power line and sub station in the Pilanesberg mining area in Moses Kotane Local Municipality, Bojanala district, North West province. This heritage impact assessment (HIA) study was conducted as part of the specialist studies for the EIA exercise. The HIA focuses on potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed construction's receiving environment.

Summary Results

The field survey covered the proposed 1km long power-line servitude route and the substation site. The project area is heavily degraded due to current and previous mining and agricultural activities.

Summary Recommendations

- The proposed powerline and substation development will not affect any known archaeological or heritage resources. As such, we recommend to the heritage authorities to approve the project to proceed as planned.
- As a cautionary measure, we recommend that heritage monitoring be included into the project's Environmental Management Plan (EMP) to ensure that the proposed construction of power line and associated infrastructure will not interfere with chance archaeological sites should they be found in the course of the development.
- The foot print impact of each powerline pole should be kept to minimal to limit the possibility of encountering chance finds. However, this recommendation is made with the knowledge that the affected project area is heavily degraded with very limited chances of encountering previously unknown archaeological site *in situ*.
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the power-line route and the associated substation site.

PROPOSED PILANESBURG EST

ABBREVIATIONS

HIA	Heritage Impact Assessment
EIA	Environmental Impact Assessment
HeSSA	Nzumbululo Heritage Solutions (South Africa)
LIA	Late Iron Age
SAHRA	South African Heritage Resources Agency

DEFINITIONS

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

In Situ material *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

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1 INTRODUCTION

This Archaeological and Heritage Impact Assessment (HIA) study was conducted to fulfil the requirements of the National Heritage Resources Act, Act 25 of 1999 Section 38. It was conducted as part of the Environmental Impact Assessment (EIA) for the proposed power-line and associated electricity distribution infrastructural development in the Pilanesburg mining and farming areas of North West Province (see Fig. 1). The HIA study focuses on identifying and assessing potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed project (Table 1). The study did not identify any archaeological or physical cultural properties barriers to the proposed 1km long powerline and substation development.

2 AIMS OF THE HIA STUDY

This HIA study primarily seeks to fulfil the requirements of South African Heritage Resources Act (Act No. 25 of 1999) Section 38 by:

- Identifying heritage resources affected by the proposed power line and the associated infrastructural development.
- Assess the significance of the resources.
- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed power line construction.
- Consult with the affected and other interested parties in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Identify and discuss with local communities (where applicable) on potential impacts of the proposed power-line construction on graves and burials sites within the affected area and make the necessary recommendations on how to handle the matter.
- Take responsibility for communicating with the SAHRA and other authorities in order to obtain the relevant permits and authorization.

Table 1: Terms of Reference for the Heritage Study for the proposed power line construction project.

PURPOSE	ACTIVITIES
<ul style="list-style-type: none"> ❑ Fulfill the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, Section 38. ❑ To identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and/or archaeological importance that may be affected by the proposed powerline construction project area. This study should include the identification of gravesites. ❑ Identify and describe impacts to archaeological and cultural resources. ❑ Make recommendations on mitigation measures. ❑ Identify and describe management measures. 	<ul style="list-style-type: none"> ❑ Identify, describe and map sites of archaeological historical or cultural interest affected by the proposed power line construction project. ❑ Identify, where possible, the gravesites affected by the development. ❑ Liaise with the local communities (if applicable) with regards to the impact of the development on the heritage resources. ❑ Describe the importance or significance of these sites and whether these sites need to be conserved, protected or relocated. ❑ Describe the procedures for mitigation or relocation of sites and provide an indication of time required for these management measures to be implemented. ❑ Document findings and recommendations.

3 BACKGROUND SUMMARY

The proposed development consists of construction of a new ± 1 km 132KV power line and new substation in the Pilanesburg mining area in Moses Kotane Local Municipality in North West Province (see Fig. 1). The proposed line will traverse from the new Sedibelo substation, divert to the north east within Magazynkraal 3JQ farm and the boundary of Tuchenkomist 135 JP farm from the approved Pilanesburg Sedibelo power line route to avoid encroaching on the Magazynkraal 3JQ mining site. The proposed powerline and substation development is located in a mining and commercial agricultural landscape where there are three open cast mines with already built up areas, road networks, power lines, boundary fence lines, communal grazing land and agricultural fields (Plate 1 to 9).

From a culture geography and history perspective, Pilanesburg area, within which the project falls, is in the open veld edged by low lying mountain ranges in the North West province. This area was historically occupied by predominantly Sotho Tswana -speaking groups and Po before it was briefly dominated by Mzilikazi's Ndebele during the *mfencane*. Around the 1830s, the region also witnessed the massive movements associated with the *mfencane* ('wandering hordes'). The causes and consequences of the *mfencane* are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988). The area was partitioned into commercial settler farms during the colonial period. Archaeologically, the area is associated with Sotho Tswana communities and has yielded four ceramic sequences of the Urehwe tradition: Madikwe (1500-1700), Olifantspoort (AD 1500 -1700) and Uitkomst (AD 1700-1850) and Buispoort (1700-1840) [Huffman 2007: 443].

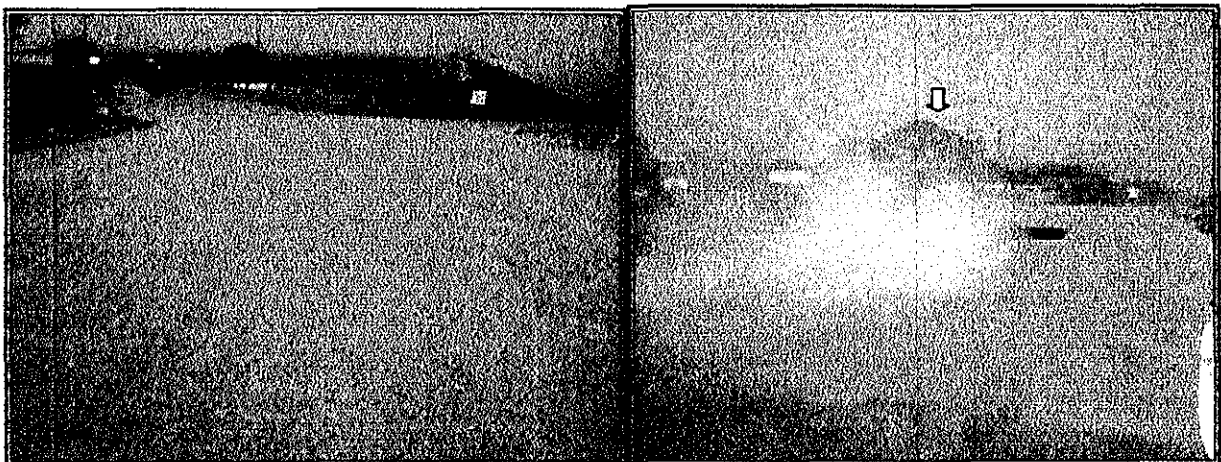
Today the project area of Pilanesburg is predominantly mining and commercial farming area. The proposed diverting power line route and the proposed substation site are within the mining area where

there are extensive mining activities including bush clearing, earth moving, open cast mining operation, shaft mining activities. In addition, the area is currently used as grazing land and there developed landscapes and infrastructures such as access roads, power and telecommunication lines, and farm buildings.

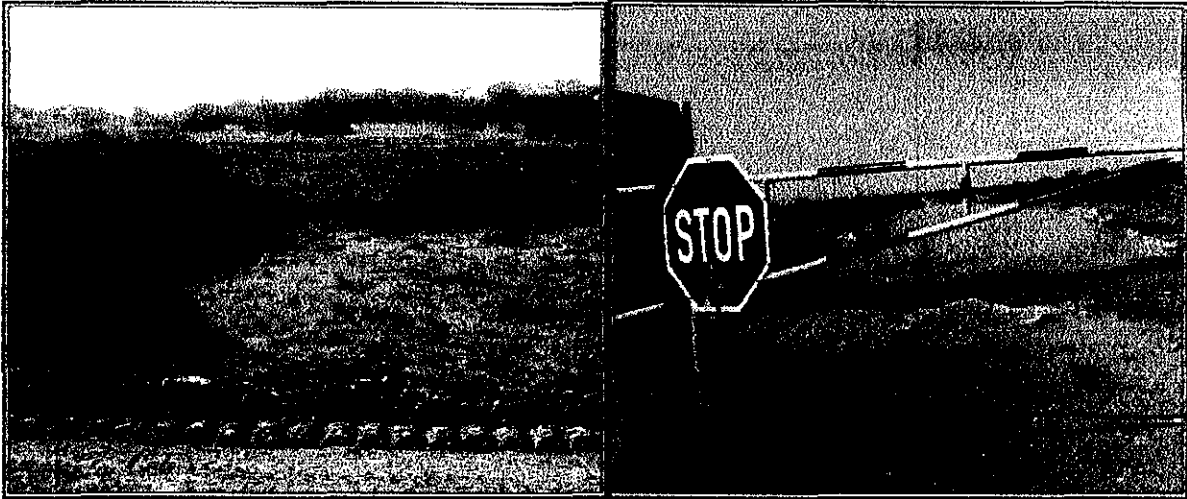
4. HIA STUDY METHODS

The study involved a basic field reconnaissance survey in the company of the project environmentalists. This preliminary survey was followed by desktop review of secondary literature on the general history of the project area. Subsequently a detailed field survey was conducted along the 1km powerline servitude route and the proposed substation site.

The survey was aimed at identifying archaeological sites and physical cultural resources signatures as well as other cultural heritage sites such as graves, burial and religious or sacred sites that may be affected by the proposed power-line construction project. A team of two archaeologists systematically transacted the power-line route on foot. While conducting the field survey, we were aware of the field factors. Distribution of archaeological sites across the landscape depends on a number of related factors, such as preservation conditions over time, the degree to which sites are exposed through erosion or lack of vegetation and the actual decisions of the people who created the sites and deposited the materials originally. Using the preliminary findings from the reconnaissance study we applied a judgement surveying strategy (stratified sampling). We divided the landscape through which the proposed power line would pass into geographical zones (built up sections, land under crops, open grass lands, hills, gully, ridge, and stream or river valley section). Naturally, we placed more emphasis on areas we believed had potential of archaeological, historical or other physical cultural resources.



Plates 1 and 2: Some sections of Magazynkraal 3JQ mining area through which the power line will pass. The overall powerline route is extensively disturbed.

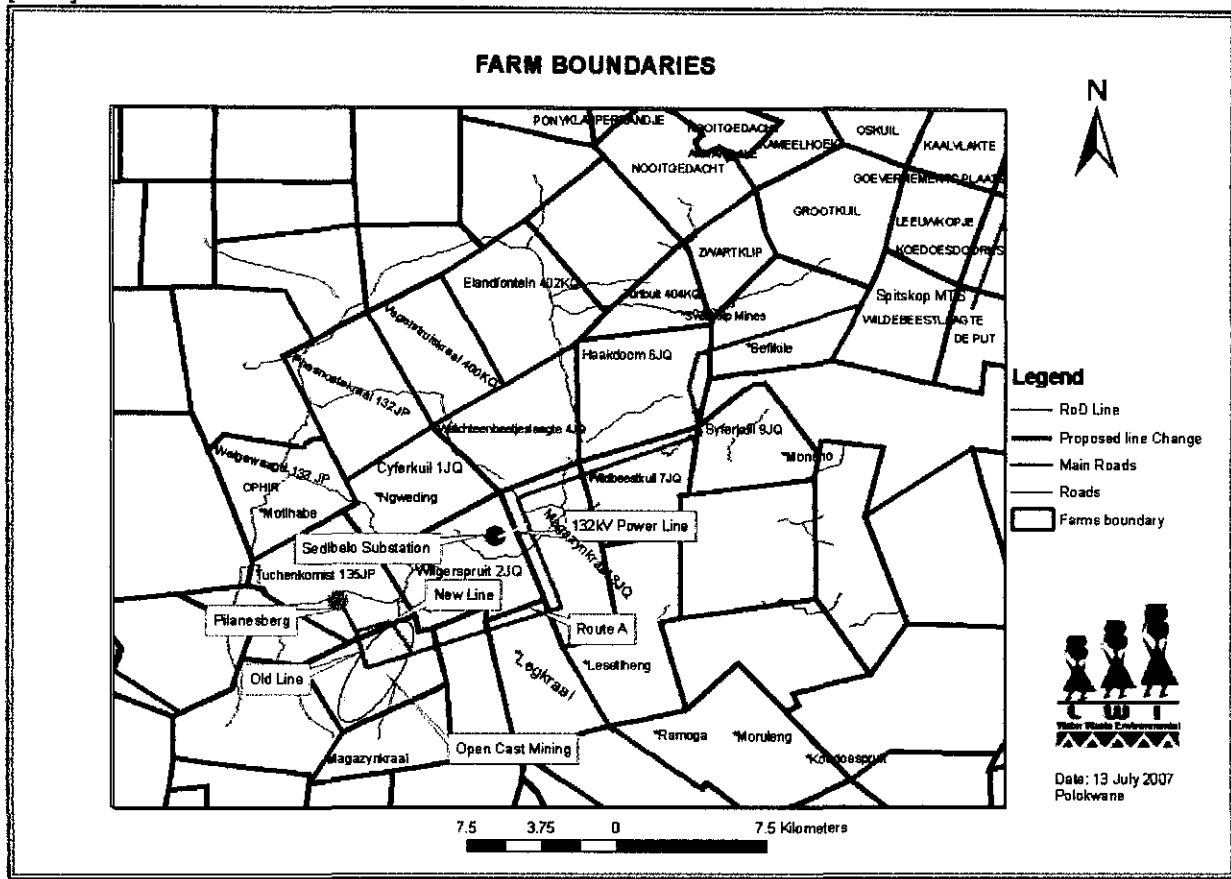


Plates 3 and 4: View of existing developments on the power line route, this area is generally heavily disturbed by existing developments and current land use activities. Under these circumstances, it was anticipated that the chances of identifying archaeological sites *in situ* will be limited.

4.1. BRIEF ROUTE DESCRIPTION

Identification of archaeological sites during surveying also depends on visibility and accessibility. All areas along the proposed power line route are accessible. From the diverting point the proposed power-line route will run towards the north and turn to the left on the boundary of Tuchenkomist 13JP Farm to join the approved line within the mining property. The proposed line would go through heavily degraded landscape where there are road construction, mining activities and, mine access roads, (Plates 1 & 2). Under these disturbed conditions, the chances for archaeological material preserved *in situ* in most portions of the power line route were limited. Nonetheless, we could not rule out the discovery of archaeological sites in the project area.

Figure 1: Proposed construction of new 132kv Pilanesberg power line and Sedibelo substation project area [2528]



5. RESULTS OF THE HIA.

5.1. RESULTS OF ARCHAEOLOGICAL EXAMINATIONS FOR THE PROPOSED POWER-LINE ROUTE

Location Details

Province: North West

Local Municipalities: Moses Kotane

Name Properties affected: Magazynkraal 3JQ, Wilgerspruit 2JQ and Tuchenkomist 135JP mining area.

Proposed development: Construction of a new ± 1 km 132kv power line to divert from the approved Pilanesburg Sedibelo power line and new Sedibelo sub station

1:50 000 map name: 2527

GPS Co-ordinates and description of proposed transmission line route:

- S25° 07 40.61' E027° 01 9.52' (Road at the Magazynkraal 3JQ)
- S25° 04 35.12' E027° 03 51.01' (Point at the proposed substation site)
- S25° 04 33.96' E027° 09 54,34' (Point at the proposed substation site)
- S25° 04 38,520' E027° 03 56,25' (Point at the proposed substation site.)
- S25° 04 39,68' E 27° 03 52,92' (Point at the proposed substation site)
- S25° 05 513' E027° 04 391' (Road adjacent east of the Sedibelo substation site).

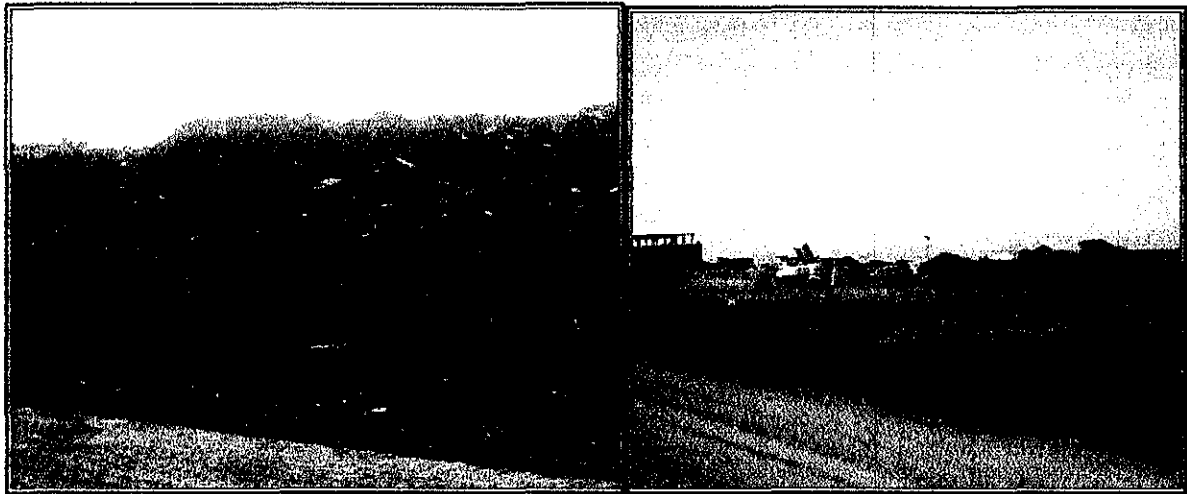


Plate 5 and 6: The proposed power line route will traverse through already developed and disturbed areas such as this section where the line will cross road network and traverse through the mining area. Note that the area is already disturbed due earth moving and related activities associated with the new mines.

Archaeological and Cultural Sites

No archaeological sites were identified in course of field investigations on the route of the proposed power line and the associated substation site. The powerline route and the proposed substation site are heavily degraded from mining activities as well as current and previous land use. It is highly unlikely that any archaeological and any category of physical cultural properties may have survived *in situ*.

Historical and Recent sites

Although the Pilanesberg has long history of human occupation going into prehistory to colonial history up until the contemporary commercial farming and illustrious history of mining, the area earmarked for the 1km powerline and substation development does not retain any significant historical resources or value. Generically speaking, historic sites are associated with white settlers, colonial wars, industrialization; African population settlements, contemporary ritual sites and settler farming communities are the most common and visible.

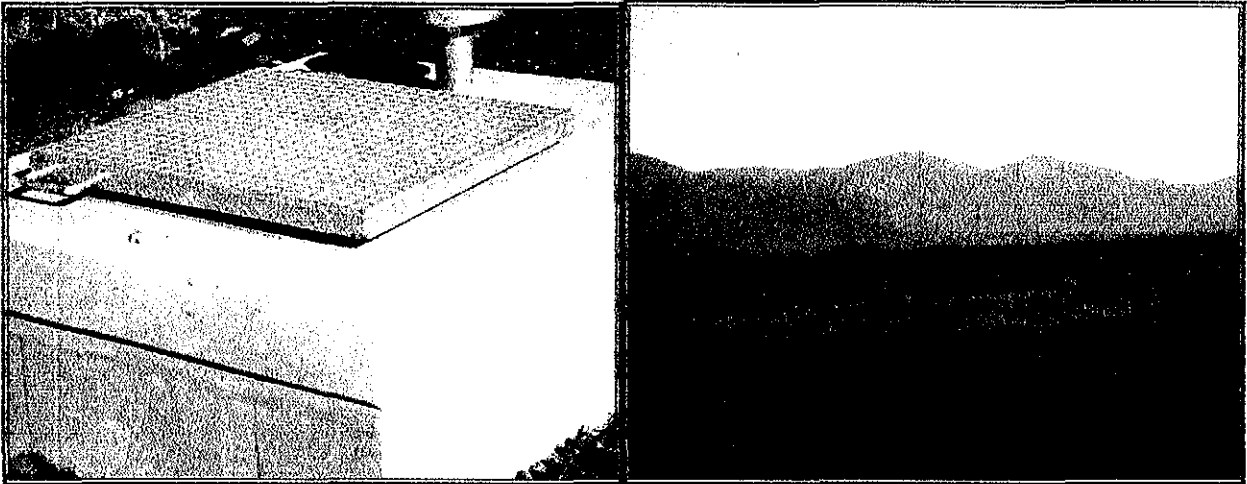


Plate 7 and 8: The site earmarked for Sedibelo substation construction, note that the site is already heavily disturbed by current clearing and earth moving activities associated with the new mines. Some disturbed sections were inspected for archaeological materials that may possibly be exposed by clearing and earth moving activities.

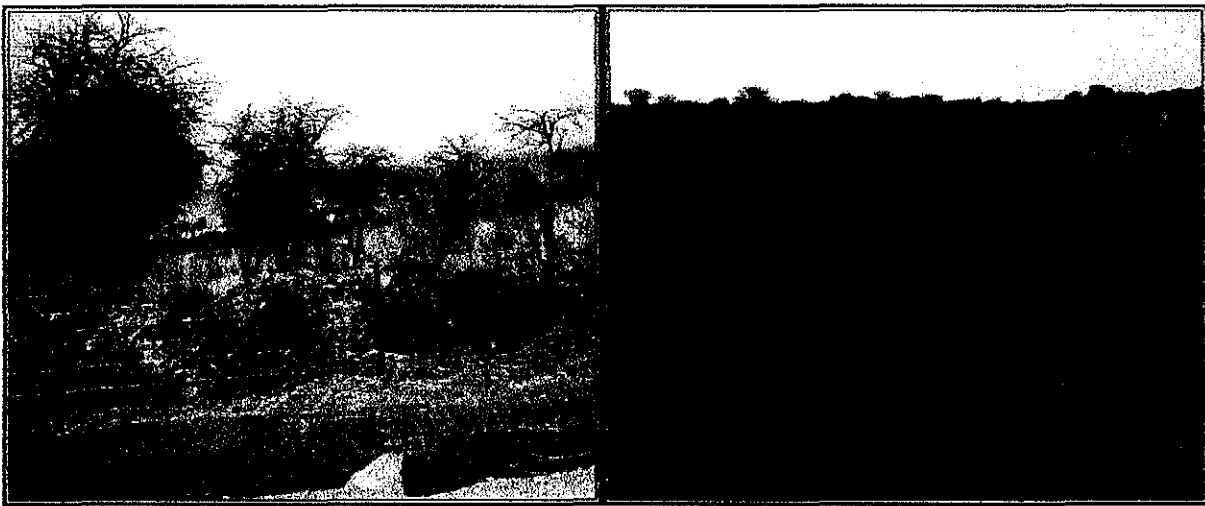


Plate 9 & 10: View of some sections of the power line route and proposed site for the substation, note that the site was cleared for agricultural and mining purposes later, under these circumstances chances of finding archaeological site in situ are limited.

Burial grounds and graves

No burial ground or grave sites were identified along the 1km powerline servitude route and the associated substation site. As discussed in previous sections, the receiving environment is heavily degraded by existing and previous developments and land use activities (Plates 1 – 10). Nonetheless,

In terms of the Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority:

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume or 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
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment, which assists in the detection or recovery of metals.

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high significance. Although the chances of this occurring are very limited, should any grave previously unknown be identified during construction, every effort should be made not disturb them. Pole position should be shifted to ensure the grave or burial ground is not disturbed. If such sites are indeed encountered in the course of the proposed power line and substation and associated auxiliary developments, they are still protected by applicable legislations. Should burial sites outside the NHRA be accidentally found, they must be reported to the nearest police station to ascertain whether or not a crime has been committed. If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities give their consent to the unknown remains to be reburied in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

6 STATEMENT OF OVERALL IMPACTS

No impact is anticipated on archaeological or any physical cultural properties given the observation that no such resources were recorded within the project's receiving environment. From a general perspective, archaeological resources are fixed in space. Any activity that threatens to alter the status quo is an immediate and direct threat to any archaeological resources that may be located within the affected area. The impact will be permanent in nature, extent and duration (Bickford and Sullivan, 1977). Based on the results of this study, the proposed power transmission line and associated substation development project will have no impact upon any cultural heritage resources including graves, historical and archaeological resources in its direct path. The area is already physically degraded leaving limited chances of identifying any archaeological sites of note on the affected areas.

7 OVERALL RECOMMENDATIONS

- The proposed powerline and substation development will not affect any known archaeological or heritage resources. As such, we recommend to the heritage authorities to approve the project to proceed as planned.
- As a cautionary measure, we recommend that heritage monitoring be included into the project's Environmental Management Plan (EMP) to ensure that the proposed construction of power line and associated infrastructure will not interfere with chance archaeological sites should they be found in the course of the development.
- The foot print impact of each powerline pole should be kept to minimal to limit the possibility of encountering chance finds. However, this recommendation is made with the knowledge that the affected project area is heavily degraded with very limited chances of encountering previously unknown archaeological site *in situ*.
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the power-line route and the associated substation site.

8 CONCLUDING REMARKS

Subject to the recommendations herein made, there are no significant cultural heritage resources barriers to the proposed development. The project may be approved to proceed as planned subject to approval by heritage authorities. With no major constraints identified for this project, there are no objections to the proposed power-line and substation development.

9 BIBLIOGRAPHY

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National Heritage Resources Act (Act No 25 of 1999)