



**TITLE: A HERITAGE IMPACT ASSESSMENT STUDY OF NGWEDI  
TURNINGS ESKOM DEVIATIONS AS PART OF NGWEDI TURN-INS  
TRANSMISSION POWERLINES, NORTH WEST PROVINCE, SOUTH  
ARICA**


**VERSION: FINAL HIA**

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**ACKNOWLEDGEMENT**

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**DECLARATION OF INDEPENDENCE**

This report has been compiled by Nkosinathi Tomose (Principal Consultant) for NGT Project and Heritage Consultants. The views expressed in this report are entirely those of the authors and no other interest we redisplayed during the decision making process for the project.

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## **EXECUTIVE SUMMARY**

NGT Projects and Heritage Consultants (Pty) Ltd was appointed by Baagi Environmental Consultancy, conduct a survey of the proposed Eskom deviations as part of the Ngwedi Turn-ins Transmission Powerlines project in compliance with SAHRA Final Comments on the 2012 HIA conducted for the study area and to comply with NHRA, No. 25 of 1999 for the management of heritage resources in South Africa. The appointment is in terms of the National Heritage Resources Act (NHRA), No. 25 of 1999 (as amended), the National Environmental Management Act (NEMA), No.107 of 1998 (as amended in 2014 & the applicable 2010 Regulations). The standard NGT Projects & Heritage Consultants HIA entailed conducting a detailed background information search of the affected environment; a physical survey of the project foot print to identify, record/document and map out any archaeological and heritage resources within and immediately around the development footprint. A total of 7 heritage resources sites were identified, assessed and evaluated in terms of their heritage significance and impact significance. The following conclusions and recommendations are made about the proposed Ngwedi Turn-ins Transmission Powerlines deviations.

### **Conclusions**

It is concluded that this reported has sufficiently demonstrated the importance of Marothodi sites through the use of various forms of data and illustrations. In support of the SAHRA APM Unit position, the Marothodi site are indeed a unique cultural resources associated with among other Sotho-Tswana groups, the Tlokwa people.

These sites are not only important in terms of their aesthetic and archaeological value, but also in terms of understanding the rise of the present day Tswana people in the region.

The survey forms part of survey of the proposed Eskom deviations for Ngwedi Turn-ins Transmission Powerlines and will be an addendum to the 2012 CEMPr which is currently being updated. The CEMPr for the study was conducted in 2012 and an HIA report was produced and submitted to the SAHRA for Review Comments by A. Pelsler. An interim review comment was issued by SAHRA in August 2013. In 2014 Baagi Environmental Consultancy appointed NGT Projects & Heritage Consultants to apply for heritage permits for the mitigation of Marothodi site within the old Ngwedi Turn-ins Transmission Powerlines. Following a series of discussions between SAHRA, Eskom and Baagi discussions facilitated by NGT Projects & Heritage Consultants it was agreed that this process would not be possible to finalise before SAHRA issues a Final Review Comment

on the project (*ANNEXURE A*). The Final Review Comment on the project was issued in 2015 (*ANNEXURE B*) AND its was accompanied by a formal letter to NGT Projects & Heritage Consultants to discussions held between NGT and SAHRA on behalf of NGT clients (*ANNEXURE C*). In the final comment it is concluded that the Marothodi sites are Grade 1 cultural resources and they should not be disturbed or destructed.

Subsequently, the Eskom team devise a plan to mitigate the identified Marothodi site in compliance with the NHRA, No. 25 of 1999 and SAHRA Final Comment for the management of the nation estate. A deviation from the current Transmission was developed with a view of mitigating the Marothodi sites (*Figures 14-17: old line is in blue and new line is in red*). This deviation mitigated potential impacts on the Marothodi sites and completely avoided them. This minimises any potential impacts of the Transmission line to the resources.

From a cultural resources management perspective there are no objections to the proposed development provided that the Developer adheres to proposed recommendations.

It is therefore concluded that the proposed Ngwedi Turnings deviations will avoid the identified Marothodi sites in terms of both primary and secondary impacts.

## **Recommendations**

Based on the above conclusions about the nature and status of heritage resources yielded during the physical survey of the project area and the various assessment and evaluation processes that took place thereafter, the following recommendations are made about the project:

- SAHRA should review the current study, excise its discretion and approve the project on the basis that there will be not impacts on the identified Marothodi heritage sites and the recent cemetery.
- The area with the identified heritage sites should be avoided at all costs and be treated as a No-Go-Area.
- Eskom and its Environmental Advisor and key project team members should appoint a Heritage Control Officer (HCO) to conduct weekly and monthly inspection of the heritage sites during the construction phase of the project and a report should be developed and submitted to SAHRA reporting on the status of these national sites.

- It is also recommended that the project ECO should also be inducted on the importance of the identified heritage resources before the construction phase of the project and why they should not be disturbed and be treated as a No-Go-Area
- Because on the nature on some of archaeological and heritage resources i.e. subterranean in nature. It is recommended that should any archaeological and/or heritage resource material in form of **Chance Finds** (i.e. resources that are subterranean in nature that were not identified by the current survey but which may be brought to earth surface through excavation activities associated with the proposed development) be identified during construction phase of the project (through excavation activities), the ECO should report them to the SAHRA ([cscheermeyer@sahra.org.za](mailto:cscheermeyer@sahra.org.za) or [phine@sahra.org.za](mailto:phine@sahra.org.za) or call: 021 462 4502) or call an archaeologist and/or heritage specialist to investigate the finds and make necessary recommendations.

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## ABREVIATIONS

ACRONYMS	DESCRIPTION
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
ARCH	Archaeological
BEL	Built Environment & Landscape
BGG	Burial Grounds & Graves
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
K.y.a	Thousand years ago
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NHRA	National Heritage Resources Act
NEMA	National Environmental Management Act
PHRA-NW	Provincial Heritage Resources Authority North West
SAHRA	South African Heritage Resources Agency
WOM	Without Mitigation
WM	With Mitigation

## TERMS AND DEFINITIONS

### *Archaeological resources*

These include:

- 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;
- Rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act,

and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;

- Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

### ***Cultural significance***

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

### ***Development***

This 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 the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- Construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- Carrying out any works on or over or under a place;
- Subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- Constructing or putting up for display signs or boards; any change to the natural or existing condition or topography of land;
- And any removal or destruction of trees, or removal of vegetation or topsoil.

### ***Heritage resources***

This means any place or object of cultural significance.

## **1. INTRODUCTION**

### **1.1. Project Background**

In 2012 Baagi Environmental Consultancy appointed A Pelsers Archaeological Consultation to undertake a HIA for the proposed Ngwedi (Mogwase) Turn-ins Transmission Powerlines, North West Province, South Africa. The project was granted an Interim Review Comment by SAHRA in August 2013 requesting clarification on the treatment of Marothodi sites identified during the walkdown (*ANNEXTURE A*). In 2014 NGT Projects & Heritage Consultants was appointed by Baagi Environmental Consultancy and Eskom Holdings SOC Limited to undertake a permit application process for the proposed project. The permit was aimed at mitigating the affected Marothodi site complex within the old Ngwedi (Mogwase) Turn-ins Transmission Powerlines Servitude; the sites were identified by A. Pelsers of A Pelsers Archaeological Consulting in a report titled: A REPORT ON A HERITAGE WALKDOWN AND IMPACT ASSESSMENT FOR THE PROPOSED NGWEDI (MOGWASE) PROPOSED LINE CORRIDOR NEAR PILANESBERG, NORTHWEST PROVINCE. However, because the project had not been granted a Final Review Comment the permit application process was not possible. The next stage involved meeting and consultation between SAHRA, Eskom and Baagi – a process facilitated by NGT Projects & Heritage Consultants. A Final Review Comment was issued by SAHRA following this process. The Final Comment clearly stated that the Marothodi should be avoided at all costs and be treated as No-Go-Area because they are a Grade 1 heritage resource; meaning that they are of National Heritage importance (*e.g. ANNEXURE B & C*).

### **1.2. Project Proposed Aims**

The aim of the current study is to assess the potential impacts of the proposed ESKOM deviations as part of Ngwedi Turnings Transmission Line on the identified Marothodi Late Iron Age (LIA) sites and other identified heritage resources some which date to the historic period to recent burial ground and grave site. To make recommendation to the SAHRA on the potential impacts and management measures on how the sites should be treated or managed during project construction phase and post-construction phase.

### **1.3. Terms of Reference for the Appointment of Archaeologist and Heritage Specialist**

The nature and size of the proposed development – a Linear development of more 300m in extent and covering an area of more than 5000m<sup>2</sup> – required that an impact assessment study be undertaken in terms of Section 38 (1) of the NHRA, No. 25 of 1999. The study is also in-line with the NEMA, 107 of 1998 (as Amended in 2014) for the requirement of an EIA process for any environmental authorisation. Baagi Environmental Consultancy has been appointed by ESKOM Holdings to undertake the Environmental Impact Assessment (EIA) process for the proposed Ngwedi Turn-ins Transmission Powerlines deviations as part of an EIA process conducted in 2012. In turn, NGT Projects & Heritage Consultants (Pty) Ltd has been appointed by Baagi Environmental Consultancy as an independent and lead heritage management firm to conduct a HIA (exclusive of a Palaeontological study) for the proposed development as part of specialists (inputs) impact assessment studies required of the EIA process.

The appointment of NGT Projects & Heritage Consultants is in terms of the NHRA, No. 25 of 1999 (as amended), the NEMA, No.107 of 1998 (as amended 2014 and the applicable 2010 Regulations).

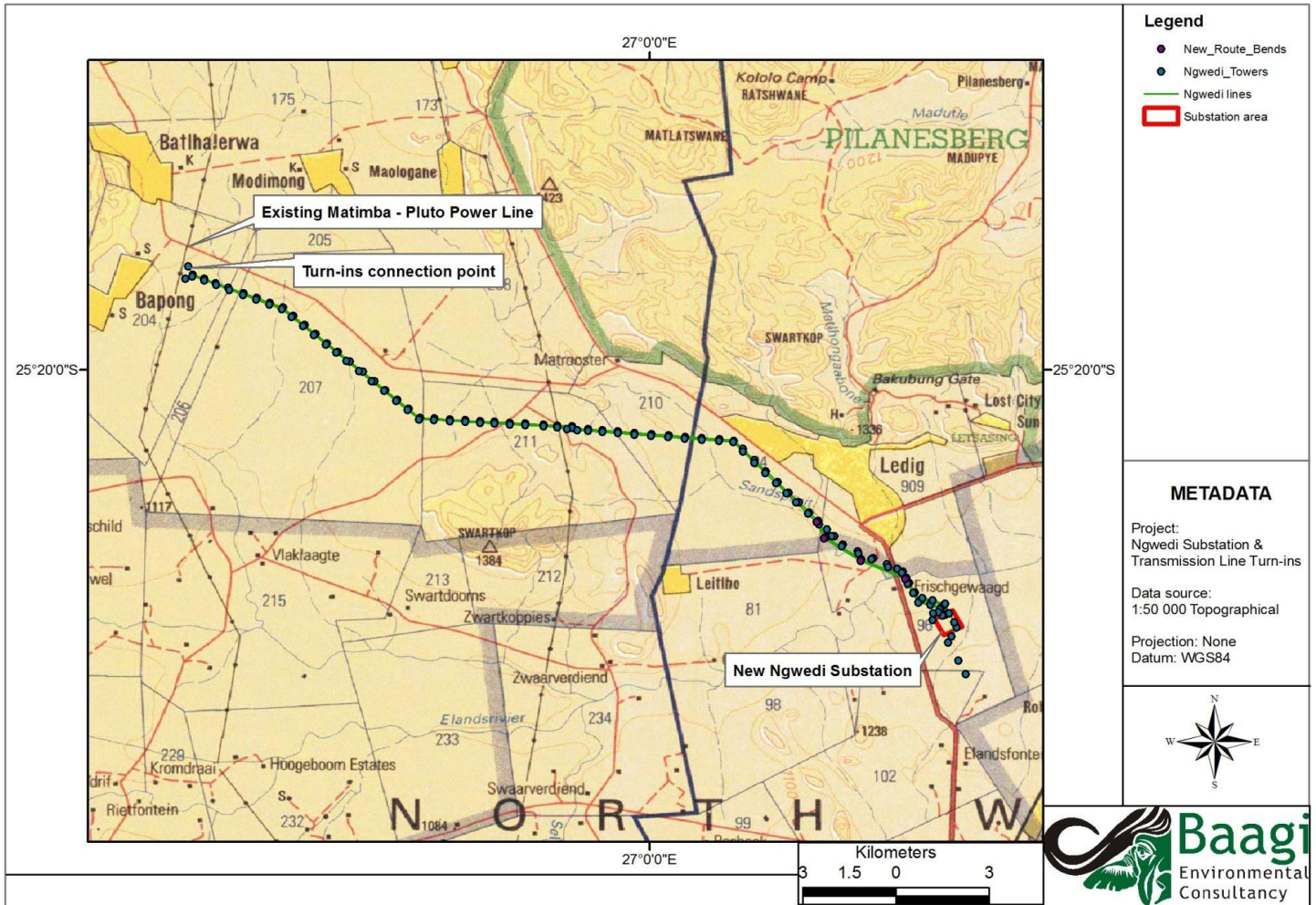


Figure 1: Map showing the location of the proposed Ngwedi Turnings Transmission Line, North West Province, South Africa.

## 2. CONTEXTUALISING THE STRUDY AREA

Rustenburg is one of the South Africa’s most favourable geographies through its mineral wealth that defined its unique landscapes in both the prehistoric and historic time. It is also a rich landscape in terms of living natural and cultural heritage. Besides the mining activities which define the current landscape, farming and other agricultural activities are favourable in the North West Province, South Africa where Rustenburg is situated. In terms of the South African Biomes, the North West Province falls within the Savannah and Grassland Biomes (Figure 1). With generally flat lands it also has some hills, valleys and mountains that were favourable in the prehistoric and historic times. Geologically the Rustenburg area and its surroundings are known to contain some of the most precious metals that influence the present-day economy of the country; amongst those being ores such as Platinum, Copper and Iron.

Archaeologically, the area is also known to have been a favourable environment and this has been attributed to one of the reasons why African farmers moved into the Rustenburg area. The underlying igneous rocks produce a rich, dark soil ideal for sorghum cultivation. Although the area suffers occasional dry spells, as elsewhere, the numerous hills ensure that it is generally well watered, and it suffers few frosts. In addition, the availability of iron and copper ores was another attraction.

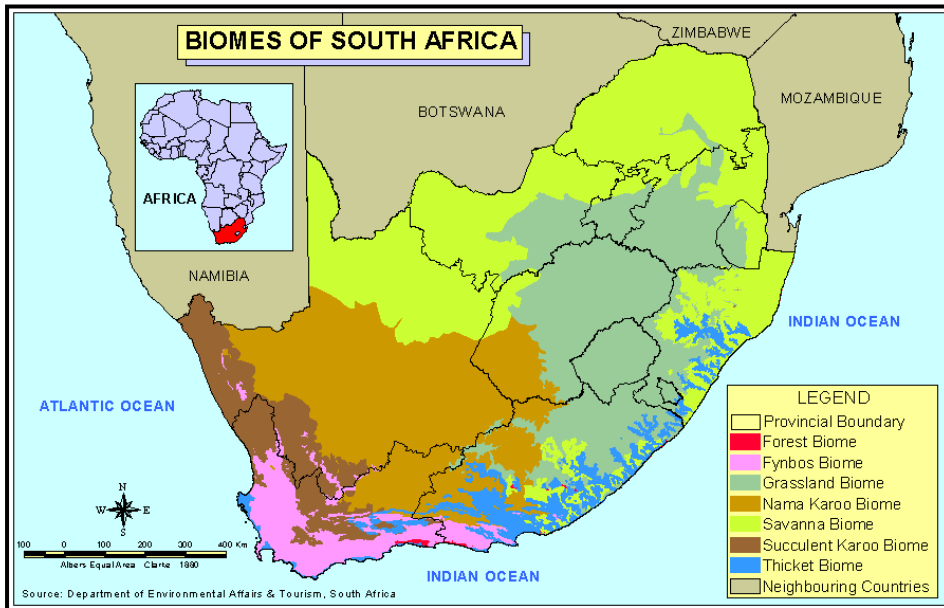


Figure 2- Biomes of South Africa (<http://www.calflora.net/southafrica/biomes1.html/> 18/ April/ 2015)

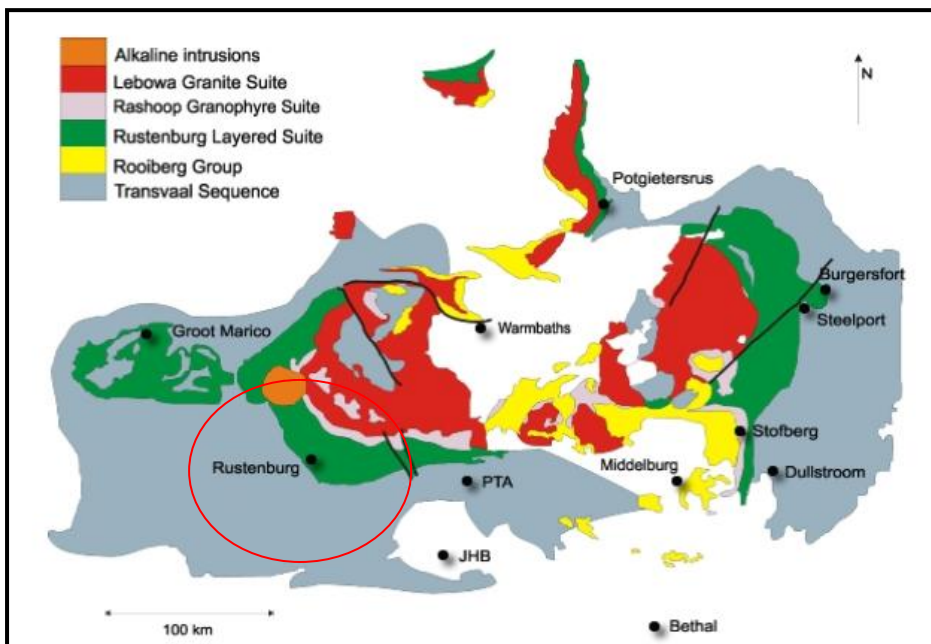


Figure 3- A simplified geological map of the Bushveld Large Igneous Province, which includes the Rustenburg layered Suite, the Rooiberg Volcanic and the Lebowa Granite Suite.

### 3. ARCHAEOLOGICAL AND HERITAGE BACKGROUND

The North West Province has a diverse archaeological and heritage past. Its archaeological past dates to the Early Stone Age archaeological period. Some of the sites that form part of the Cradle of Humankind World Heritage Site (COHWHS) extend to the North West Provinces even though the majority falls within Gauteng Province. The COHWHS is known to contain some of the earliest evidence of Stone Age activities in the country. For example, the earliest Oldowan stone tools date to ~2.0 mya and are found at four sites; Swartkrans (Sutton 2012), Sterkfontein (Kuman and Field 2009) and Kromdraai (Kuman and Field 1997) in the Cradle of Humankind in Gauteng Province and at Wonderwerk Cave (Chazen 2008) in the Northern Cape. Other Stone Age periods include the Middle Stone Age (MSA) dated between 300 k.y.a and 35 k.y.a (e.g. Sutton et al. 2014). The later period in Stone Age is dated between 35k.y.a to 2k.y.a. (e.g. Sutton et al. 2014). In other areas of South African there is evidence that hunter gatherers continued with their way of life up to the 19<sup>th</sup> Century. From the site of Leholamogo (28°49'32"E: 23°16'04"S) Stone Age artefacts recovered suggests hunter-gatherers continued their way of life in the area into the 19<sup>th</sup> century (Bradfield et al. 2009). The Stone Age is replaced in archaeological records by the Iron Age period.

The Iron Age like Stone Age has three archaeological periods, the Early Iron Age, the Middle Iron Age and the Late Iron Age. For example, according to Huffman (2007) the Iron Age marks the early evidence of farming communities in southern Africa. Animal husbandry, crop farming, pottery and metal working were introduced which in due time liberated hunter gatherers to change their predominately mobile way of life (Carruthers 1990). Due to vast technological discrepancies and settlement patterns within this period, researchers divided the Iron Age into three periods. The Early Iron Age (EIA) dates to AD 200 – 900, Middle Iron Age (MIA) dates to AD 900 – 1300, and the Late Iron Age (LIA) dates to AD 1300 – 1840 (Huffman 2007).

The Rustenburg area in which our study is located is known for its Middle and Late Iron Age sites, such as sites associated with amongst other groups: the Kgatla, the Fokeng and the Tlokwa people (Coetzee 2005). According to Coetzee, the Rustenburg/Pilanesberg area was dominated by these three main rival groups (*ibid*). In 2012 in an HIA study for Ngwedi Turnings A. Pelsler identified a number of heritage sites in the Rustenburg/Pilanesberg area. He defined the sites as Marothodi sites. Marothodi Iron Age Sites are LIA sites associated with among other groups the Fokeng and the Tlokwa people (e.g. Coetzee 2005). Boeyens (2005) also argues for the settlement of Marothodi by the Tlokwa people in the eighteenth century. This also attested by Anderson (2005) and Mason (1986) who argues for large stone

walled town west of Pilanesberg with pottery similar to that of *Uitkomst*. Huffman (2010 in SAHO) argues that the Tlokwa people part of the Fokeng cluster. He uses the range of identities associated with *Uitkomst* sequence north and south of the Vaal River for the inclusion of the Tlokwa in the Fokeng cluster (e.g. Huffman, 2007). The relations between the two groups including the Kgatla are also asserted by Coetzee (2005).

It therefore becomes important to understand the relations between the Tlokwa and the Fokeng people since we have ascertained the relationship between the Tlokwa and the Marothodi sites. Also important in understanding the relations is the argument by Huffman that the Tlokwa form part of the Fokeng cluster.

The Tlokwa people are defined as one of the clusters within the Fokeng group which Huffman places it within the four major clusters of the Sotho-Tswana people; others clusters are the Hurutshe, the Rolong, the Kgatla (2007:429). Piecing together archaeological records, linguistics and historical accounts:

The Hurutshe cluster includes groups who "...descended from the Malope and his father Masilo who lived at Rathateng near Marico and Crocodile confluence between AD1440 and 1560"; while some groups of the Hurutshe claim descent from the "waterhole of Lowe in Botswana" (*Figure 3*) (Huffman, 2007: 429). This group also includes the following clusters: the Kwena, Ngwaketse, Ngwato and Twana (*idem*). The Kwena become important in unpacking and understanding the history and archaeology of the people associated with the Marothodi sites. If the Botswana waterhole of Lowe account is taken to be true, the Kwena cluster which moved across the Vaal River between AD 1550 and 1650 becomes one of the forefathers of the Tlokwa associated with Marothodi (*Figure 3*). Across the Vaal River the Kwena found and interacted with the Fokeng at Ntsuanatsatsi Hill. Here the Kwena inter-married with the Fokeng forming the Kwena-Fokeng who migrated across the Vaal River in the 17<sup>th</sup> Century. The Fokeng seem to have dominated the interaction between the Kwena because the Fokeng settlement and material culture is recorded across the Vaal River into Balfour (in Mpumalanga), Klipriviersberg (Gauteng), Vredefort area and the Rustenburg/Pilanesberg. Across the Vaal River, assessment of pottery associated with Type N stone is dominated by Ntsuanatsatsi pottery. The Ntsuanatsatsi pottery is thrown away from the Sotho-Tswana derived *Icon* pottery dominantly associated with the Sotho-Tswana from Botswana, Limpopo Province and Mpumalanga (AD circa 1300 and 1500). Deductively, if the Ntsuanatsatsi pottery is argued to dominate pottery associated with the Type N stonewalling and the Fokeng across the Vaal and its lack of dominant characteristics of the *Icon* pottery, the argument would be that the Fokeng possibly dominated the Kwena-Fokeng interaction south of the Vaal River. The Ntsuanatsatsi pottery lacks "bowls decorated with multiple spaced bands of texturing and colour characteristic of *Icon*" and is dominated by comb stamping and figure pinching as a decoration technique.



Furthermore, this variable in pottery characteristic across the Vaal is argued to have influences of the Nguni people (Huffman, 2010 in SAHO). This is probably why archaeologist argues for Nguni ancestry for the Fokeng people. For example, Huffman argues that the Fokeng arrived in Rustenburg in the 17<sup>th</sup> Century and goes on to say, oral traditions trace them south of the Vaal River (*ibid*). In Rustenburg, the Fokeng met other Sotho-Tswana groups and became “Sotho-ised” through various interactions and intermarriage. During the “Sotho-isation” their pottery also changed to *Uitkomst* (*ibid*). *Uitkomst* pottery is the pottery that has been associated with the Tlokwa people at Marothodi who are also argued to have been relations with the Kgatla and the Fokeng by Coetzee (2005).

Geologically speaking the area in which the Marothodi sites are located in known to contain among other precious metals copper reserves. This, together with other factors highlighted Section 2 of this report could have resulted in the selection of the area as a preferred place of settlement during the Iron Age by the different or various Sotho-Tswana people as argued above such as the Tlokwa, Kgatla and the Fokeng suggested by Coetzee (2005). According to Huffman (2010 in SAHO), the “Tlokwa mined copper ores from a shallow deposit not far from their capital town of Marothodi west of the Pilanesberg”. Numerous iron and copper smelters have been recorded between the stonewalled homesteads in those Marothodi sites that have been excavated. Other material culture include evidence of metal workers which worked secondary crucible furnaces for copper in small enclosures attached to the outer wall of the residential zone.

In terms of spatial organisation, Huffman argues that – “This location is probably part of a complex of ideas that associate women with copper and men with iron” (2010 in SAHO).

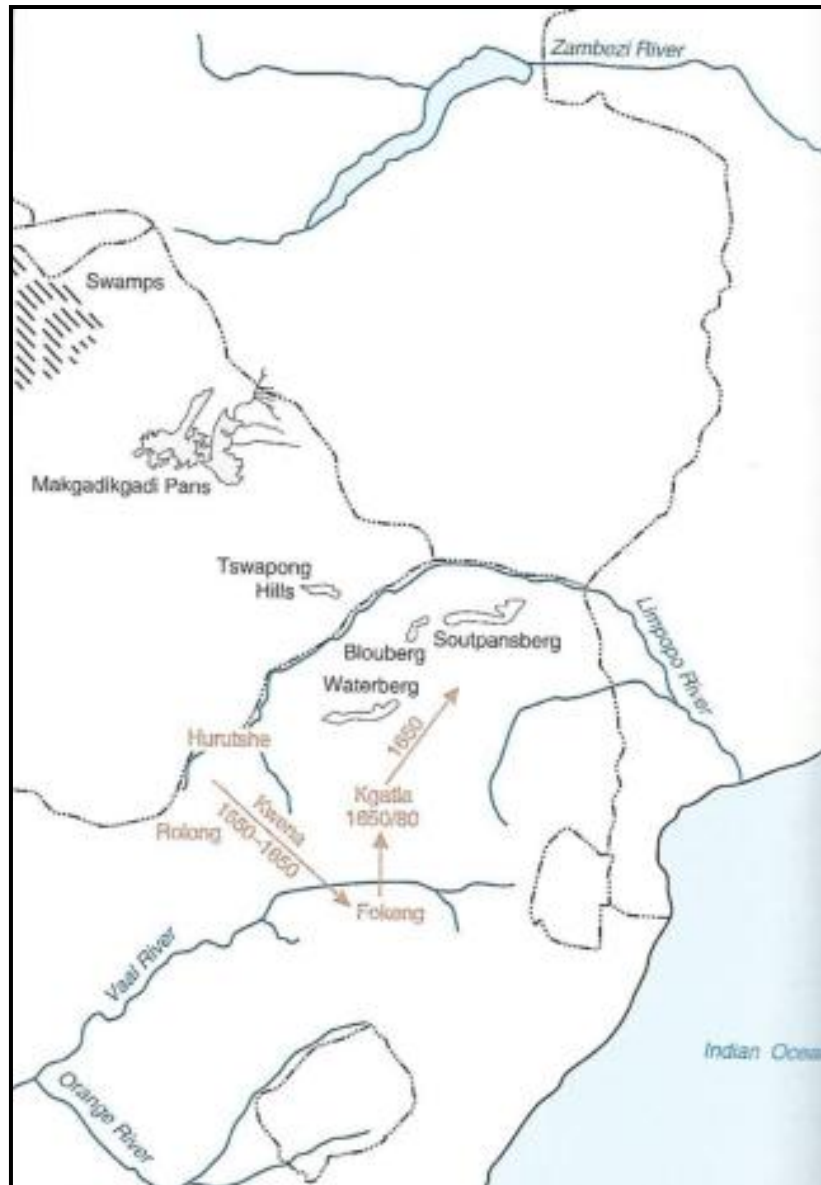


Figure 4- Spread of the Iron Age Communities associated with the Tlokwa people who are associated with the Fokeng and the Marothodi sites

## Conclusions

- We can conclude that the Marothodi sites are associated with the Tlokwa people who form part of the Fokeng cluster
- They mined copper and also worked metal
- The pottery is associated with *Uitkomst*
- They built Type N stonewalling similar to that of the Fokeng people also found south of the Vaal River

## 4. METHODOLOGY

### 4.1. Legislative Requirements

The NEMA No. 107 of 1998 (Amendment) stipulates that before any development in South Africa is granted permission to proceed an impact assessment must be completed. The impact assessment and evaluation process assesses potential impacts of the proposed development on both the natural and cultural environments (Section 24). This assessment report fulfils the requirements of NEMA and is conducted in terms Section 38 (1) of the NHRA, No. 25 of 1999.

### 4.2. Methodology

This section outlines the methodologies used in conducting this study assessing the deviations made by Eskom in mitigation of Marothodi sites in North West Province, South Africa. The study is conducted in accordance to the Terms of Reference provided by the client it's completion.

#### 4.2.1. Step I - Literature Review (Desktop Phase)

The first point of departure was to assess and evaluate the HIA that SAHRA gave a preliminary review on titled: **A REPORT ON A HERITAGE WALKDOWN AND IMPACT ASSESSMENT FOR THE PROPOSED NGWEDI (MOGWASE) PROPOSED LINE CORRIDOR NEAR PILANESBERG, NORTHWEST PROVINCE.**

- Published academic papers and books were studies to give context to the broader area.
- We made used of client maps and maps from published books
- We reviewed the relevant environmental and heritage legislations such as the NEMA as Amended in 2014 (together with the 2010 EIA Regulations) and the NHRA.

#### **4.2.2. Step II – Physical Survey**

The physical survey of the proposed was conducted by Sibusiso Tomose in March 2015.

- The survey covered areas with known sensitive heritage sites and sites that in the 2012 report were suggested to have a potential to be impacted by the current proposed development.
- Photos of the sites were taken using Samsung camera
- Lat/Long coordinates were taken using Garmin GPSmap 62s.
- The objective of the survey was to confirm the potential impacts of the proposed Eskom deviation on the Marothodi sites and any other sites that could be identified in the survey.

#### **4.2.3. Step III – Data Consolidation and Report Writing**

All the data captured on the development area by means of a desktop study and physical survey is used as a baseline for this HIA. This data is also used to establish assessment for any possible current and future impacts within the development footprint. This includes the following:

- Assessment of the significance of the cultural resources in terms of their archaeological, built environment and landscape, historical, scientific, social, religious, aesthetic and tourism value.
- A description of possible impacts of the proposed development, especially during the construction phase, in accordance with the standards and conventions for the management of cultural environments.
- Proposal of suitable mitigation measures to minimize possible negative impacts on the cultural environment and resources that may result during construction.
- Review of applicable legislative requirements. As discussed in section 1.3 above under Terms of Reference for the Appointment of Archaeologist and Heritage Specialist.
- Highlighting of assumptions, exclusions and key uncertainties that have arisen during the course of this study. Chapter 4 of this report addresses this concern.
- The consolidation of the data collected using the various sources as described above.
- Acknowledgement of impacts on heritage resources (such as unearthed graves) predicted to occur during construction.
- A discussion of the results of this study with conclusions and recommendations based on the available data and study findings.

#### **4.2.4. Assessment of Site Significance in Terms of Heritage Resources Management Methodologies**

The significance of heritage sites was based on four main criteria:

- Site integrity (i.e. primary vs. secondary context);
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures);
  - Density of scatter (dispersed scatter)
  - Low - <10/50m<sup>2</sup>
  - Medium - 10-50/50m<sup>2</sup>
  - High - >50/50m<sup>2</sup>
- Uniqueness; and
- Potential to answer present research questions.

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

- A - No further action necessary;
- B - Mapping of the site and controlled sampling required;
- C - No-go or relocate pylon position;
- D - Preserve site, or extensive data collection and mapping of the site; and
- E - Preserve site

Impacts on these sites by the development will be evaluated as follows:

#### ***Site Significance***

The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by the ASAPA for the SADC region were used for the purpose of this report.

**Table 1: Site significance classification standards as prescribed by SAHRA**

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
<b>National Significance (NS)</b>	Grade 1	-	Conservation; National Site nomination
<b>Provincial Significance (PS)</b>	Grade 2	-	Conservation; Provincial Site nomination
<b>Local Significance (LS)</b>	Grade 3A	High Significance	Conservation; Mitigation not advised
<b>Local Significance (LS)</b>	Grade 3B	High Significance	Mitigation (Part of site should be retained)
<b>Generally Protected A (GP.A)</b>	-	High / Medium Significance	Mitigation before destruction
<b>Generally Protected B (GP.B)</b>	-	Medium Significance	Recording before destruction
<b>Generally Protected C (GP.A)</b>	-	Low Significance	Destruction

#### **4.2.5. Methodology for Impact Assessment in terms of Environmental Impact Assessment Methodologies including Measures for Environmental Management Plan Consideration:**

The Basic Assessment Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the Basic Assessment & Environmental Impact Assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts:

The Basic Assessment included:

- an indication of the methodology used in determining the significance of potential environmental impacts
- a description of all environmental issues that were identified during the environmental impact assessment process
- an assessment of the significance of direct, indirect and cumulative impacts in terms of the following criteria:
  - the *nature* of the impact, which shall include a description of what causes the effect, what will be affected and how it will be affected
  - the *extent* of the impact, indicating whether the impact will be local (limited to the immediate area or site of development), regional, national or international

- the *duration* of the impact, indicating whether the lifetime of the impact will be of a short-term duration (0–5 years), medium-term (5–15 years), long-term (> 15 years, where the impact will cease after the operational life of the activity) or permanent
  - the *probability* of the impact, describing the likelihood of the impact actually occurring, indicated as improbable (low likelihood), probable (distinct possibility), highly probable (most likely), or definite (impact will occur regardless of any preventative measures)
  - the *severity/beneficial scale*, indicating whether the impact will be very severe/beneficial (a permanent change which cannot be mitigated/permanent and significant benefit, with no real alternative to achieving this benefit), severe/beneficial (long-term impact that could be mitigated/long-term benefit), moderately severe/beneficial (medium- to long-term impact that could be mitigated/ medium- to long-term benefit), slight or have no effect
  - the *significance*, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high
  - the *status*, which will be described as either positive, negative or neutral
  - the *degree* to which the impact can be reversed
  - the *degree* to which the impact may cause irreplaceable loss of resources
  - the *degree* to which the impact can be *mitigated*
- 
- a description and comparative assessment of all alternatives identified during the environmental impact assessment process
  - recommendations regarding practical mitigation measures for potentially significant impacts, for inclusion in the Environmental Management Plan (EMP)
  - an indication of the extent to which the issue could be addressed by the adoption of mitigation measures
  - a description of any assumptions, uncertainties and gaps in knowledge
  - an environmental impact statement which contains:
    - a summary of the key findings of the environmental impact assessment;
    - an assessment of the positive and negative implications of the proposed activity (one alternative only in EIA phase);

- a comparative assessment of the positive and negative implications of identified alternatives

### **Assessment of Impacts**

Direct, indirect and cumulative impacts of the issues identified through the scoping study, as well as all other issues identified in the EIA phase must be assessed in terms of the following criteria:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The extent, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The duration, wherein it will be indicated whether:
  - the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
  - the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
  - medium-term (5–15 years) – assigned a score of 3;
  - long term (> 15 years) - assigned a score of 4; or
  - permanent - assigned a score of 5;
- The magnitude, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The probability of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).



- the significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- The status, which will be described as positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The *degree* to which the impact can be *mitigated*.

The significance is calculated by combining the criteria in the following formula:

$$S = (E+D+M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

Table 2 -The significance weightings for each potential impact are as follows:

Aspect	Description	Weight
<b>Probability</b>	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
<b>Duration</b>	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
<b>Scale</b>	Local	1
	Site	2
	Regional	3
<b>Magnitude/Severity</b>	Low	2
	Medium	6
	High	8
<b>Significance</b>	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20 ≤40
	Moderate	>40 ≤60
	High	>60

Assessment of impacts must be summarised in the following table format (*Table 3 & 4*). The rating values as per the above criteria must also be included.

**Table 3: Example of Impact table summarising the significance of impacts (with and without mitigation)**

<b>Nature:</b>		
	Without Mitigation	With Mitigation
<b>Extent</b>	High (3)	Low (1)
<b>Duration</b>	Medium-term (3)	Medium-term(3)
<b>Magnitude</b>	Moderate (6)	Low (4)
<b>Probability</b>	Probable (3)	Probable (3)
<b>Significance</b>	36 (Medium)	24 (Low)
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Low	Low
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	
<b>Mitigation: Mitigation Measures</b>		
<b>Cumulative impacts: Cumulative Impacts</b>		
<b>Residual Impacts: Residual Impacts</b>		

**Table 4: Measures for the inclusion in the Final Environmental Management Plan:**

<b>OBJECTIVE: Description of the objective, which is necessary in order to meet the overall goals; these take into account the findings of the environmental impact assessment specialist studies.</b>		
<b>Project component/s</b>	List of project components affecting the objective	
<b>Potential Impact</b>	Brief description of potential environmental impact if objective is not met	
<b>Activity/risk source</b>	Description of activities which could impact on achieving objective	
<b>Mitigation: Target/Objective</b>	Description of the target; include quantitative measures and/or dates of completion	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
<b>List specific action(s) required to meet the mitigation target/objective described above</b>	Who is responsible for the measures	Time periods for implementation of measures
<b>Performance Indicator</b>	Description of key indicator(s) that track progress/indicate the effectiveness of the management plan.	

<b>Monitoring</b>	Mechanisms for monitoring compliance; the key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting
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## 5. ASSUMPTIONS AND LIMITATIONS

The following exclusions or limitations have direct consequence to the study and its results:

- The project footprint covered area with known heritage resources in two days surveys
- The survey was conducted in December, summer period - as such there was high level of vegetation cover for the archaeologist/heritage surveyor to pick up all the different archaeological and heritage features in the landscape such as unmarked graves and Stone Age artefacts like stone tools. This forms one major limitation in terms of observing and recording all forms of archaeological and heritage sites in the surveyed landscape.
- No formal heritage social consultation took place within the scope of this study.

### 5.1. Uncertainties

Heritage studies like most other specialist studies often experience many challenges during and after the physical survey of the proposed development area. From an archaeological and general heritage perspective - the assumption is often made that the amount of identified archaeological and heritage resources during a physical survey of the proposed development area represents the sum of the total amount of resources that exist in and around the development area. This is often not true because the nature of some the archaeological and heritage resources being subterranean in nature and as such, one cannot totally rule out their presence or existence within the project area. These resources may be exposed or brought to the surface during the construction phase of the project which will involve excavation for foundations of the homes. This presents one of the major uncertainties regarding the 'holistic' management of archaeological and heritage resources within the project footprint. Archaeologists and heritage specialists refer to the discovery of such resources as chance finds and to mitigate such uncertainty - it is always advised that should such chance finds be made of archaeological and heritage resources the ECO should report them to the nearest SAHRA

office or museum or call an archaeologist and/or heritage specialist to investigate the finds and make necessary recommendations.

## 6. FINDINGS

The background information search on the Marothodi sites and the interaction between NGT Projects & SAHRA confirmed that the Marothodi sites are an important cultural resource in South Africa. In terms of heritage grading these sites are Grade 1 cultural resource- meaning that they are of national importance. Therefore no development should impact on them regardless of the level of impact. This was also confirmed by Scheermeyer (pers.comm/Feb/2015).

### 6.1. Field Survey and Identified Archaeological/Heritage Resources

<b>Site Name:</b>	NGW 1
<b>Type:</b>	Archaeological site– Historical Period/Archaeology
<b>Density:</b>	Low Density
<b>Location/GPS Coordinates:</b>	S 25°18'43.6" E 26°53'06.4"
<b>Approximate Age:</b>	Older than 90 years
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	This is a heritage site that consists of round and square ruin foundations. The site is located on the open field on the western end of Ngwedi Turnings Transmission Line. The site is associated with the First South Africa War and has structure that resemble blockhouse. The site falls within an area with a proposed tower movement by the environmentalist – this mean it will be avoided ( <i>Figure 4</i> ). The tower is proposed to be moved 50m north of its current position ( <i>Figure 14</i> ).

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>LS</b>	Grade 3A	Site	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer, Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	



Figure 5-Ruins within tower 146 with round stone built

<b>Site Name:</b>	NGW 2
<b>Type:</b>	Archaeological site – Historical Period/Archaeology
<b>Density:</b>	High
<b>Location/GPS Coordinates:</b>	S 25°18'44.1" E 026°53'08"
<b>Approximate Age:</b>	Older than 90 years
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	This is a heritage site consist of round and square ruin foundations. The round structure is a typical block house structure in the South African Wars (Figure 6).



**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>LS</b>	Grade 3A	Site	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer, Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	



Figure 6-Round stone built with no entrance

<b>Site Name</b>	NGW 3a & b /NG 26
<b>Type:</b>	Archaeological site –Iron Age Period
<b>Density:</b>	High
<b>Location/GPS Coordinates:</b>	S 25°19'10.6" E 026°53'58.8"
<b>Approximate Age:</b>	+/- 500 years ago /16 <sup>th</sup> Century
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	<p>This is one of Marothodi clusters heritage sites. The site consists of one big stone wall with an internal round kraal with smaller round shape structures defining its perimeter wall. The site shape resembles a 'fried egg shape' feature and built using large stones/rocks on the outer and internal walls (<i>Figure 7</i>). This is a typical Marothodi site as depicted in the attached images extrapolated from Huffman (2007) (<i>Figures 12 &amp; 13</i>). The middle of the walls is field with small stones. The site is located on the flat lands within an area currently utilising as grazing fields. This is most probably one of the earliest Marothodi sites since the later period sites are built in defensive areas – either against mountain or hill slopes or on top of mountains or hill tops in defence against intruders. The latter are typical of Marothodi sites of the later period some witch date to the time of <i>Imfecane</i>. The site is covered by dense acacia vegetation.</p>

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>NS</b>	Grade 1	Regional	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer, Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	



Figure 7- Showing a possible kraal within the grazing fields. Note the acacia vegetation in and around the stone wall.

<b>Site Name:</b>	NGW 4 /NG 24
<b>Type:</b>	Archaeological site –Iron Age Period
<b>Density:</b>	Low Density
<b>Location/GPS Coordinates:</b>	S 25°20'56.4" E 026°57'35.7"
<b>Approximate Age:</b>	Older than 90 years
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	This site consists of stone wall foundations and a grave. The site is located on the western slope of Hill-01. The entire site is covered in thick vegetation.

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>NS</b>	Grade 1	Regional	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer, Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	





Figure 8-Photo showing a possible grave within the heritage site. Blue arrow and the red circle show the extent of the graves. The white arrows show the stone foundation ruins.

<b>Site Name:</b>	NGW 5 /NG19-20
<b>Type:</b>	Archaeological site –Iron age Period
<b>Density:</b>	High Density
<b>Location/GPS Coordinates:</b>	S 25°20'58.9" E 026°57'53.0"
<b>Approximate Age:</b>	+/- 415 years ago/ 17 <sup>th</sup> Century
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	
<p>This is one of Marothodi clusters heritage sites. The site consists of one big stone wall with an internal round kraal with smaller round shape structures defining its perimeter wall. The site shape resembles a 'fried egg shape' feature and built using large stones/rocks on the outer and internal walls (Figure 9). This is a typical Marothodi site as depicted in the attached images extrapolated from Huffman (2007) (Figures 12 &amp; 13). The middle of the walls is field with small stones. The site is built against the hill slope typical of the later period of Marothodi sites as defined in description of site NGW 3 /NG 26 above. The site is found south-east of Hill-01. The entire site is covered in dense vegetation. Some of the stone walls that form the site are starting to crumble while others have fallen already. Other walls are stick intact (red arrow in the figure below)</p>	

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>NS</b>	Grade 1	Regional	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	<p>The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation:</p> <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	



Figure 9-Marothodisites built against the hill slope. Note the red arrow showing an intact section of the wall.

<b>Site Name:</b>	NGW 6 /NG 17-18
<b>Type:</b>	Archaeological site –Iron age Period
<b>Density:</b>	High Density
<b>Location/GPS Coordinates:</b>	S 25°20'57.0" E 026°58'03.8"
<b>Approximate Age:</b>	+/- 415 years ago/ 17 <sup>th</sup> Century
<b>Applicable NHRA Section:</b>	Section 35
<b>Description:</b>	
<p>This is one of Marothodi clusters heritage sites. The site consists of one big stone wall with an internal round kraal with smaller round shape structures defining its perimeter wall. The site shape resembles a 'fried egg shape' feature and built using large stones/rocks on the outer and internal walls (<i>Figure 10</i>). This is a typical Marothodi site as depicted in the attached images extrapolated from Huffman (2007) (<i>Figures 12 &amp; 13</i>). The middle of the walls is field with small stones. The site is built against the hill slope typical of the later period of Marothodi sites as defined in description of site NGW 3 /NG 26 and site NGW 5 /NG19-20above. The site is found west of Hill-02 against the hill slope. West of the site is a valley that separates Hill-01 and Hill-02. The entire site is covered in dense vegetation – site is visible from where it starts and the rest is covered by thick vegetation as noted above.</p>	

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>NS</b>	Grade 1	Regional	High	Low	High Significance	Highly Probable	Improbable	Short term	C - avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on this grave site.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short- term (1)			
<b>Magnitude</b>			High (8)			Low (2)			
<b>Probability</b>			Highly Probable (5)			Improbable (1)			
<b>Significance</b>			65 (High)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			High			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
<ul style="list-style-type: none"> <li>• The site should be avoided and be treated as No-Go-Area. No machinery or other construction activities should be placed near the site and no stones or any other materials should be salvaged from the sites. <ul style="list-style-type: none"> <li>○ <u>It should be noted that the Developer, the EAP and the appointed ECO will be responsible for all damages that may result from contractors negligence.</u></li> </ul> </li> </ul>									
<b>Cumulative impacts:</b>									
The site is not in a pristine condition but still intact. There are no predicted cumulative impacts on the site since the site since the site will be treated as a No-Go-Area.									
<b>Residual Impacts:</b>									
The project will not have direct impacts on the site. Therefore there are no predicted residual impacts on these sites.									

**Measures for the inclusion in the Final Environmental Management Plan:**

<b>OBJECTIVE:</b>		
The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.		
<b>Project component/s</b>	<b>Construction phase</b>	
<b>Potential Impact</b>	Destruction of the site during construction phase of the project due to none compliance with the proposed mitigation measures – treating the site as a No-Go-Area.	
<b>Project component/s</b>	<b>Operational phase</b>	
<b>Potential Impact</b>	<ul style="list-style-type: none"> <li>There are not predicated impacts from the proposed Transmission Line</li> </ul>	
<b>Activity/risk source</b>	Exclusion of the above objectives from the overall Environmental Management Plan.	
<b>Mitigation: Target/Objective</b>	An EMP should be developed by the client and it should incorporate all the mitigation measures developed to manage or mitigate the graves identified on site to ensure that they are well protected.	
<b>Mitigation: Action/control</b>	Responsibility	Timeframe
With the approval of the project, Eskom Environmental Advisor and key project team members should induct the ECO should on the importance of heritage resources. The ECO should always ensure that the site and other heritage resources are avoided and treated as a No-Go-Area during the construction phase of the project.	Developer, the Eskom Environmental Advisor and key project team members and the appointed ECO	Prior and during the construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	Eskom Environmental Advisor and key project team members should ensure that the project ECO protects the site and that they are treated as No-Go-Area.	

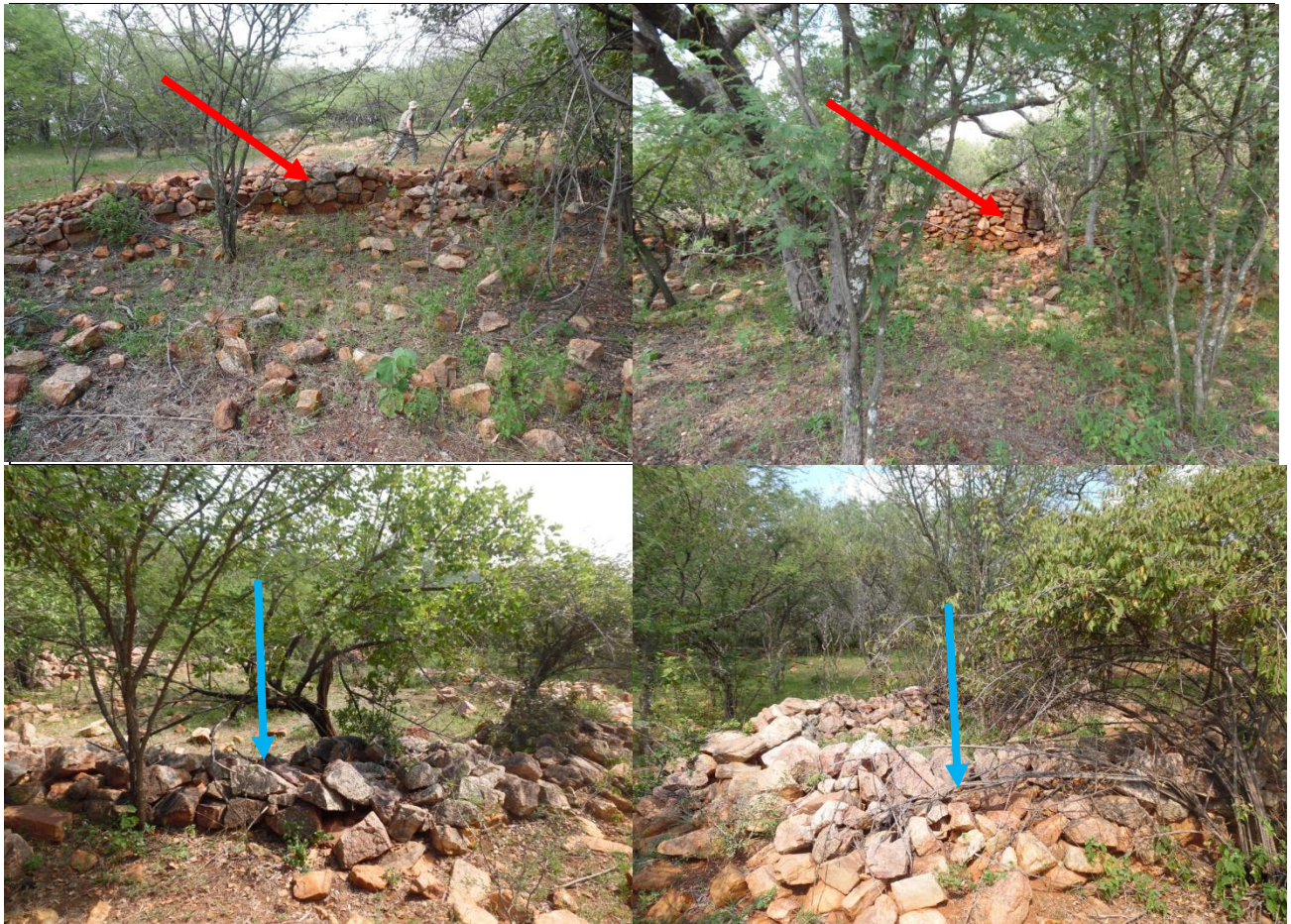


Figure 10- A Marothodi site with smaller round circles (blue arrows). The red arrows show section of the stone walls that are still intact.

<b>Site Name:</b>	NGW 7
<b>Type:</b>	Burial Grounds and Graves
<b>Density:</b>	High Density
<b>Location/GPS Coordinates:</b>	S 26°07'18.1" E 027°57'41.0"
<b>Approximate Age:</b>	Less than 60 years
<b>Applicable NHRA Section:</b>	Section 36
<b>Description:</b>	
This is a recent cemetery with approximately 36 graves. Some of the graves have granite headstones and dressing. Other graves have stone mound dressing and headstones. The cemetery is active – meaning that it is in use (Figure 11).	

**Nature of Impacts, Assessments & Predictions in terms of Standard Heritage & Basic Assessment (i.e. adopted from Standard Environmentally Basic Assessment Guidelines):**

Field Rating	Grade	Impact	WOM	WM	Heritage Significance	Certainty of Impacts WOM	Certainty of Impacts WM	Duration	Mitigation
<b>GPA</b>	Grade 3C	Localised	Moderate	Negligible	High Significance	Highly Probable	Improbable	Short term	C – avoid
<b>Nature: Construction activities as well as the operational phase may negatively impact on the grave sites.</b>									
			<b>Without Mitigation</b>			<b>With Mitigation</b>			
<b>Extent</b>			Site (2)			Local (1)			
<b>Duration</b>			Permanent (5)			Short-term (1)			
<b>Magnitude</b>			Medium (6)			Low (2)			
<b>Probability</b>			Highly Probable (4)			Improbable (1)			
<b>Impact Significance</b>			52 (Moderate)			4 (Negligible)			
<b>Status (positive or negative)</b>			Negative			Positive			
<b>Reversibility</b>			Irreversible			Low			
<b>Irreplaceable loss of resources?</b>			Yes			No			
<b>Can impacts be mitigated?</b>			Yes						
<b>Mitigation:</b>									
The cemetery should be avoided and treated as a No-Go-Area.									
<b>Cumulative impacts:</b>									
The cemetery is situated some distance away from the proposed deviations and will not be impacted. Therefore there will be no cumulative impacts on the site.									
<b>Residual Impacts:</b>									
N/A									



**Measures for the inclusion in the Final Environmental Management Plan:**

**OBJECTIVE:**

The overall goal is to identify, manage and conserve heritage resources within and immediately outside the proposed development area footprint.

Project component/s	<b>The construction phase</b>	
Potential Impact	In cases where the cemetery is not avoided and treated as a No-Go-Area it may be impacted by the construction activities of the proposed Ngwedi Transmission Line.	
Project component/s	<b>The operational phase</b>	
Potential Impact	N/A	
Activity/risk source	Exclusion of the above objectives from the overall Environmental Management Plan	
Mitigation: Target/Objective	The site should be avoided and treated as No-Go-Area by all means	
<b>Mitigation: Action/control</b>	<b>Responsibility</b>	<b>Timeframe</b>
With the approval of the project, Eskom Environmental Advisor and key project team members should on the importance of heritage resources. The ECO should always ensure that the cemetery and other heritage resources are avoided and treated as a Mo-Go-Area during the construction phase of the project.	EAP in consultation with the appointed Eskom Environmental Advisor and key project team members.	Prior to the construction phase and during construction phase of the project.
<b>Performance Indicator</b>	The type of indicator used here will be <b>Actionable Indicators</b> – this will measure action/progress in terms of completion of the above objectives with the approval of the project against their actual implementation: <ul style="list-style-type: none"> <li>Measuring the effective implementation of proposed mitigation measures for the mitigation of affected heritage resources.</li> </ul>	
<b>Monitoring</b>	With the approval of the project Eskom Environmental Advisor and key project team members should ensure that the graves are protected and not disturbed at all times.	



*Figure 11- A cemetery with approximately 36 identifiable graves.*

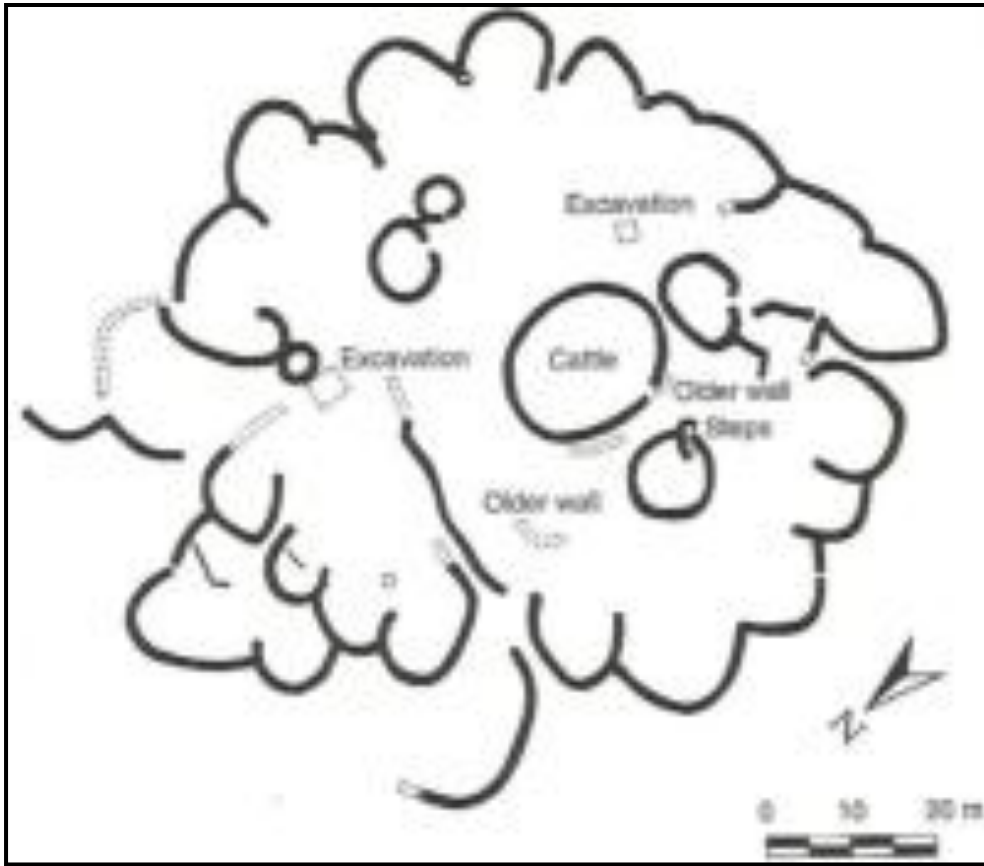


Figure 12- A sketch diagram showing typical design or spatial arrangement of a Marothodi site (after Huffman, 2007).



Figure 13- An Arial View of a typical Marothodi site (after Huffman, 2007).

## 7. DISCUSSION

The desktop study yielded information about the existence of archaeological and other heritage resources in the study area and the wider surrounding. The known and recorded heritage resources in the area included Marothodi Iron Age sites described in Pelsler (2012) HIA report for the proposed Ngwedi Turn-ins Transmission Powerlines and a burial ground and grave sites in form of a cemetery with approximately 36 graves in stone mound dressing and headstones and granite dressing and headstones. The Marothodi sites are what triggered the current study following a Final Review Comment issued for the HIA completed in 2012 by A Pelsler. Following discussions with SAHRA, Eskom, Baagi and NGT Projects & Heritage Consultants it was agreed that Eskom should deviate its Ngwedi Turn-ins Transmission Powerlines away from the Marothodi sites (*ANNEXURE B & C*). SAHRA wanted to completely avoidance of these sites because they are Grade 1 cultural resources and of National importance. Equally important is that these sites are central to the understanding of the development and the rise of the current Sotho-Tswana people in the region. Therefore the Marothodi sites are unique Iron Age (Late Iron Age) sites in South Africa; their associated with a community of people and pivotal for furthering research endeavours by various institutions, archaeologists and historian alike. Based on these reasons and on the fact that the developer is willing to comply with the heritage laws and on the understanding of the importance of conserving of South Africa nation estate; this heritage assessment report was compiled by NGT Projects & Heritage Consultants following a heritage survey of the proposed development area in March 2015. The identified site varied in nature and size, they included Late Iron Age sites (i.e. the Marothodi Iron Age sites), two historic sites and 1 burial grounds and graves site in form of a recent and active cemetery. The sites were given the following site names:

- **Late Iron Age sites** (in brackets are A Pelsler site definitions): NGW 3a (NG 26) and 3b (NG 25); NGW-4 (NG 24); NGW-5 (NG 19-20); and NGW-6 (NG 17-18)
- **Historic Period:** NGW-1 and NGW-2
- **Burial Grounds and Graves:** NGW-7

The identified heritage resources were assessed and evaluated in terms of their heritage significance, furthermore the assessment and evaluation process was based on the impact of the proposed development on these resources. These processes yielded the following results about the project area:

- Out of 7 sites a total of 5 sites were assessed to be of **high heritage significance**, namely: NGW 3a (NG 26) and 3b (NG 25); NGW-4 (NG 24); NGW-5 (NG 19-20); and NGW-6 (NG 17-18) and NGW-7
- Two sites assessed to be of **medium heritage significance**, namely: NGW-1 and NGW-2
- In terms of impact significance of the project on the identified heritage resources only sites 2 site of medium significance would have had a negative potentially impact from the proposed deviations; however, the environmentalist proposed a tower movement by 50m north from the area were these sites are located and this mitigated them from any potential impacts.
- Sites NGW 3a and NGW 3b fall on the low lands used for grazing activities. These two sites form part of a complex of sites that are closely situated to one another forming a U shape life feature in the landscape from Google earth imagery (Figure 14- blue area). These sites are most probably one of the early settlements of the Marothodi sites; because we know that during the later part of this period most settlements were predominantly built (either) against hill slopes or top of hills for defensive mechanism against potential enemies. This was particularly important during the Imfecane.
- Sites NGW 5 (NG 19-20) and NGW 6 (17-18) are a typical example of the later period Marothodi sites, built against hill slopes (*Figure 15*).

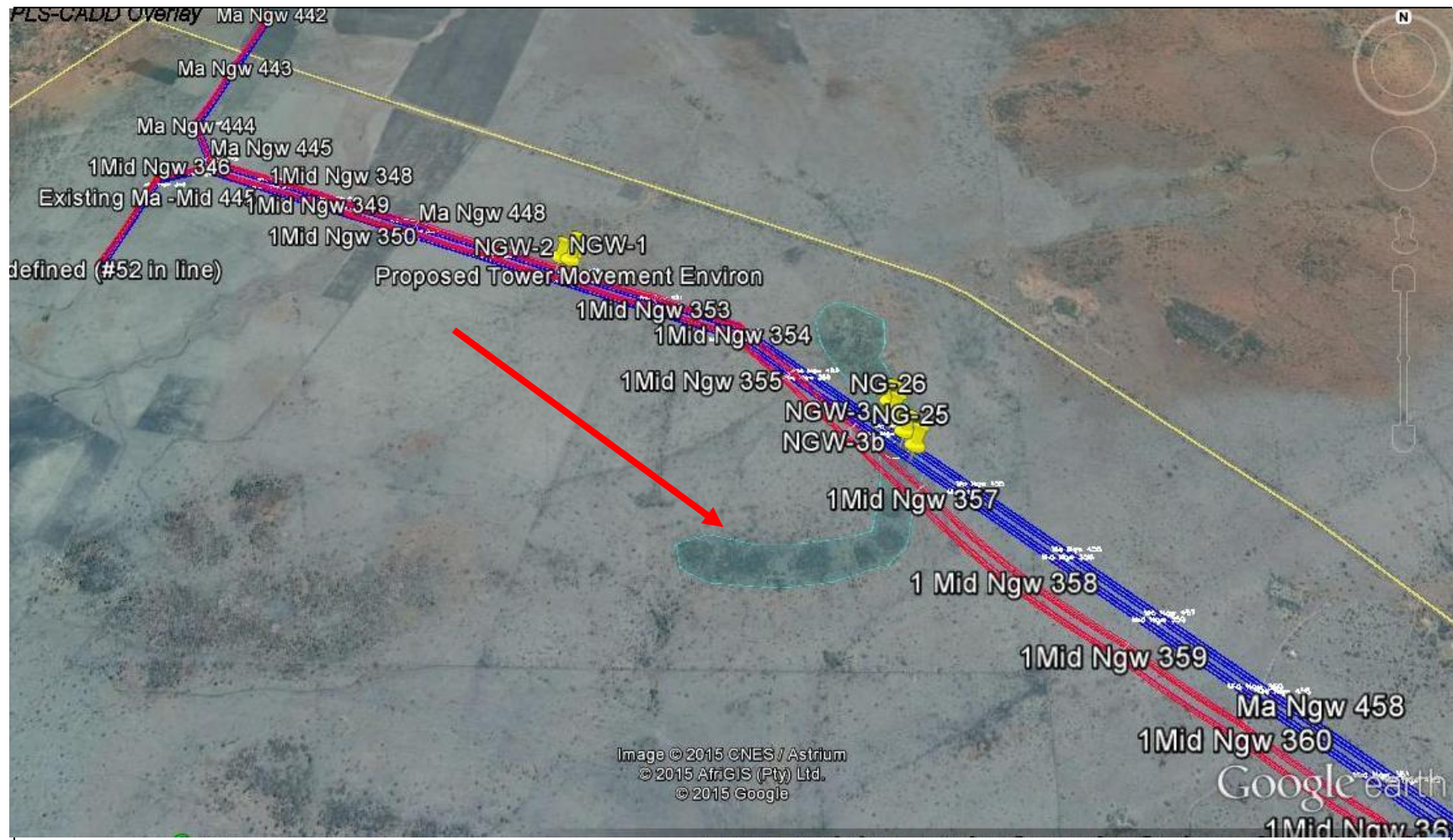


Figure 14- Western end section of the proposed Ngwedi Turn-ins Transmission Powerlines, North West Province South Africa. The red lines represent the proposed deviation from the original blue lines the old Transmission Line Servitude. The area marked in blue (also indicated through a red arrow) shows a cluster of stone walling sites that would have been of the same complex. The deviations pass through this cluster of sites but do not impact on any.

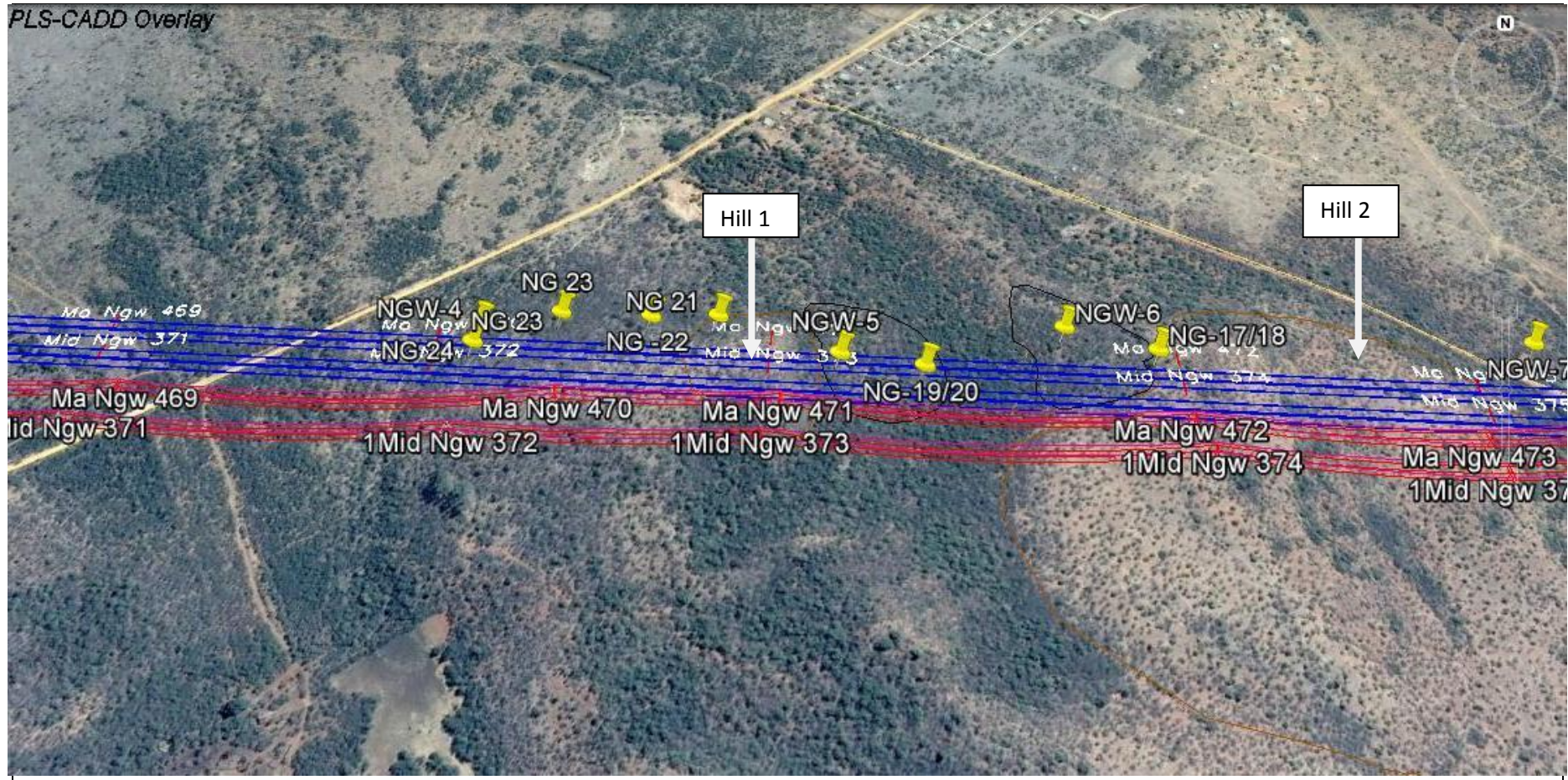


Figure 15- Mid section of the Ngwedi Turn-ins Transmission Powerlines. Note areas with hills- Hill 1 and Hill 2 referred to in the text of this report.

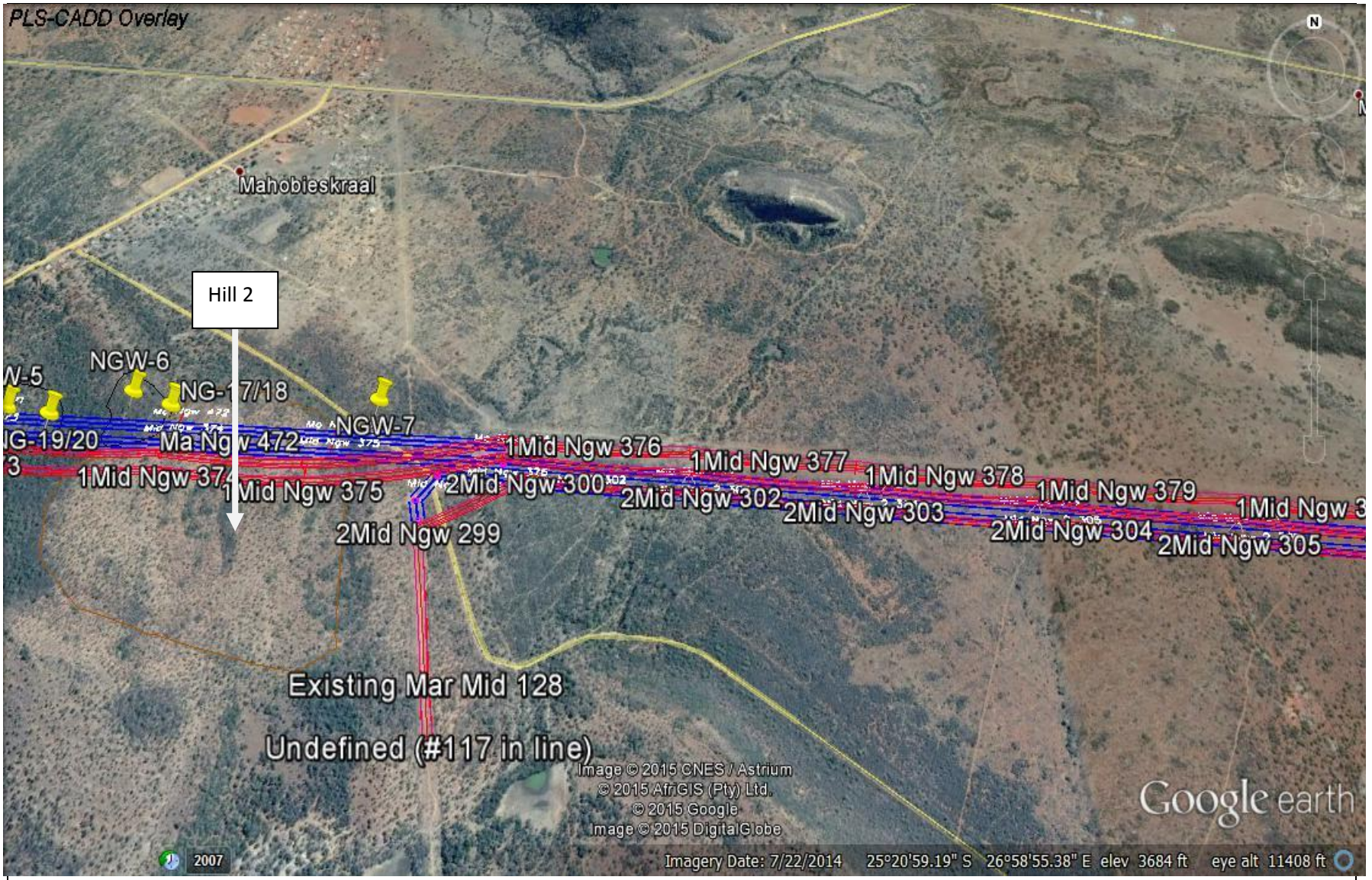


Figure 16- Mid section of Ngwedi Turn-ins Transmission Powerlines continues. Note the location of Hill 2.





## 8. CONCLUSIONS

It is concluded that this reported has sufficiently demonstrated the importance of Marothodi sites through the use of various forms of data and illustrations. In support of the SAHRA APM Unit position, the Marothodi site are indeed a unique cultural resources associated with among other Sotho-Tswana groups, the Tlokwa people.

These sites are not only important in terms of their aesthetic and archaeological value, but also in terms of understanding the rise of the present day Tswana people in the region.

The survey forms part of survey of the proposed Eskom deviations for Ngwedi Turn-ins Transmission Powerlines and will be an addendum to the 2012 CEMPr which is currently being updated. The CEMPr for the study was conducted in 2012 and an HIA report was produced and submitted to the SAHRA for Review Comments by A. Pelsler. An interim review comment was issued by SAHRA in August 2013. In 2014 Baagi Environmental Consultancy appointed NGT Projects & Heritage Consultants to apply for heritage permits for the mitigation of Marothodi site within the old Ngwedi Turn-ins Transmission Powerlines. Following a series of discussions between SAHRA, Eskom and Baagi discussions facilitated by NGT Projects & Heritage Consultants it was agreed that this process would not be possible to finalise before SAHRA issues a Final Review Comment on the project (*ANNEXURE A*). The Final Review Comment on the project was issued in 2015 (*ANNEXURE B*) AND its was accompanied by a formal letter to NGT Projects & Heritage Consultants to discussions held between NGT and SAHRA on behalf of NGT clients (*ANNEXURE C*). In the final comment it is concluded that the Marothodi sites are Grade 1 cultural resources and they should not be disturbed or destructed.

Subsequently, the Eskom team devise a plan to mitigate the identified Marothodi site in compliance with the NHRA, No. 25 of 1999 and SAHRA Final Comment for the management of the nation estate. A deviation from the current Transmission was developed with a view of mitigating the Marothodi sites (*Figures 14-17: old line is in blue and new line is in red*). This deviation mitigated potential impacts on the Marothodi sites and completely avoided them. This minimises any potential impacts of the Transmission line to the resources.

From a cultural resources management perspective there are no objections to the proposed development provided that the Developer adheres to proposed recommendations.

It is therefore concluded that the proposed Ngwedi Turnings deviations will avoid the identified Marothodi sites in terms of both primary and secondary impacts.

## 9. RECOMMENDATIONS

Based on the above discussion and conclusions about the nature and status of heritage resources yielded during the physical survey of the project area and the various assessment and evaluation processes that took place thereafter, the following recommendations are made about the project:



- SAHRA should review the current study, exercise its discretion and approve the project on the basis that there will be no impacts on the identified Marothodi heritage sites and the recent cemetery.
  - The area with the identified heritage sites should be avoided at all costs and be treated as a No-Go-Area.
  - Eskom and its Environmental Advisor and key project team members should appoint a Heritage Control Officer (HCO) to conduct weekly and monthly inspection of the heritage sites during the construction phase of the project and a report should be developed and submitted to SAHRA reporting on the status of these national sites.
  - It is also recommended that the project ECO should also be inducted on the importance of the identified heritage resources before the construction phase of the project and why they should not be disturbed and be treated as a No-Go-Area
- 
- Because of the nature of some of the archaeological and heritage resources i.e. subterranean in nature. It is recommended that should any archaeological and/or heritage resource material in form of **Chance Finds** (i.e. resources that are subterranean in nature that were not identified by the current survey but which may be brought to earth surface through excavation activities associated with the proposed development) be identified during the construction phase of the project (through excavation activities), the ECO should report them to the SAHRA ([cscheermeyer@sahra.org.za](mailto:cscheermeyer@sahra.org.za) or [phine@sahra.org.za](mailto:phine@sahra.org.za) or call: 021 462 4502) or call an archaeologist and/or heritage specialist to investigate the finds and make necessary recommendations.

## 10. REFERENCES

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## ANNEXURES A: SAHRA INTERIM COMMENT

<b>PROPOSED NGWEDI-TURN INS NEAR PILANESBERG</b>		
Our Ref: 16/1/4 Ngwedi Powerline		
Enquiries: Jenna Lavin Tel: 021 462 4502 Email: javin@sahra.org.za Case ID: 992	Date: Tuesday August 27, 2013 Page No: 1	
<b>Interim Comment</b>		
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999)		
Attention: BAAGI ENVIRONMENTAL CONSULTANCY P O Box 72847 Lynwood Ridge Pretoria 0040		
<b>A REPORT ON A HERITAGE WALKDOWN AND IMPACT ASSESSMENT FOR THE PROPOSED NGWEDI (MOGWASE) PROPOSED LINE CORRIDOR NEAR PILANESBERG, NORTHWEST PROVINCE REPORT: APAC012/04</b>		
Pelsier, A. (September 2012). <i>A Report on a Heritage Walkdown and Impact Assessment for the proposed Ngwedi (Mogwase) proposed line corridor near Pilianesberg, Northwest Province Report: APAC012/04</i>		
The above HIA was submitted for the proposed development of a powerline on various farms in the Northwest Province which have been previously disturbed through mining, agriculture, road and previous powerline developments.		
The above HIA indicates that it focusses on the proposed Corridors 1 and 2. A previous HIA (2010) assessed 5 proposed corridor routes as well as the proposed location of a substation. The corridors assessed in this HIA (2012) were the least preferred according to the 2010 HIA due to the potential impact to a large number of heritage resources. No indication was provided as to why these least preferred routes are now being investigated.		
The maps provided in the HIA (2012) identify only one corridor route. It is unclear whether this is Corridor 1 or Corridor 2.		
The 2012 HIA indicates that the Grade 1 heritage resource, the Marathodi Late Iron Age settlement, as well as other large Late Iron Age (LIA) settlements in and around Philwe Hill are located in between Corridors 1 and 2. Sites NG17 to NG26 are described as a complex of stone-walled settlement units, likely associated with the Grade 1 Marathodi settlement. These sites are situated between the proposed locations of pylons 374 and 372 as well as 356 and 357.		
Numerous other LIA settlements were identified in the vicinity of these corridors. Sites NG05 and NG06 describe a "rock gong" area with associated pottery and are situated between the proposed locations of pylons 145 and 146. Site, NG14 consists of hut clay and pottery fragments in an erosion gully, situated between the proposed locations of pylons 135 and 136. Site NG13 contains a relatively dense scatter of Middle and Later Stone Age tools located in this same erosion gully.		
Stone tools were recorded at four locations within the corridor route. These have low significance as they		
 The South African Heritage Resources Agency Street Address: 111 Harrington Street, Cape Town 8001 * Postal Address: PO Box 9021, Cape Town 8001 * Tel: +27 21 462 4502 * Fax: +27 21 462 4505 * Web: <a href="http://www.sahra.org.za">http://www.sahra.org.za</a>		

**PROPOSED NGWEDI-TURN INS NEAR PILANESBERG**

**Our Ref: 16/1/4 Ngwedi Powerline**

Enquirer: Jenna Lavin  
Tel: 021 452 4502  
Email: [jlavin@sahra.org.za](mailto:jlavin@sahra.org.za)  
Case ID: 992

Date: Tuesday August 27, 2013  
Page No: 2



consist of single tools or low density scatters. Six sites of some historical significance were identified in the 2012 HIA report. Sites NG12 and 16 consist of concentrations of old bricks that likely belonged to structures now demolished. These are situated in the proposed location of pylon 375 and have low heritage significance. Sites NG27 and NG28 describe rectangular stone structures which will be impacted by the proposed location of pylon 352. These resources have low heritage significance.

The submitted HIA does not provide track paths, nor is there an assessment of impacts to palaeontological material. Based on the information provided to SAHRA, and the limited nature of the impact of the proposed development on bed rock, no palaeontological assessment is required. In addition, the proposed development has not been mapped on the SAHRIS heritage management system.

**Comment**

Based on the above information, SAHRA requires the following information before making a Final Comment in terms of Section 38(B) of the National Heritage Resources Act (Act 25 of 1999).

- Motivation as to why the preferred corridors in terms of heritage impacts are not being pursued.
- Clarity on which of the corridors was assessed in the HIA dated September 2012 and why.

SAHRA requires that the corridor be re-aligned so that the proposed development does not impact on the significance Grade 1 heritage resource of the structures associated with the Marathodi LIA settlement, identified as NG17, NG18, NG19, NG20, NG21, NG22, NG23, NG24, NG25 and NG26. Should this not be possible, please liaise with SAHRA regarding reasons for non-compliance.

SAHRA looks forward to receiving the additional requested information before issuing a Final Comment on this proposed development.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully



Jenna Lavin  
Heritage Officer  
South African Heritage Resources Agency



The South African Heritage Resources Agency

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**PROPOSED NGWEDI-TURN INS NEAR PILANESBERG**

**Our Ref: 16/1/4 Ngwedi Powerline**



Enquiries: Jenna Levin  
Tel: 021 452 4502  
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Case ID: 992

Date: Tuesday August 27, 2013

Page No: 3

Colette Scheermeyer  
SAHRA Head Archaeologist  
South African Heritage Resources Agency

**ADMIN:**

Direct URL to case: <http://www.sahra.org.za/node/104777>

**Terms & Conditions:**

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.



The South African Heritage Resources Agency

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**ANNEXURES B: SAHRA FINAL COMMENT**

**PROPOSED NGWEDI-TURN INB NEAR PILANESBERG**

**Our Ref: 16/1/4 Ngwedi Powerline**

Enquiries: Philip Hliso  
Tel: 021 452 4532  
Email: phliso@sahra.org.za  
Case ID: 992

Date: Monday January 19, 2015  
Page No: 1

  
AN ACT OF PARLIAMANT  
Department of Arts and Culture

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**Final Comment**

**In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999)**

**Attention: BAAGI ENVIRONMENTAL CONSULTANCY**  
P O Box 72847  
Lynwood Ridge  
Pretoria  
0040

**A REPORT ON A HERITAGE WALKDOWN AND IMPACT ASSESSMENT FOR THE PROPOSED NGWEDI (MOGWASE) PROPOSED LINE CORRIDOR NEAR PILANESBERG, NORTHWEST PROVINCE REPORT: APAC012/04**

Peiser, A. (September 2012). *A Report on a Heritage Walkdown and Impact Assessment for the proposed Ngwedi (Mogwase) proposed line corridor near Pilanesberg, Northwest Province Report: APAC012/04*

SAHRA issued an Interim Comment (August 27, 2013) regarding the above development. SAHRA indicated that it would issue a Final Comment once the following information are provided:


- Motivation as to why the preferred corridors in terms of heritage impacts are not being pursued;
- Clarity on which of the corridors was assessed in the HIA dated September 2012 and why;

SAHRA further recommended that the "corridor be re-aligned so that the proposed development does not impact on the significance Grade 1 heritage resource of the structures associated with the Marathodi LIA settlement, identified as NG17, NG18, NG19, NG20, NG21, NG22, NG23, NG24, NG25 and NG26. Should this not be possible, please liaise with SAHRA regarding reasons for non-compliance".

SAHRA has since received feedback from the specialist who undertook the heritage study. It was indicated that the route was predetermined by EIA consultants and that the walkdown was conducted as part of a larger team of specialist from various disciplines. This is also the reason why no GPS track paths could be provided. The specialist also noted that the best of his knowledge the these corridors were chosen because they would have the least environmental impact and least technical difficulties for Eskom.

Considering the response received by the specialist, the following recommendations forms part of the Final Comment:

1. SAHRA does not support mitigation of the following sites NG17, NG18, NG19, NG20, NG21, NG22, NG23, NG24, NG25 and NG26 associated with the Late Iron Age settlement of Marathodi. Marathodi is a highly significant heritage resource which cannot be mitigated.
2. SAHRA therefore requires that the power line be re-aligned to prevent damage to these sites.
3. Eskom should inform SAHRA of the possibility of realignment within the servitude/corridor of the current preferred option without detrimental impacts to significant heritage resources.
4. If it is feasible for the power line to be realigned within the preferred corridor, this alignment must be assessed by a suitably qualified archaeologist to determine any possible impacts on heritage resources.



The South African Heritage Resources Agency  
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**PROPOSED NGWEDI-TURN INS NEAR PILANESBERG**

**Our Ref: 16/14 Ngwedi Powerline**

Enquiries: Phillip Hine  
Tel: 021 462 4502  
Email: [phine@sahra.org.za](mailto:phine@sahra.org.za)  
Case ID: 992

Date: Monday January 19, 2015

Page No: 2



BY APPOINTMENT OF THE  
Department of Arts and Culture

Outcomes must be discussed and agreed to with SAHRA before commencing construction activities.  
5. Should this option be agreed to all construction activities must be monitored by a suitably qualified archaeologist.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully



Phillip Hine  
Heritage Officer  
South African Heritage Resources Agency



Colette Scheermeyer  
SAHRA Head Archaeologist  
South African Heritage Resources Agency

**ADMIN:**

Direct URL to case: <http://www.sahra.org.za/node/104777>

**Terms & Conditions:**

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.



The South African Heritage Resources Agency

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**ANNEXURE C: LETTER TO NGT PROJECTS & HERITAGE CONSULTANTS**



an agency of the  
Department of Arts and Culture

Date: 15 January 2015  
Enquiries: Phillip Hine  
Tel: 021 302 8852  
Email: [phine@sahra.org.za](mailto:phine@sahra.org.za)

Mr. N. Tomose  
NGT Projects and Heritage Consultants (Pty) Ltd  
No. 2 Windsor Place  
Princesses Avenue  
Windsor West  
Randburg  
2194

Dear Mr Tomose,

**RE: SAHRA FORMAL RESPONSE TO A MEETING HELD TO DISCUSS THE STATUS OF NGWEDI TURNINGS AND THE SAHRA INTERIM COMMENT ON THE PROJECT**

In reference to your letter to SAHRA dated 13 November 2014 following the teleconference meeting (October 2014) between SAHRA representatives, your clients (Baagi Environmental and Eskom) and yourself, we wish to provide a response to matters as agreed at the meeting and restated in your letter.

In December 2014 SAHRA had an opportunity to engage with Mr Pelser, the specialist contracted by your clients to undertake the heritage walk down and impact assessment (September 2012) for the proposed Ngwedi (Mogwase Proposed Line Corridor near Pilanesberg, North West Province. Following feedback from Mr Pelser, we have provided final comment on the project.

The comment will be submitted to Mr Pelser as the author of the report, and copied to the clients. We also attach the outcomes of the comment to you.

Yours sincerely,

Colette Schermeyer  
Manager: Archaeology, Palaeontology and Meteorites Unit  
South African Heritage Resources Agency