



## NGT ESHS Solutions

### **PROJECT TITLE:**

RESETTLEMENT ACTION PLAN FOR THE FOR THE PROPOSED MFOLOZI-MBEWU 765kV TRANSMISSION LINE, ZULULAND AND KING CETSHWAYO DISTRICT MUNICIPALITY, KWAZULU-NATAL.

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## DECLARATION OF INDEPENDENCE

Cherene de Bruyn for NGT has compiled this report (*See Appendix A*). The views expressed in this report are entirely those of the author and no other interest was displayed during the decision-making process for the project.

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## EXECUTIVE SUMMARY

NGT was appointed by Mokgope to conduct an ICRMS for the proposed Mfolozi-Mbewu 765kV Transmission Line within ZDM and KCDM in KZN, South Africa. This ICRM study forms part of the RAP, it will also inform the Social Impact Assessment (SIA) study on consideration of cultural heritage issues that form part of the social fabric of the affected communities and the project EMPr for construction of the line. The report gives conclusions and recommendations on the management and conservation of cultural heritage resources within the proposed development area/receiving environment. The study also informs the design and placement tower position within the receiving environment mapping out **Go** and **No-Go-Areas**, particularly on areas with known graves to avoid negative heritage impacts as well as social issues associated with the relocation of graves. The study has been conducted independently in terms of Section 38 (3) of the National Heritage Resources Act (NHRA), No. 25 of 1999; it considered archaeology, built environment (houses of cultural significance), burial grounds and graves, and palaeontology, thus the reference ICRMS.

The standard NGT HIA study process entailed conducting a detailed background information search of the receiving environment. The search assesses among other forms of data, previous studies conducted in and around the proposed study area or the development area. This also includes conducting an onsite investigation (survey) to identify and map out heritage resources on site and assess impacts of the proposed development on the identified heritage resources. Recommendations are then made with regards to how the identified heritage resources should be managed and/or mitigated to avoid being negatively impacted by development activities. Furthermore, recommendations are made on how the positive project benefits can be enhanced, to ensure a long-term strategy for the conservation and promotion of heritage resources, if any are found.

The survey of the project area was conducted between Friday the 19<sup>th</sup> of October and Thursday the 25<sup>th</sup> of October 2018. The survey was conducted by Miss Cherene de Bruyn (Archaeologist and Heritage Consultant – NGT), Miss Nosiphiwo Nodada (Environmentalist and Social Impact Specialist – NGT), Miss Reagile Sengane (Archaeology Assistant and Field Technician – NGT), Mrs Agnes Babugura (Social Impact Specialist - NIA Development Solutions) and Miss Buhlebethu Magwaza (Social Impact Specialist - NIA Development Solutions). The survey included a qualitative approach, where families were interviewed,

and the types of heritage resources located on the affected households' properties were identified. The survey was conducted on foot. A vehicle was also used to access the site. The heritage resources identified were documented, photographed and mapped.

Based on the results of the literature review, field survey and the assessment of heritage sensitivity, the following conclusions and recommendations are made about the project in terms of the of minimum standards for conducting such studies as legislated in the NHRA, No.25 of 1999:

### Conclusions:

Based on the results of literature review and the survey results the following conclusions are made:

- That the KwaZulu-Natal and the region surrounding Ulundi and Empangeni is rich in history and archaeology.
- During the survey the following heritage resources were found (*Table 1 and Appendix B*):

*Table 1: Summary of the identified heritage sites and their site reference numbers*

TYPE HERITAGE RESOURCES	SITE REFERENCE NUMBER
Three archaeological sites,	<ul style="list-style-type: none"> <li>• Site Complex-01 (Iron Age Pottery-01)</li> <li>• Site Complex-02 (Stone tool-01)</li> <li>• Site Complex-03 (Lower Grinding Stone-01)</li> </ul>
An Open Air Shembe Church	<ul style="list-style-type: none"> <li>• Site Complex-06 (Open-Air Church-01)</li> </ul>
A traditional house	<ul style="list-style-type: none"> <li>• Site Complex-07 (Traditional House-01)</li> </ul>
<i>Isigodlo</i> <sup>1</sup>	<ul style="list-style-type: none"> <li>• Site Complex-08 (Isigodlo-01)</li> </ul>
30 graves sites	<ul style="list-style-type: none"> <li>• Burial Site Complex-01 (Graves A1-A4)</li> <li>• Burial Site Complex-02 (Graves (A4-A7)</li> <li>• Burial Site Complex-03 (Graves A8-11)</li> <li>• Burial Site Complex-04 (Graves A12-A15)</li> </ul>

<sup>1</sup> *Isigodlo: Traditionally Isigodlo was name used to refer to royal kraal. More recently the name Isigodlo is used to also refer to Isangoma or Inyanga place of work carrying out their traditional practices. The word is used interchangeably with Indumba*

	<ul style="list-style-type: none"> <li>Burial Site Complex-05 (Graves A16-A20)</li> <li>Burial Site Complex-06 (Graves A21-A22)</li> <li>Burial Site Complex-07 (Grave A23)</li> <li>Burial Site Complex-08 (Grave A24)</li> <li>Burial Site Complex-09 (Grave A25)</li> <li>Burial Site Complex-12 (Grave A26)</li> <li>Burial Site Complex-13 (Grave A27)</li> <li>Burial Site Complex-14 (Graves A28-A30)</li> </ul>
Three communal cemeteries	<ul style="list-style-type: none"> <li>Burial Site Complex-10 (Community Cemetery-01)</li> <li>Burial Site Complex-11 (Community Cemetery-02)</li> <li>Burial Site Complex-12 (Community Cemetery-03)</li> </ul>
Two ancestral prayer sites	<ul style="list-style-type: none"> <li>Burial Site Complex-16 (Ancestral Site-01 and 02)</li> </ul>

- Based on the survey results/field grading, the project will have negative impact on the Open Air Shembe Church (Site Complex-06); tower 26 is situated right on the church site.
- A total of 30 graves were identified within or next to active households, ruins or abandoned houses. A total of 11 active households had graves.
- In terms of discussions that focused on deriving solution regarding the issue of graves, representatives from the affected households indicated that they prefer that the graves be avoided and stay *in situ*. They recommended that the graves should be fenced off and a grave management plan be developed. Many of the household representatives also indicated that their family graves were located in one of the community cemeteries which is located within the project area.
- One *Isigodlo* and traditional house being used for traditional rituals were identified. Traditional houses have cultural significant as they are places where families conduct and carry out their rituals and traditional practices. They are places where the families communicate with their ancestors and are often rondavels in many cases with adorned with horns of either goat or cattle above the entrance. Traditional houses are therefore of heritage and cultural significance and families should be given the opportunity to perform their appropriate rituals related to their

relocation. No other areas of cultural and spiritual significance were identified within the affected households.

- Although only three archaeological resources were found within the receiving environment, it should be noted that some archaeological resources are subterranean in nature. If exposed by construction activities and brought to the earth surface, they should be treated as Chance Finds.
- In terms of SAHRA Paleontological Sensitivity Layer:
  - 20% of the project area, located to the west of Empangeni, falls within a very high sensitivity area;
  - 40% of the project area (surrounding Ntabamhlophe and Debe) falls within a low sensitivity area;
  - 30% of the project area (located close to Ntabamhlophe, Ulundi, Emkhandlwini, Bambela and Ntambanana) falls within a moderate sensitivity area;
  - 15% of the project area (near Ntabamhlophe) falls within an insignificant sensitivity area;
  - 5% of the project area (near Mningi and Ntabamhlophe) falls within a high sensitivity area.
- Based on this distribution pattern of Palaeo-Sensitive areas it is concluded the area west of Empangeni and the area near Mningi and Ntabamhlophe are of high palaeontological sensitivity and priority areas for onsite palaeontological survey during the project construction phase.

#### Recommendations:

Several recommended mitigation measures for the identified heritage resources are made and listed in Table 2 below:

*Table 2: Table indicating the sites identified and recommended mitigation measures*

FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Site complex-01 (Iron Age Pottery-01)	3	29	<ul style="list-style-type: none"> <li>• It is recommended that the area be monitored by a qualified archaeologist during the project construction phase of the proposed Mfolozi-Mbewu 765kV transmission powerline.</li> </ul>



FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
			There is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.
Site complex-02 (Stone tool-01)	3	29	<ul style="list-style-type: none"> <li>It is recommended that the area be monitored by a qualified archaeologist during the project construction phase of the proposed Mfolozi-Mbewu 765kV transmission powerline, as there is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.</li> </ul>
Site Complex-03 (Lower Grinding Stone-01)	31	19	<ul style="list-style-type: none"> <li>It is recommended that the Grinding Stone be included in heritage permits application and be taken to the KwaZulu-Natal Museum in Pietermaritzburg where it can be used as part of the teaching collection.</li> <li><b>Subject to approval from Amafa</b></li> </ul>
Site Complex-04 (Transnet building-01)	25	21	<ul style="list-style-type: none"> <li>The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it and can be destroyed.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Site Complex-05 (Transnet building-02)	47	1	<ul style="list-style-type: none"> <li>The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it and can be destroyed.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Site Complex-06 (Open-Air)	6	26	<ul style="list-style-type: none"> <li>The Church needs to be relocated to an appropriate area, where members of the church can freely practice their beliefs.</li> </ul>

FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Church-01)			<ul style="list-style-type: none"> <li>As the church will have to relocate, which will also have an impact of the religious practices of the surrounding community</li> <li>Before this process can take place, a heritage social consultation and facilitation process with leaders of the Shembe church should take place.</li> <li>The Shembe Church will need to be compensated appropriately for the relocation of their church by the developer. From past experience it is recommended that, the compensation should include the costs of new land, cost for notifying the chiefs, costs of buying and slaughtering animals, food, and the blessing of the new church site. However, this will be verified during the heritage social consultation and facilitation meetings with the church leaders.</li> </ul>
Site Complex-07 (Traditional House-01)	14	23	<ul style="list-style-type: none"> <li>Although the building is of cultural significance, it can be destroyed. However, families should be appropriately compensated and allowed to perform any rituals related to the small rondavel before vacating the property.</li> </ul>
Site Complex-08 (Isigodlo-01)	41	18	<ul style="list-style-type: none"> <li>Although the building is of cultural significance, it can be destroyed as it is already in ruins and the family has already settled somewhere else. However, families should be appropriately compensated and allowed to perform any rituals related to the isigodlo before the construction activities start.</li> </ul>
Burial Site Complex-01 (Graves A1-A3)	1	32	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>They should be treated as a No-Go-Area, with machinery completely avoiding the grave locations during the</li> </ul>

FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
			construction phase.
Burial Site Complex-02 (Grave A4-A7)	2	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>They should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>Move Tower 29 200m south-east along the transmission line.</li> <li>It is recommended that, Tower 29 be moved 200 m south-east along the transmission line. If this recommendation is not feasible from an engineering technical point of view, a grave relocation would need to be applied for with Amafa to relocate the graves. The families should first be engaged and the reasons for not moving the tower position be justified to them in order to give consent.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Burial Site Complex-03 (Grave A8-A11)	3	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>They should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-04 (Grave A12-A15)	4	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>Move Tower 29 200 m south-east along the transmission line</li> </ul>
Burial Site Complex-05 (Grave A16-A20)	8	25	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The graves should be treated as a No-Go-Area, with machinery</li> </ul>

FEATURE		HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
				completely avoiding the grave locations.
Burial Site Complex-06 (Graves A21-A22)		8	24	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>Move Tower 24 100 m north-west along the transmission line.</li> <li>If it is not possible to move the tower position form a technical position, it is recommended that a grave relocation and reburial permit be applied for with Amafa. The families should first be consulted to discuss the reasons why the tower position cannot be moved. The graves can only be relocated with consent from the families.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Burial Site Complex-07 (Grave A23)		10	24	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>Move Tower 24 100 m north-west along the transmission line.</li> </ul>
Burial Site Complex-08 (Grave A24)		12	24	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-09 (Grave A25)		13	24	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>

FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Burial Site Complex-10 (Community Cemetery-01)	11	23	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-11 (Community Cemetery-02)	19	23	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-12 (Grave A26)	33	19	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-13 (Grave A27)	34	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-14 (Graves A28 – A30)	38	19	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-15 (Community Cemetery-03)	43 and 44	18	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site	41	18	<ul style="list-style-type: none"> <li>The family should be allowed to perform rituals related to</li> </ul>

FEATURE	HOUSEHOLD LOCATION	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Complex-16 (Ancestral Site-01 and 02)			<p>moving the ancestor's spirits to the location of their new home.</p> <ul style="list-style-type: none"> <li>After the rituals have been performed, the project activities can continue.</li> </ul>

- It should be noted that some archaeological material, including artefacts and graves can be buried underground and as such, may not have been visible or identified during the initial survey and site visits. In the case where the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should such resources be unearthed it is recommended that, the development and construction activities be stopped immediately, Amafa should be notified (Tell: 033 394 6543 or E-mail: lindim@amafapmb.co.za) and an archaeologist be contacted to conduct a site visit and make recommendations on the mitigation of the finds.
- In terms of SAHRA Paleontological Sensitivity Layer, 20% of the project area, falls within a very high sensitivity area, 40% falls within a low sensitivity area, 30% falls within a moderate sensitivity area, 15% falls within an insignificant sensitivity area and 5% of the project area falls within a high sensitivity area, as such, for the highly sensitive areas it is recommended that a field assessment by a qualified palaeontologist should be conducted during the excavation of tower foundations. A palaeontological finds protocol has been developed and included in this ICRMS (*Appendix C*), but the palaeontologist would have to recommend mitigation measures that are specific based on the results of field assessment.
- It is recommended that there is no need for further investigation of the two Transnet buildings identified in the project area from a conservation architectural perspective. No Phase II HIA is required. The buildings can be demolition as planned only after the receipt of approval of this HIA from Amafa.
- This ICRMS Report is required to feed into the RAP. The RAP will then be provided to the World Fund Bank, who may then decide on a social monitoring process to proceed during the relocation of the households.

- This project may proceed with the recommended development only after the recommended mitigation measures have been put in place and only after approval of this ICRMS has been received from Amafa and agreed upon by the project proponent and its funders i.e. the World Fund Bank.

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## LIST OF ABBREVIATIONS

ACRONYMS	DESCRIPTION
<b>AUTHORITIES</b>	
Amafa	Heritage KwaZulu Natali
ASAPA	Association of South African Professional Archaeologists
DEA	Department of Environmental Affairs
KCDM	King Cetshwayo District Municipality
ZDM	Zululand District Municipality
KZN	KwaZulu-Natal Province
NGT	Nurture, Grow, Treasure
SADC	Southern African Developing Community
SAHRA	South African Heritage Resources Agency
ULM	Umhlathuze Local Municipality
<b>DISCIPLINE</b>	
BGG	Burial grounds and graves
CRM	Cultural Resources Management
DM	District Municipalities
EIAs	Environmental Impact Assessment
EIA-PS	Environmental Impact Assessment Plan of Study
EMPr	Environmental Management Programme
ES	Environmental Scoping
ESR	Environmental Scoping Report
HCMP	Heritage Cultural Management Plan Report
H-PS	Heritage Plan of Study
HIA	Heritage Impact Assessment
HSR	Heritage Scoping Report
ICRMS	Integrated Cultural Resources Management Study
LM	Local Municipalities
PIA	Palaeontological Impact Assessment
PSA	Palaeontological Sensitive Area
PSL	Palaeontological Sensitivity Layer
RAP	Resettlement Action Plan
RQC	Review and Quality Control
<b>LEGAL</b>	
KZNHA	KwaZulu Natal Heritage Act
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act

## **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.

### ***Palaeontological***

This means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial.

### ***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. Background Information of Project

NGT was appointed by Mokgope to conduct an ICRMS for the proposed Mfolozi-Mbewu 765kV Transmission Line, within the ZDM and KCDM in KZN, South Africa. Eskom proposes to construct a 765kV Transmission Line between the proposed new Mbewu Substation near Empangeni to the existing Umfolozi Substation near Ulundi. However, before the activities can commence, several structures, households and graves located within or near the servitude (80m in width) of the proposed powerline need to be relocated for the construction of the powerline. The M-C Transmission Lines are spread over 11 Wards and three Local Municipalities (LM) from the Umfolozi Substation to the proposed Mbewu Substation (*Table. 3*). The proposed line is approximately 98 km in length. For purposed of this project, the survey focused on the 47 locations with households that were affected, these households were visited, and interviews carried out with individual household representatives. It should be noted that while there were 47 coordinate/location points, in some of the compounds there was more than 1 household. In total 66 households were identified. Two abandoned Transnet buildings were identified during the survey and this were found in two of the affected household locations (Households 25 and 47). As such the area proposed for the new 765kV Transmission Line will affect approximately 66 households (*Figure. 1, Table. 4 and Appendix B*). This ICRMS forms part of the RAP that will be submitted to the World Fund Bank.

In order to comply with the National Environmental Management Act (NEMA), No. 107 of 1998 and NHRA 25 of 1999, Eskom is required to undertake a study which investigates the presence, relevance and the significance of any heritage resources that could occur in the area and which might be affected by the proposed Transmission Line. By identifying heritage resources Eskom will be in a position to take pro-active measures to ensure the conservation of any heritage resources that may be affected, damaged or destroyed by the project activities, which could lead to positive project outcomes. Heritage and cultural resources form part of the social fabric of communities that will be affected, as such results of this ICRMS should also be incorporated in the final SIA study.

The aims with the ICRMS are as follows:

- To conduct a detailed background literature review of the project area;
- Survey the project area to determine if there were any heritage resources located in the project area and to establish the significance of these heritage resources according to the NHRA 25 of 1999;
- To consult with the affected households and document and map any graves or spiritual sites or structures that could be present on the affected properties;
- To assess the potential impacts on the identified burial grounds and graves along the proposed Transmission Line servitude;
- To develop a database, contain the information of the affected households.
- To make conclusions and recommendations on how heritage resources should be managed and mitigated to avoid them being desecrated by the proposed development activities.
- To obtain heritage approvals from the relevant authorities i.e. Amafa

As such, this ICRMS investigates the affected households' burial grounds and graves as well as any other heritage resources within the receiving environment that might be impacted by the proposed construction, such as archaeological artefacts, built environment and palaeontology. Therefore, the overall objective of this ICRMS is to give advice on the management of the heritage resources in and around the proposed project area in terms of known heritage resources management measures in line with the NHRA, No. 25 of 1999.

## **1.2. Location of the study area**

Below are two tables with the affected District Municipalities (DM), LM and Wards (*Table 3 & Table 4*). Table 4 also locates the affected households in relation to DM and LM's.

Table 3: Site Location and Property Information

PROPERTY INFORMATION	
<b>Responsible Local Authority</b>	Mthonjaneni, uMfolozi and Ulundi Local Municipalities
<b>Wards</b>	1,2 5, 7, 10, 11, 13, 14, 17, 20, 24
<b>Magisterial District</b>	King Cetshwayo District Municipality and Zululand District Municipality
<b>Region</b>	KwaZulu-Natal Province
<b>Country</b>	South Africa

Table 4: Wards and Municipalities within the project area

DISTRICT MUNICIPALITY (DM)	LOCAL MUNICIPALITY (LM)	WARD	AFFECTED VILLAGES	NUMBER OF AFFECTED HOUSEHOLDS/ ABANDONED STRUCTURES/RUINS
Zululand (DM)	Ulundi (LM)	14	Njomelwane	<ul style="list-style-type: none"> <li>51 Households</li> <li>1 Transnet house</li> <li>1 Chicken community project</li> <li>1 grave yard</li> </ul>
		24	Nkonjane	
		20	Nhlungwane	
		20	Kwagqikazi	
		20	Esangoyane	
		24	Nhlungwane-Bhongisilwane	
King Cetshwayo (DM)	Mthonjaneni (LM)	13	Maduma Reserve	<ul style="list-style-type: none"> <li>14 households</li> <li>1 Church</li> </ul>
		13	Chibigoje	
		30	Debe	
	uMfolozi	17	Mathunzini Reserve	<ul style="list-style-type: none"> <li>1 Household</li> </ul>

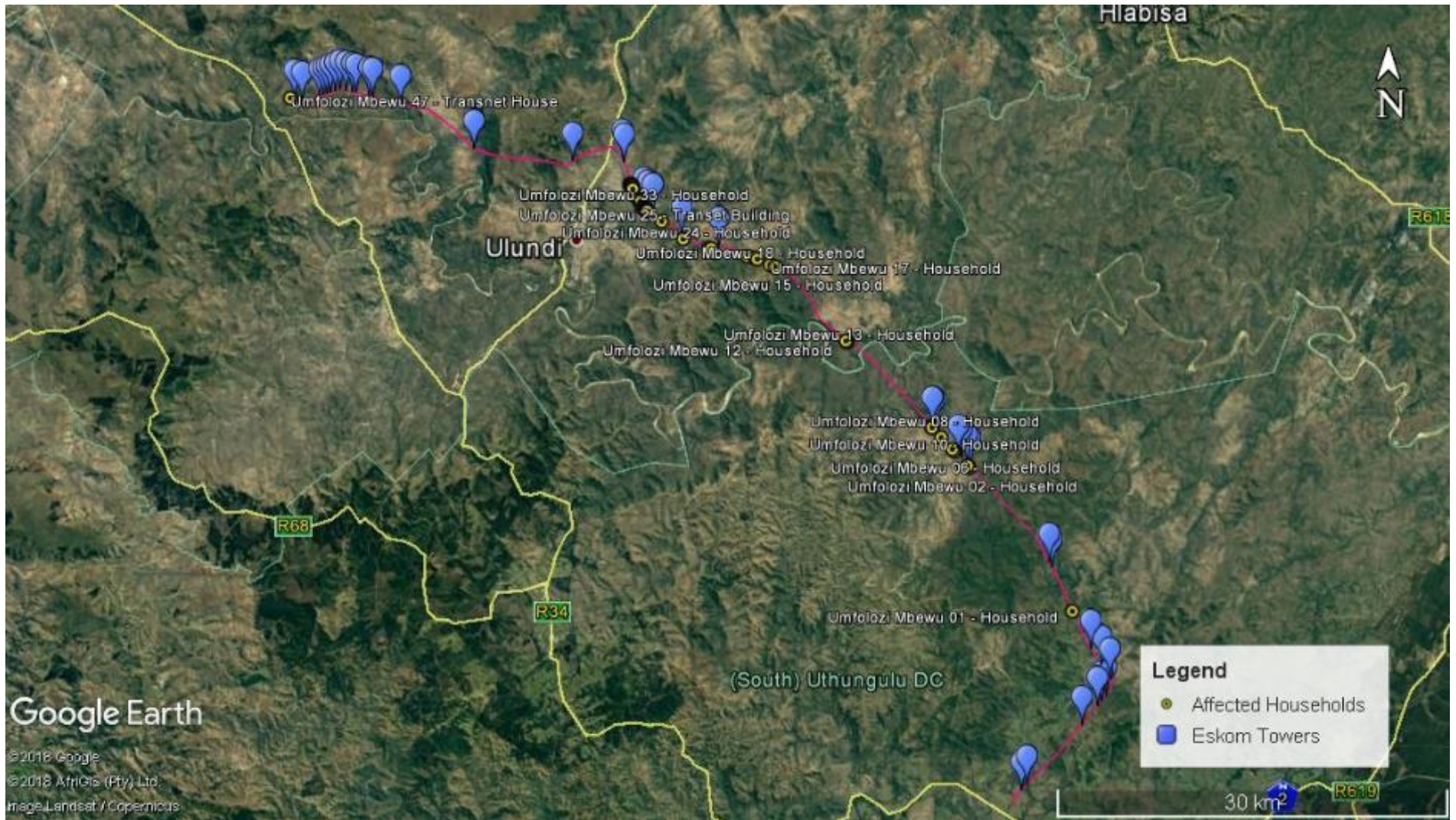


Figure 1: Google Earth map of the Project area and indicating the affected households

### **1.3. Description of the Affected Environment**

#### **1.3.1. Land Use and History**

The proposed Transmission Lines will run through a mountainous area. The White Mfolozi river is located to the south-west of the project area and runs east-west with the middle section of the proposed powerlines. The project area is mostly made up of both commercial and subsistence farming. The general landscape has been predominantly transformed through the informal settlements, the development of industrial infrastructure such as pre-existing Eskom power lines and Transnet railway lines.

#### **1.3.2. Access**

Access to the Project area from Richards Bay is mainly through the following roads (*Figure. 2*):

- R34
- R66





Figure 2: Google Earth image indicating access to the project area from Richards Bay

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

The HIA is conducted in terms of Sections 38 the NHRA, No. 25 of 1999. This prescript of the Act Section 38:

“the responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (3) (a): Provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;
- (b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;
- (c) An assessment of the impact of the development on such heritage resources;
- (d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) The result of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- (f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.”

Mokgope appointed NGT as the lead cultural resources management (CRM) consultant to conduct and manage the ICRMS. Cherene de Bruyn (Archaeologist and Heritage Consultant – NGT), conducted the study for the proposed development. The appointment of NGT as an independent CRM firm is in terms of the NHRA, No. 25 of 1999. The report has been reviewed internally and externally by Mokgope to ensure compliance and quality control.

#### **1.5. Legal Requirements for Completion of the Study**

The NHRA, No. 25 of 1999 sets norms and standards for the management of heritage resources in South Africa. Section 35 and 38 (3) of the NHRA, No. 25 of 1999 informs the current ICRM study. Table 4 below gives a summary of all the relevant legislations that informed the current study.



Table 5: Legislation and relevance to this ICRM Study

Legislation (incl. Policies, Bills and Framework)	
Heritage	<ul style="list-style-type: none"> <li>Heritage resources in South Africa are managed through the National Heritage Resources Act (NHRA), No. 25 of 1999. This Act sets guidelines and principles for the management of the <i>nation estate</i>.</li> <li>Section 34 becomes relevant in terms of structures.</li> <li>Section 35 becomes relevant in terms of archaeology and palaeontology.</li> <li>Section 36 becomes relevant for the management of burial grounds and graves.</li> <li>Section 38 of the Act becomes relevant in terms of nature of the proposed project in terms of developing the heritage impact assessment study.</li> <li>The KwaZulu-Natal Heritage Act (KZNHA), No. 10 of 1997 is developed to manage heritage resources at a provincial level.</li> <li>The other applicable legal document is the KwaZulu-Natal Heritage Bill of 21 February 2008.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>The NEMA, No. 107 of 1998.</li> <li>The cultural environment in South Africa is managed through Section 24 of the NEMA, No. 107 of 1998.</li> </ul>

## 1.6. Limitations and Assumptions

Several limitations were observed during the ICRMS. The mountainous and hilly environment, along with limited availability of dirt roads and paths, along with the overgrown vegetation in the project area made access to specific locations difficult. This was especially the case with Household 20 which could not be reached. As such although a comprehensiveness physical survey was undertaken it should be noted that some of the archaeological material, including artefacts and graves can be buried underground or hidden underneath clumped and thick vegetation and as such, may not have been identified during the initial survey and site visit. In the case where the proposed development activities bring these materials to the surface, they should be treated as Chance Finds. Should such resources be unearthed it is recommended that, the development activities be stopped immediately, and an archaeologist be contacted to conduct a site visits and make recommendations on the mitigation of the finds. SAHRA and Amafa should also be informed immediately on such finds. In this case no archaeological material of graves should be moved from the site, until the heritage specialist has been able to make an assessment regarding the significance of the site and archaeological material, which is also subject to SAHRA approval.

The following section outline the methodology used to assess the current site impacts and cumulative impacts that will result from the proposed project on the identified historic or archaeological sites.

## **2. METHODOLOGY**

### **2.1. Approach to the Study**

Cherene de Bruyn (Archaeologist and Heritage Consultant – NGT), is responsible for the compilation of the current scoping report. The Review and Quality Control (RQC) process involved reviewing the First Draft (Revision 01) and revising the Second Draft (Revision 02); the internal RQC was completed by Mr Nkosinathi Tomose (Executive Director and Principal Archaeologist – NGT). The external RQC was conducted by Mokgope – Mrs Judith Fasheun (Senior Environmentalist - Mokgope) and Dr Mpho Nenweli (Chairman – Mokgope). The RQC is a standard process at NGT; in the case that the Director and Principal Consultant is responsible for the report – another consultant has to undertake the RQC process. This ICRMS is conducted for the proposed Mfolozi-Mbewu 765kV Transmission Line, within the Zululand and KCDM, KZN, South Africa.

### **2.2. Step I – Literature Review (Desktop Phase)**

Background information search for the proposed development took place following the receipt of appointment letter from the client. Sources used included, but not limited to published HIA studies, academic books, academic journal articles and the internet about the site and the broader area in which it is located. Interpretation of legislation (the NHRA, No. 25 of 1999) and local bi-laws form the backbone for the study.

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

The survey of the project area was conducted on Friday the 19<sup>th</sup> of October until the 25<sup>th</sup> of October 2018 by Miss Cherene de Bruyn (Archaeologist and Heritage Consultant – NGT), Miss Nosiphiwo Nodada (Environmentalist and Social Impact Specialist – NGT), Miss Reagile Sengane (Archaeology Assistant and Field Technician – NGT), Mrs Agnes Babugura (Social Impact Specialist - NIA Development Solutions) and Miss Buhlebethu Magwaza (Social Impact Specialist - NIA Development Solutions). The survey was conducted on foot. A vehicle was also used to access the site. These findings are discussed in detail in this HIA report.

The aim of the survey was to identify archaeological and heritage sites and resources, along with the challenges these sites possess within the area proposed for development of the Transmission Lines, the 80 m servitude as well as within the 500m radius of the project area:

- The survey of the proposed development area was conducted on foot and the site was accessed using a bakkie;
- The aim of the surveys was to identify archaeological, burial grounds and graves, and built environment heritage sites and resources in and around the area proposed for development;
- To record and document the sites using applicable tools and technology.

The following technological tools were used for documenting and recording identified resources on site:

- Garmin GPS (i.e. Garmin 62s) – to take Latitude and Longitude coordinates of the identified sites and to track the site.
- Canon SLR – to take photos of the affected environment and the identified sites.

#### **2.4. Step III – Report Writing and Site Rating**

The final step involves compilation of the report using desktop research as well as the physical survey results. Archaeological resources, graves and sites found in the project area is rated according to the site significance classification standards as prescribed by SAHRA. The first draft of this report was produced in November 2018. The Statement of Heritage Significance does not imply exemption from any national, provincial or local authority legal or other regulatory requirement, including any protection or management or general provision in terms of the NHRA, No. 25 of 1999. The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by ASAPA for the Southern African Developing Community (SADC) region were used to grade the identified heritage resources or sites (*Table. 5*). Impact Significance Rating will be completed and is guided by the requirements of the NEMA EIA Regulations (2014) (*Table. 6-9*).

Table 6: Site significance classification standards as prescribed by SAHRA

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

Table 7: Table indicating the impact significance rating.

Alternative No	List Alternative Names	
Proposal	Development	
Alternative 1	Development Area 01	
Alternative 2	Development Area 02	
Nature	-1	Negative
	1	Positive
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),

	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact
Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),
Public feedback	1	Low: Issue not raised in public responses
	2	Medium: Issue has received a meaningful and justifiable public response
	3	High: Issue has received an intense meaningful and justifiable public response
Cumulative Impact	1	Low: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	2	Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	3	High: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources	1	Low: Where the impact is unlikely to result in irreplaceable loss of resources.
	2	Medium: Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	3	High: Where the impact may result in the irreplaceable loss of

		resources of high value (services and/or functions).
Degree of Confidence	Low	<30% certain of impact prediction
	Medium	>30 and < 60% certain of impact prediction
	High	>60% certain of impact prediction
<b>Priority</b>	<b>Ranking</b>	<b>Prioritisation Factor</b>
3	Low	1,00
4	Medium	1,17
5	Medium	1,33
6	Medium	1,50
7	Medium	1,67
8	Medium	1,83
9	High	2,00
Phase		
Planning		
Construction		
Operation		
Decommissioning		
Rehab and closure		

Table 8: Impact Rating table with impact mitigation.

IMPACT DESCRIPTION		PRE – MITIGATION							POST – MITIGATION								IMPACT PRIORITISATION		
Impact	Phase	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Confidence	Public response	Cumulative Impact	Irreplaceable loss
1. Heritage Impact Ratings	Planning	-1	3	2	2	2	5	-11,25	-1	3	1	2	2	4	-8	High	1	2	1
								0	-1						0				
								0							0				



Table 9: Risk assessment.

	Impact Name					
	Alternative					
	Phase					
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact			Magnitude of Impact		
	Extent of Impact			Reversibility of Impact		
	Duration of Impact			Probability		
	Environmental Risk (Pre-mitigation)					
	Mitigation Measures					
	Heritage Risk (Post-mitigation)					
	Degree of confidence in impact prediction:					
	Impact Prioritisation					
	Public Response					
	Cumulative Impacts					
	Degree of potential irreplaceable loss of resources					
	Prioritisation Factor					
	Final Significance					

*Table 10: Final Significance Ratings*

SIGNIFICANCE RATINGS	
Value	Description
< -10	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)
≥ -10 and < -20	Medium Negative (i.e. where the impact could influence the decision to develop in the area)
≥ -20	High Negative (i.e. where the impact must have an influence on the decision process to develop in the area)
< 10	Low Positive (i.e. where this impact would not have a direct influence on the decision to develop in the area)
≥ 10 and < 20	Medium Positive (i.e. where the impact could influence the decision to develop in the area)
≥ 20	High Positive (i.e. where the impact must have an influence on the decision process to develop in the area)

### **3. BACKGROUND LITERATURE REVIEW**

In Southern Africa, the archaeology is divided into the Stone Age, Iron Age and the Historical Period. During these periods, diverse groups of people settled on the Southern African landscape. Several archaeological sites have been identified in the KwaZulu-Natal Province.

The greater Richards bay area and surrounding regions have a long history of occupation by Stone Age hunter gather groups, Iron Age Farming communities and Colonial settlers. Most of the research on the culture, archaeology, rock art in and around the KwaZulu-Natal Province has been conducted by Davies (1976); Mason (1968, 1982, 1986); Kuman *et al.*, (1997); Huffman (2002, 2007); Wadley 2007; Kuman & Field (2009) and Sutton (2012). Previous HIA's and AIA's of Richards bay region have been conducted by Anderson & Anderson (2005, 2009); Anderson (2008 a, b, c, 2013, 2017); Wahl & Van Schalkwyk (2012, 2013); Van Jaarsveld (2013); Prins & Hall (2013); Murimbika (2013, 2014); Galimberti (2015); Prins (2015a, b, 2017); Seliane (2016); Van der Walt (2016, 2017); Maitland (2017) and Tomose (2018).

#### **3.1. The Stone Age**

In South Africa the Stone Age is divided into three periods, namely the Early Stone Age (ESA) (2 million to 250 000 years ago), the Middle Stone Age (MSA) (250 000 – 22 000 years ago) and the Later Stone Age (LSA) (25 000 to 200 years ago). The archaeological history of the KwaZulu-Natal (KZN) Province dates back to about 2 million years and possibly older, marking the beginning of the Stone Age period.

The Early Stone Age (ESA) is the first phase identified in South Africa's archaeological history. It incorporates the period from early to middle Pleistocene and is associated with early hominids and their ancestors (Prins *et al.*, 2013). The archaeological history of the KwaZulu-Natal (KZN) Province dates back to about 2 million years and possibly older- marking the beginning of the Stone Age period (Seliane 2016). The ESA is comprised of the Oldowan stone tool complex (2 and 1.7-1.5 million years ago), and is characterised by small flakes, flaked cobbles and percussive tools (Klein 2000; Mitchell 2002; Diez-Martín *et al.*, 2015; De La Torre 2016). The Acheulean stone tool complex included large hand axes and cleavers (1.7-1.5 million years ago and 250-200 thousand years ago) (Klein 2000; Mitchell 2002; Diez-Martín *et al.*, 2015; De La Torre 2016). Within KZN there are some sites where ESA tools have been

reported. Two known ESA sites occur in the proposed land of 5333 Richards Bay, where artefacts such as hand-axes and cleavers have been found (Anderson *et al.*, 1998). Besides stone artefacts, very little has been produced from the ESA sites in this province. This has made it difficult to make inferences pointing to economical dynamics of the ESA people in this part of the world (Mazel 1989; Prins *et al.*, 2013).

The transition from the Early to Middle Stone Age includes a change in technology from large stone tools to smaller blades and flakes. The MSA stone tool assemblage is associated with anatomically modern humans and includes blades, flakes, scrapers and pointed tools that could have been hafted and used as spears or arrowheads (Wadley 2005). In KZN MSA sites occur around the greater Durban, Pietermaritzburg, as well as Drakensberg areas and are often located in rock shelters. Palaeo-environmental data imply that the distribution of MSA sites in the high lying Drakensberg and surrounding areas was influenced specifically by the amount and duration of snow climate conditions (Carter 1976). Five MSA sites are located in KwaZulu-Natal, they are Sibudu Cave which is located about 40 km from Durban (Wadley & Jacobs 2004), Umhlatuzana Rock Shelter located 35 km west of Durban (Kaplan 1990; Mohapi 2013), Border Cave located in the Lebombo Mountains (Cooke *et al.*, 1945; Butzer *et al.*, 1978; Bird *et al.*, 2003), Umbeli Belli Rock Shelter located near Scottburgh (Badar *et al.*, 2016; Bader & Will 2017), and Holley Shelter located 25 km northeast of Pietermaritzburg in KwaZulu-Natal (Cramb 1961; Badar *et al.*, 2015). During the survey of the heritage impact assessment for the proposed expansion to the Richards Bay harbour conducted by Anderson & Anderson (2009), ESA and MSA stone tools were found on the surface of a disturbed area. A Cretaceous layer was also identified.

The Later Stone Age (LSA) is the third phase identified in South Africa's archaeological history. It incorporates the period from 25 000 years B.P. up to the Iron Age, Historical Periods and contact between hunter-gatherers and Iron Age farmers or European colonists. The LSA is associated with modern humans and is characterised by lithic tool industries such as Smithfield and Robberg. Moreover, the LSA is associated with rock engravings and rock paintings. LSA occupation has also been noted at Sibudu Cave, Umhlatuzana Rock Shelter, Border Cave and Umbeli Belli Rock Shelter (Beaumont *et al.*, 1978; Kaplan 1990; Mitchell 1998; Badar *et al.*, 2016). Stone tools of the LSA are often associated with the San and are smaller and more diverse than the previous periods. During the LSA, the first Khoi herders and Nguni-speaking agro-pastoralists started to immigrate into southern Africa from the north. These groups had contact with the Later Stone Age people, which often led to them migrating to the

Kalahari Desert or being assimilated into the Nguni- speaking cultural groups. Several LSA sites have been located in the Tugela River Basin to the North of Pietermaritzburg, including Mgede Shelter (Mazel 1986), Sikhanyisweni Shelter (Mazel 1988), KwaThwaleyakhe Shelter (Mazel 1993), iNkolimashashi Shelter (Mazel 1999; Badenhorst 2003) and Driel Shelter (Maggs 1980b). Rock art dating to the LSA have also been found in several rock shelters in the Drakensberg Mountains (Willcox 1990), including the rock art site of Game Pass Shelter in the Kamberg Nature Reserve (Hœrlé & Salomon 2004) and a San rock art site of Storm Shelter located in the southern Drakensberg (Blundell & Lewis-Williams 2001), as well as in the areas around Estcourt, Mooi River and Dundee (Van der Walt 2017).

### **3.2. Iron Age**

Several Iron Age sites have been excavated in the wider region of the KZN. The Iron Age, according to Huffman (2007) can be divided into the Early Iron Age (200 – 900 A.D.); the Middle Iron Age (900 – 1300 A.D.); and the Late Iron Age (1300 – 1840 A.D.). The Iron Age is characterized by the farming communities who domesticated animals, produced various ceramic vessels, as well as smelted iron for weapons and tools. Unlike the Stone Age people, Iron Age people led quite complex life styles; their dependence on agriculture necessitated more sedentary settlements (Maggs 1989).

The Early Iron Age communities throughout eastern and southern Africa share a similar Iron Age culture called the Chifumbaze complex (Phillipson 1994; Huffman 2007). The Chifumbaze complex contains evidence of the first farmers who settled in areas with cultivated crops, herded domestic animals, used iron, and who made pots (Phillipson 1994). It can furthermore, be divided into the Kalundu and Urewe Traditions (Huffman 2007). These Early Iron Age farming communities originated in the Great Lakes region of East Africa where Urewe ceramics are the earliest form of the Chifumbaze complex (Phillipson 1994; Mitchell 2002). Part of the Urewe tradition was the Kwale branch, which settlements were restricted to relatively well-watered hilly country and can be found along the coast from Kenya to KwaZulu-Natal (Phillipson 1994; Mitchell 2002). Around the second century AD there took place a swift migration of Iron Age farmers of the Chifumbaze complex (Phillipson 1994). This spread is known as the Nkope branch of the Urewe tradition, which spread through a wide area extending southwards towards

Tanzania and Mozambique, through Malawi, eastern Zambia and Zimbabwe into the northern parts of South Africa, Swaziland and into KwaZulu-Natal (Phillipson 1994; Mitchell 2002).

During the Early Iron Age, settlements were situated on the valley floors and next to rivers (Maggs & Ward 1984; Badenhorst 2010). Early Iron Age sites which are located near the Lower Thukela Basin in KwaZulu-Natal are Mamba (Van Schalkwyk 1994a), Wosi (Van Schalkwyk 1994b), and Ndondondwane (Loubser 1993). Other Early Iron Age sites include Mpambanyoni (Mitchell 2002) and Nanda (Whitelaw 1993). Ceramic pottery styles of the Early Iron Age, including Msuluzi (AD 500-700), Ndondondwane (AD 700-800), and Ntshekane (AD 800-900), are found in the broader areas around Durban and Richards Bay and are specifically located near the Tugela River (Stoffberg & Loubser 1984; Maggs 1989; Huffman 2007). Apart from Early Iron Age ceramics of Ndondondwane, Msuluzi, Mamba and Wosi found in the Tugela basin, evidence of iron production was also found at these sites (Maggs 1980a; Stabbins 1982; Stoffberg & Loubser 1984; Whitelaw 1991; Maggs 1992; van Schalkwyk 1994a and 1994b). During the same survey for the proposed expansion of the Richards Bay harbour, Anderson & Anderson (2009) also found several EIA pottery scattered across the site.

Apart from changes in the ceramic sequence, the Later Iron Age is also characterised by stone walled settlements. The oldest form of the Central Cattle Pattern- a means of social organisation in Iron Age settlements, where relationships between people were constructed through the layout of the settlement (Huffman 2000) was found at a site called Moor Park in the midlands of KwaZulu-Natal (Mitchell 2002; Huffman 2007). Moor Park walling dates to the fourteenth and sixteenth century and is located on a hilltop in a defensive position. It is characterised by rough stone walling that encloses various cattle kraals and areas in the site (Mitchell 2002). Moor Park walling is associated with Nguni speaking people (Huffman 2007). The Later Iron Age communities in KwaZulu-Natal were the direct ancestors of the present-day Zulu people (Middleton 1997; Huffman 2007).

Furthermore, trade played a major role in the economy of LIA societies. Goods were traded locally and over long distances. The main traded goods included: salt, grain, cattle, thatch, and metal- leading to the establishment of economically driven centres and the growth of trade wealth (Maggs 1989; Huffman 2007; Prins *et al.*, 2013). Keeping of domestic animals, the cultivation of crops, and metal work continued with a change in the organisation of economic activities. Iron Age societies practiced iron

smelting quite significantly as they had to produce iron implements for agricultural use (Maggs 1989). However, no smelting sites were discovered in the study area as it is the northern KZN that is rich in abandoned iron smelting sites (Maggs, 1989; Huffman 2007).

### **3.3. Historical Period**

The Historical Period dates from AD 1600 and is generally the period related the *Difiqane* wars and colonial settlement in South Africa. During the historical period, the KwaZulu-Natal region was often left in turmoil due to wars and conflict between the different cultural groups that settled in the area. Sources of evidence for socio-political organization during the mid-eighteenth to early nineteenth century in the study area and the larger former Natal Province suggest that the people here existed in numerous small-scale political units of different sizes, population numbers, and political structures (Wright & Hamilton 1989). During the 2nd half of the eighteenth century, stronger chiefdoms and paramountcies emerged. But due to the fact that there were no proper central political bodies established, the chiefdoms were not fully-grown states (Prins *et al.*, 2013). They became states in the 1780's when a shift towards a more centralized political state occurred. This shift was mainly characterized by population growth and geographical expansion of states (Prins *et al.*, 2013). At this time, the largest and strongest states were the Mabhudu, Ndwandwe and Mthethwa. However, other smaller states, also established themselves in the greater Tugela Region. These included, in the south: the Qwabe, Bhaca, Mbo, Hlubi, Bhele, Ngwane and many others (Wright & Hamilton, 1989). Even with all these states, the Zulu Kingdom, established by King Shaka, remained the most powerful in the region throughout the 19<sup>th</sup> century (Wright & Hamilton, 1989).

During the *Mfecane/Difaqane* at the end of the 18th and beginning of the 19th centuries, communities who had settled in KwaZulu-Natal were displaced and forced to move by wars between the Zulu chiefdoms (Huffman 2007; Ndlovu-Gatsheni 2009; Shillington 2013). Due to the political and climate conditions in the 19th century, one of the generals of King Shaka, Mzilikazi and his Transvaal Ndebele army migrated from KwaZulu-Natal in 1820 and later settled in Zimbabwe (Van Warmelo 1930; Huffman 2007). King Shaka was assassinated by his two half-brothers, King Dingane and Mhlangana in 1828, with King Dingane becoming ruler of the Zulu Kingdom (Wright & Hamilton 1989; Laband 1995; Greaves

2013). During King Dingane's rule, Cape merchants moved into the region to colonize Natal, while the Voortrekkers, who became dissatisfied with British rule, also started to move into the area (McKenna 2011). In 1837 Piet Retief led the Voortrekkers into Natal, where he met with King Dingane to arrange for permission to settle in Natal (Stapleton 2017). The old wagon road the Voortrekkers used in 1838 when they were making their way down the slopes of the Drakensberg mountains and into Pietermaritzburg can still be seen today (Oberholser 1972). Once in Natal, the Dutch farmers encountered the Zulus who lured them into a trap and brutally massacred many of them. This led to a series of battles; the most notable battle being that of the Battle of Blood River in 1838 where the Boers defeated the Zulus (Wright & Hamilton 1989). This ended the Zulu threat to the white settlers, leading to a permanent and formal settlement in Natal being established. However, the Zulu kingdom remained independent for a couple of decades. The Republic of Natalia was annexed by the British in 1845 and in 1879 the Zulu kingdom was also invaded (Wright & Hamilton 1989; Wahl & Van Schalkwyk 2013). During the Anglo-Zulu war in 1879, the Commodore of the Cape, Sir Frederick Richards used the area around Richards bay as a harbour (Wahl & Van Schalkwyk 2013). The town of Richards bay was proclaimed as a town in 1969 (Wahl & Van Schalkwyk 2013).

### **3.4. Conclusions on Literature Review**

In conclusion the background information search has shown that the KwaZulu-Natal region has a long history with many different people migrating and settling in the area. Ulundi and the surrounding areas are rich in archaeology and history which played a role in documenting the lives of the Voortrekkers and the Zulu people. The areas surrounding Ulundi and Empangeni document the Stone Age, Iron Age and Historical Period of the South African human population. As such there are several archaeological and heritage sites located in the KwaZulu-Natal Province that provides evidence of past people's daily activities, the interactions and relationships they had with the people around them. These sites are of historical and cultural importance to the South African people.



#### 4. STUDY RESULTS

The background information yielded information about known archaeological and heritage resources located in KZN, and particularly the areas surrounding and in-between Ulundi and Empangeni. The physical survey focused on the area proposed for the Mfolozi-Mbewu 765kV Transmission Line within Zululand and KCDM, the affected households and the 500 m zone of influence surrounding the proposed development (*Figure. 3-4*). Forty-seven households were initially identified that would be affected by the proposed New 765kV Transmission line. During the survey two abandoned Transnet buildings were identified at two of the household locations. As such the proposed development will affect approximately 45 households (*Appendix 1*). Furthermore, the affected households fall within the 80 m servitude of the proposed line. The Umfolozi substation is located in the northern part of the project area (*Figure. 5*). The area surrounding the substation is primarily underdeveloped and includes several households that will not be affected by the proposed development are spread out through the area. The southern section of the project area is characterised by several agricultural fields (*Figure. 6*), while several Transnet Railway lines was observed throughout the project area (*Figure. 7*). Several existing powerlines have been observed throughout the project area. In multiple cases the affected properties are located directly next to or within 10 m of the existing powerlines (*Figure. 8 and 9*).

The environment of the project area can be characterised as hilly and mountainous consisting of grass and bushveld type shrubs and trees. The White Mfolozi river is located to the south-west of the project area and runs east-west with the middle section of the proposed powerlines (*Figure. 10*). Most of the area is underdeveloped and contains several communities living in informal settlements with small brick and mortar structures or mud and stone houses. The general layout of the homesteads of the affected households consisted of several structures which included rondavels and square structures, outside toilet areas, animal enclosures, and gardens. Most of the affected households had one or more rondavels on the property. The structures were used as multiple purpose rooms for cooking, sleeping, gathering and rituals. Rondavels or *indlu yabantu abadala*, were found on the properties of most of the affected households. According to Whenlan (2001) rondavels are seen as proper homes by the ancestors, as such many families would have a rondavel on the property out of cultural respect for their ancestors. These circular structures are used to consult the ancestors as well as perform the family's traditional

rituals. In Zulu culture the homestead has cultural significance as it is tied with their beliefs and traditions.

During the survey three Archaeological objects (*Table. 10-15*), the ruins of two Transnet buildings (*Table. 16-19*), an Open-Air Church (*Table. 20-21*), a traditional house (*Table. 22-23*), an izigodla, 30 graves (*Table. 24-41, 46-51*), three communal cemeteries (*Table. 42-45, 52-53*) and two ancestral prayer sites (*Table. 44-35*) were identified. Detailed descriptions of all the heritage resources, as well as the recommended mitigation measures are discussed below.

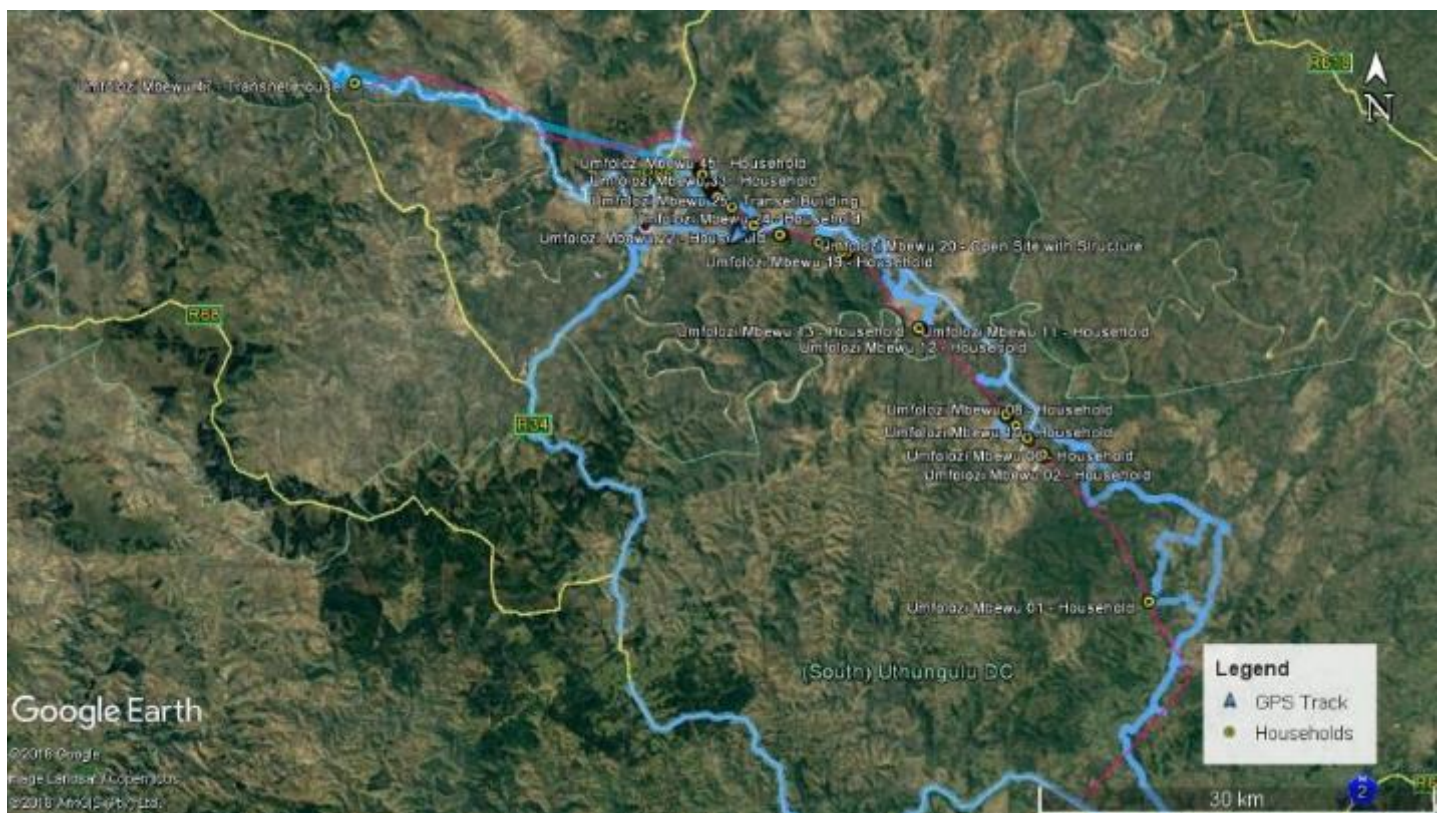


Figure 3: Google Earth image showing the GPS Track of the survey of the project area.





Figure 4: Google Earth image showing the archaeological sites and graves identified in the project area.



*Figure 5: General view of the area and environment surrounding the Umfolozi Substation*



*Figure 6: Several Agricultural fields are located in the Southern section of the project area (near Transmission tower 39 and 40).*





*Figure 7: Transnet Railway lines and buildings found throughout the project area.*



*Figure 8: Pre-existing powerlines running through the project area.*



*Figure 9: Examples of affected households located right next to the existing Powerlines.*



*Figure 10: The White Mfolozi river located south of the project area.*

#### 4.1. Archaeological Sites

Below are tables with site information and impact assessment ratings

Table 11: Site Complex-01

Site Name:	Site Complex -01	
Type:	Pottery	
Density:	Low to medium	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>28° 28' 14.43" S</li><li>31° 43' 25.88" E</li></ul>	
Approximate Age:	Iron Age	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 35 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
29	125 m	46,6 m
Several sherds of pottery located in a small footpath was identified ( <i>Figure. 11</i> ). The disturbed nature of the footpath exposed several undecorated and undiagnostic sherds buried in the ground ( <i>Figure. 12</i> ). Household 3 is located approximately 125 m west of Transmission Tower 29. Although pottery has been found in the area, the area cannot be characterised as a site, since the pottery was found in a disturbed context and in low density.		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>It is recommended that the area be monitoring by a qualified archaeologist during proposed construction of the powerlines, as there is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.</li><li>Subject to approval from Amafa</li></ul>		

Table 12: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -01)

Disturbance of heritage resources: Site Complex-01						
Heritage Impact Assessment	Disturbance of heritage resources					
	Proposal					
	Planning, Construction and Operational					
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	3
	Extent of Impact	2	1	Reversibility of Impact	4	3
	Duration of Impact	2	2	Probability	5	5
	Environmental Risk (Pre-mitigation)					-16,25
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 11					
	Environmental Risk (Post-mitigation)					-11,25
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,50
	Final Significance					-16,88
	High Negative (i.e. where the impact must have an influence on the decision process to develop in the area)					





*Figure 11: Small footpath leading to Household 3. (Yellow arrow indicates area where sherds have been exposed).*



*Figure 12: Several undecorated sherds that have been exposed*

Table 13: Site Complex-02

Site Name:	Site Complex-02	
Type:	Stone Tool Flake	
Density:	Low	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>28° 28' 14.83" S</li><li>31° 43' 26.67" E</li></ul>	
Approximate Age:	Stone Age	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 35 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
29	116,14 m	22,35 m
Archaeological artefacts were identified on the property of Household 3, which is located close to Transmission Tower 29. A small stone tool flake was observed near one of the house structures (Figure. 13). Although a stone tool has been found in the area, the area cannot be characterised as a site, since the stone tool was found in a disturbed context and in low density. No other stone tools were observed on the property of this household.		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>It is recommended that the area be monitoring by a qualified archaeologist during proposed construction of the powerlines, as there is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.</li><li>Subject to approval from Amafa</li></ul>		

Table 14: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -02)

Disturbance/Destruction of heritage resources: Site Complex-02						
Heritage Impact Assessment	Impact Name	Disturbance/Destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction, Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	2
	Extent of Impact	2	1	Reversibility of Impact	4	2
	Duration of Impact	2	2	Probability	5	4
	Environmental Risk (Pre-mitigation)					-16,25
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 13					
	Environmental Risk (Post-mitigation)					-7,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					1
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-9,33
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					



Figure 13: Small flake (yellow arrow) identified on the property of Household 3

Table 15: Site Complex-03

Site Name:	Site Complex -03	
Type:	Lower Grinding stone-01	
Density:	Low	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>• 28° 17' 37.39" S</li><li>• 31° 28' 10.09" E</li></ul>	
Approximate Age:	Iron Age	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>• Section 35 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
19	59,5 m	26,2 m
A Lower Grinding stone was found at Household 31 ( <i>Figure. 14</i> ). The grinding stone was found out of context, and possibly being used by the family who occupy the property. No upper grinding stone was found. Although a grinding stone has been found in the area, the area cannot be characterised as a site, since the grinding stone was found in a disturbed context and in low density.		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>- It is recommended that the Grinding stone be taken to the KwaZulu-Natal Museum in Pietermaritzburg where it can be used as part of the teaching collection.</li><li>- Subject to approval from Amafa</li></ul>		

Table 16: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -02)

Disturbance/Destruction of heritage resources: Site Complex-03						
Heritage Impact Assessment	Impact Name	Disturbance/Destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction, Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	2
	Extent of Impact	2	1	Reversibility of Impact	4	2
	Duration of Impact	2	2	Probability	5	4
	Environmental Risk (Pre-mitigation)					-16,25
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 15					
	Environmental Risk (Post-mitigation)					-7,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					1
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-9,33
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					





Figure 14: Lower Grinding stone found at Household 31.

#### 4.2. Built Environment Features

Table 17: Site Complex-04

Site Name:		Site Complex-04	
Type:		Transnet Building-01	
Density:		Low	
Location/GPS Coordinates:		<ul style="list-style-type: none"><li>• 28° 18' 10.80" S</li><li>• 31° 29' 2.13" E</li></ul>	
Approximate Age:		Contemporary	
Applicable Sections of the Relevant Acts:		<ul style="list-style-type: none"><li>• Section 34 of the NHRA, No. 25 of 1999</li></ul>	
Description:			
Tower Nr:	Distance from the pylon	Distance from the servitude centre line	
21	958,1 m	12,2 m	
Household 25 or Site Complex-04 is the ruins of a building that was used by Transnet. The building has been abandoned ( <i>Figure. 15</i> ). No other archaeological material was found in the area that is associated with Transnet House-01. The ruins of the building have no heritage value.			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>- The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it can be destroyed.</li><li>- Subject to Amafa approval</li></ul>			

Table 18: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -04)

Disturbance of heritage resources: Site Complex-04						
Heritage Impact Assessment	Impact Name	Disturbance of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction, Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	3	2
	Extent of Impact	2	1	Reversibility of Impact	3	2
	Duration of Impact	2	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-12,50
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 17					
	Environmental Risk (Post-mitigation)					-3,50
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					1
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-4,67
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					



*Figure 15: View of the 4 corners of Transnet House-01 structure*



Table 19: Site Complex-05

Site Name:	Site Complex-05	
Type:	Transnet Building-02	
Density:	Low	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>28° 13' 4.50" S</li><li>31° 11' 36.71" E</li></ul>	
Approximate Age:	Contemporary	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 35 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
1	262,1 m	17,2 m
<p>Household 47 or Site Complex – 05 is the ruins of a building that was used by Transnet. The building has been abandoned (<i>Figure. 16</i>). No other archaeological material was found in the area that is associated with Transnet House-02. The ruins of the building have no heritage value.</p>		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it can be destroyed.</li><li>Subject to Amafa approval</li></ul>		

Table 20: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -05)

Disturbance of heritage resources: Site Complex-05						
Heritage Impact Assessment	Impact Name	Disturbance of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction, Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	3	2
	Extent of Impact	2	1	Reversibility of Impact	3	2
	Duration of Impact	2	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-12,50
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 19					
	Environmental Risk (Post-mitigation)					-3,50
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					1
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-4,67
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					



*Figure 16: View of the 4 corners of Transnet Building-02 structure*

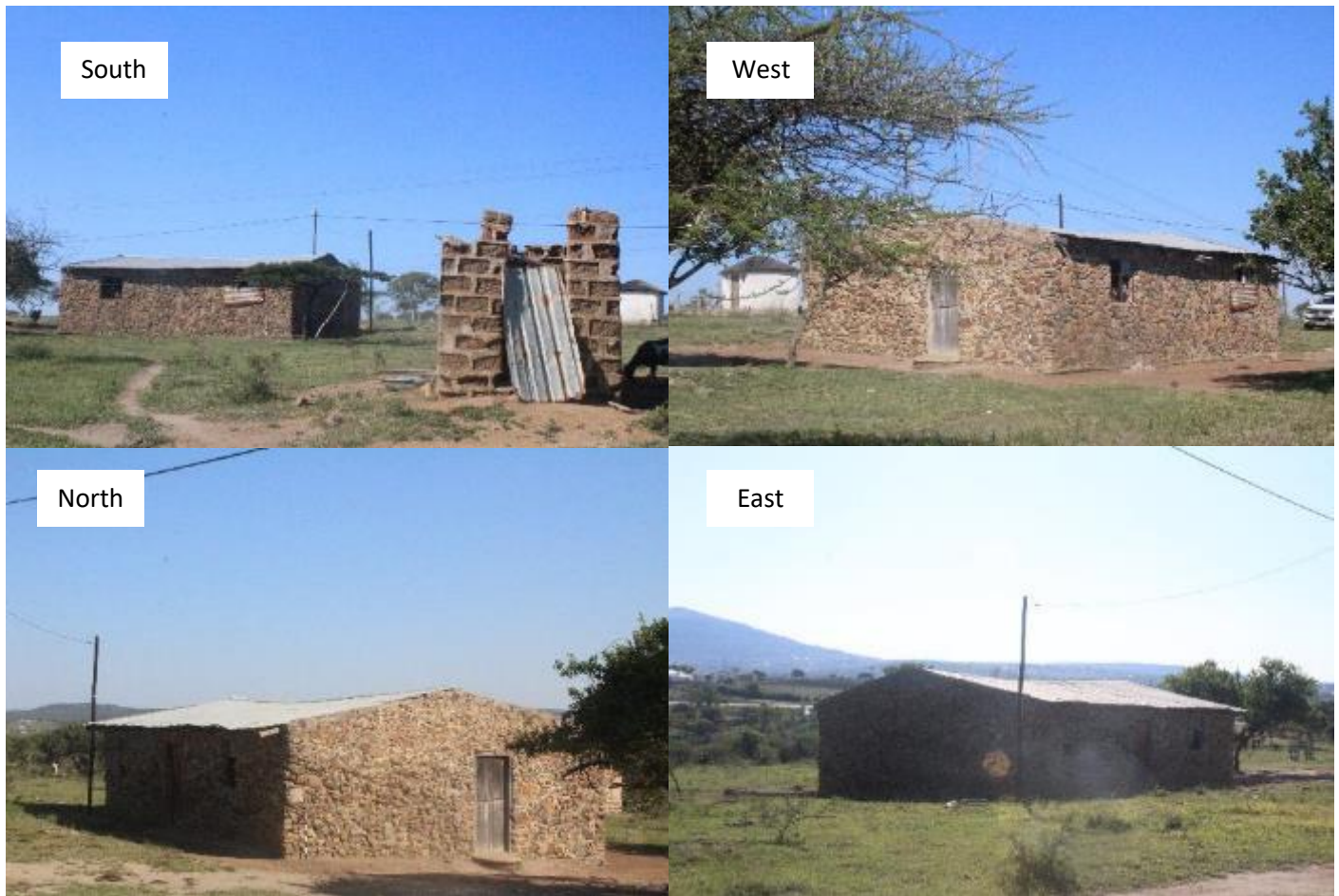
Table 21: Site Complex-06

Site Name:		Site Complex-06	
Type:		Open-Air Church-01	
Density:		Medium	
Location/GPS Coordinates:		<ul style="list-style-type: none"><li>28° 27' 32.60" S</li><li>31° 42' 43.10" E</li></ul>	
Approximate Age:		Contemporary	
Applicable Sections of the Relevant Acts:		<ul style="list-style-type: none"><li>Section 34 of the NHRA, No. 25 of 1999</li></ul>	
Description:			
Tower Nr:	Distance from the pylon	Distance from the servitude centre line	
26	553,40 m	48,58 m	
<p>A Shembe Open-Air Church is located next to Household 6, which will be impacted by the proposed project activities. The stone building next to the Church grounds is used by members of the Church community as a hall (<i>Figure. 17-18</i>). A small outdoor toilet of mudbrick is also located on the property. According to Pastor Shabangu the church has been part of the community for approximately 20 years. The infrastructure on the property of Household 6 have no heritage value. The small white building next to the Open-Air Church also has no heritage value, however the area is being used for the Open-Air Church and is of cultural significance. No other archaeological material was found in the area.</p>			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The buildings have no heritage significance and can be destroyed.</li><li>The Church needs to be relocated to an appropriate area, where members of the church can freely practice their beliefs. The Shembe Church needs to be compensated appropriately for the relocation by the developer. The compensation should include the costs of new land, cost notifying the chiefs, costs of buying and slaughtering animals, food, and the blessing of the new church site.</li><li>Subject to Amafa approval</li></ul>			

Table 22: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -06)

		Disturbance/destruction of cultural resources: Site Complex-06				
Heritage Impact Assessment	Impact Name	Disturbance/destruction of cultural resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	3	2	Reversibility of Impact	3	3
	Duration of Impact	5	4	Probability	5	3
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 21					
	Environmental Risk (Post-mitigation)					-9,00
	Degree of confidence in impact prediction:					Medium
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-12,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 17: Four Corners of the property of Household 6.*



*Figure 18: General view of the Shembe Open-Air Church*

Table 23: Site Complex-07

Site Name:	Site Complex-07	
Type:	Traditional House-01	
Density:	Low/Medium	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>28° 20' 4.09" S</li><li>31° 34' 23.65" E</li></ul>	
Approximate Age:	Contemporary	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 34 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
23	4,7 km	21,4 m
<p>A small rondavel was identified on the property of Household 14 (<i>Figure. 19-20</i>). The rondavel had the skull of an animal, most likely a cow, which was placed on top of the small door at the entrance. The structure is used as part of the family’s traditional rituals and beliefs. The small rondavel is located in between two bigger rondavels that are occupied by the family.</p>		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>Although the building is of cultural significance, it can be destroyed. However, families should be appropriately compensated and allowed to perform any rituals related to the small rondavel before vacating the property.</li><li>Subject to Amafa approval</li></ul>		

Table 24: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -07)

Disturbance/destruction of cultural resources: Site Complex-07						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of cultural resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	3	3	Reversibility of Impact	3	3
	Duration of Impact	5	5	Probability	5	3
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 23					
	Environmental Risk (Post-mitigation)					-10,50
	Degree of confidence in impact prediction:					Medium
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-14,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 19: Traditional House-01 found at Household 14*



*Figure 20: View of property and structures, including the two big and 1 small rondavel found at Household 14 (Photo taken from the north-east)*

Table 25: Site Complex-08

Site Name:	Site Complex-08	
Type:	Izigodlo-01	
Density:	Medium	
Location/GPS Coordinates:	<ul style="list-style-type: none"><li>28° 16' 42.87" S</li><li>31° 27' 35.53" E</li></ul>	
Approximate Age:	Contemporary	
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 34 of the NHRA, No. 25 of 1999</li></ul>	
Description:		
Tower Nr:	Distance from the pylon	Distance from the servitude centre line
18	1,83 km	25,1 m
<p>The ruins of a small rondavel or <i>izigodla</i> was identified on the property of Household 41 (<i>Figure. 21-22</i>). The structure was used by a family member, who is also a sangoma to consult the ancestors as well as to sell traditional medicines. The other structures of the property have been abandoned by the family who moved to another location.</p>		
Recommended Mitigation Measures:		
<ul style="list-style-type: none"><li>Although the building is of cultural significance, it can be destroyed as it is already in ruins and the family has already settled somewhere else. However, families should be appropriately compensated and allowed to perform any rituals related to the izigodlo before the construction activities start.</li><li>Subject to Amafa approval</li></ul>		

Table 26: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Site Complex -08)

	A Disturbance/destruction of cultural resources: Site Complex-08					
Heritage Impact Assessment	Impact Name	A Disturbance/destruction of cultural resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	3	2	Reversibility of Impact	3	3
	Duration of Impact	5	5	Probability	5	3
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 25					
	Environmental Risk (Post-mitigation)					-9,75
	Degree of confidence in impact prediction:					Medium
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-13,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 21: The ruins of a small rondavel or izigodla*



*Figure 22: Ruins of the structures found on the property of Household 41 (Photo taken facing south-west).*

#### 4.3. Burial Grounds and Graves

Table 27: Burial Site Complex-01

Site Name:	Burial Site Complex-01					
Type:	Graves					
Density:	Low					
Location/GPS Coordinates:	<div>Grave A1:<ul style="list-style-type: none"><li>28° 34' 13.90" S</li><li>31° 48' 23.60" E</li></ul></div> <div>Grave A2:<ul style="list-style-type: none"><li>28° 34' 14.94" S</li><li>31° 48' 21.39" E</li></ul></div> <div>Grave A3:<ul style="list-style-type: none"><li>28° 34' 14.60" S</li><li>31° 48' 20.45" E</li></ul></div>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
Site:	Tower Nr:	Distance from the pylon		Distance from the servitude centre line		
Grave A1	32	3,20 km		50 m		
Grave A2	32	3,19 km		18,4 m		
Grave A3	32	3,21 km		42,9 m		
Three graves were identified at Household 1. The graves belong to the family of Household 1. Grave A1 and Grave A2 do not have headstones and is surrounded by packed stones ( <i>Figure. 22 and 23</i> ). Grave A3 contains no headstone but has packed stones on the top and is surrounded by cement bricks ( <i>Figure. 24</i> ). As such the graves identified are:						
	Name	Age	Sex:	Date of Birth	Date of Death	Relation
Grave A1	Ntombela	2 year	Male		1990	Grandson

Grave A2:	Ntombela	1 year	Male	2000	Grandson
Grave A3:	Bheki Ntombela		Male	± 2013	Brother

The property of Household 1 is located in-between Transmission Towers 31 and 32. It is likely that through the construction of the Powerlines these graves will be impacted. Grave A2 will be negatively affected as the line corridor servitude traverses through it, while Graves A1 and A3 fall outside the line servitude but is located within the impact zone and in line to be affected by the project activities.

**Recommended Mitigation Measures:**

- The graves should be fenced and demarcated as an area of heritage significance.
- It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.
- Subject to Amafa approval

Table 28: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-01)

	Disturbance/destruction of heritage resources: Burial Site Complex-01					
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	3	2	Reversibility of Impact	4	3
	Duration of Impact	4	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 27					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 23: Grave A1 found at Burial Site Complex-01*



*Figure 24: Grave A2 found at Burial Site Complex-01*



*Figure 25: Grave A3 found at Burial Site Complex-01*



Table 29: Burial Site Complex-02

Site Name:	Burial Site Complex-02					
Type:	Graves					
Density:	Low					
Location/GPS Coordinates:	Grave A4 – A7: <ul style="list-style-type: none"><li>28° 28' 17.55" S</li><li>28° 28' 17.55" S</li></ul>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	29	25,1 m	24,9 m			
Four graves were identified at Household 2. These graves were numbered A4-A7 respectively and were located next to each other. The graves contained packed stones, and none had headstones. Of the four graves the family members could only identify Grave A1 as belonging to Thengezakhe Thokozane <i>Mhlongo</i> (Figure. 26). The family also could remember some information for the three remaining graves but did not know which grave belonged to which individual (Figure. 27). As such the individuals buried at Household 2 are:						
	Name	Age	Sex: Date of Birth Date of Death Relation			
Grave A4	Thengezakhe Thokozane Mhlongo		Male			Husband
	Mzikhona Mhlongo		Male	1993	2016	Cousins
	Nqomekeni Mhlongo		Male		2007	Cousins
	Muke Mncwane		Male	1985	2008	Wife of one of the Uncles
The property of Household 2 is located in-between Transmission Tower 29. It is likely that through the						

construction of the Powerlines these graves will be impacted and negatively affected as the line corridor servitude traverses through them.

**Recommended Mitigation Measures:**

- The graves should be fenced and demarcated as an area of heritage significance.
- It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.
- Move Tower 29 200 m south-east along the transmission line
- Subject to Amafa approval

Table 30: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-02)

Disturbance/destruction of heritage resources: Burial Site Complex-02						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	3
	Extent of Impact	3	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-21,25
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 29					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



Figure 26: Grave A4 at Household 2, belonging to Thengezakhe Thokozane Mhlongo

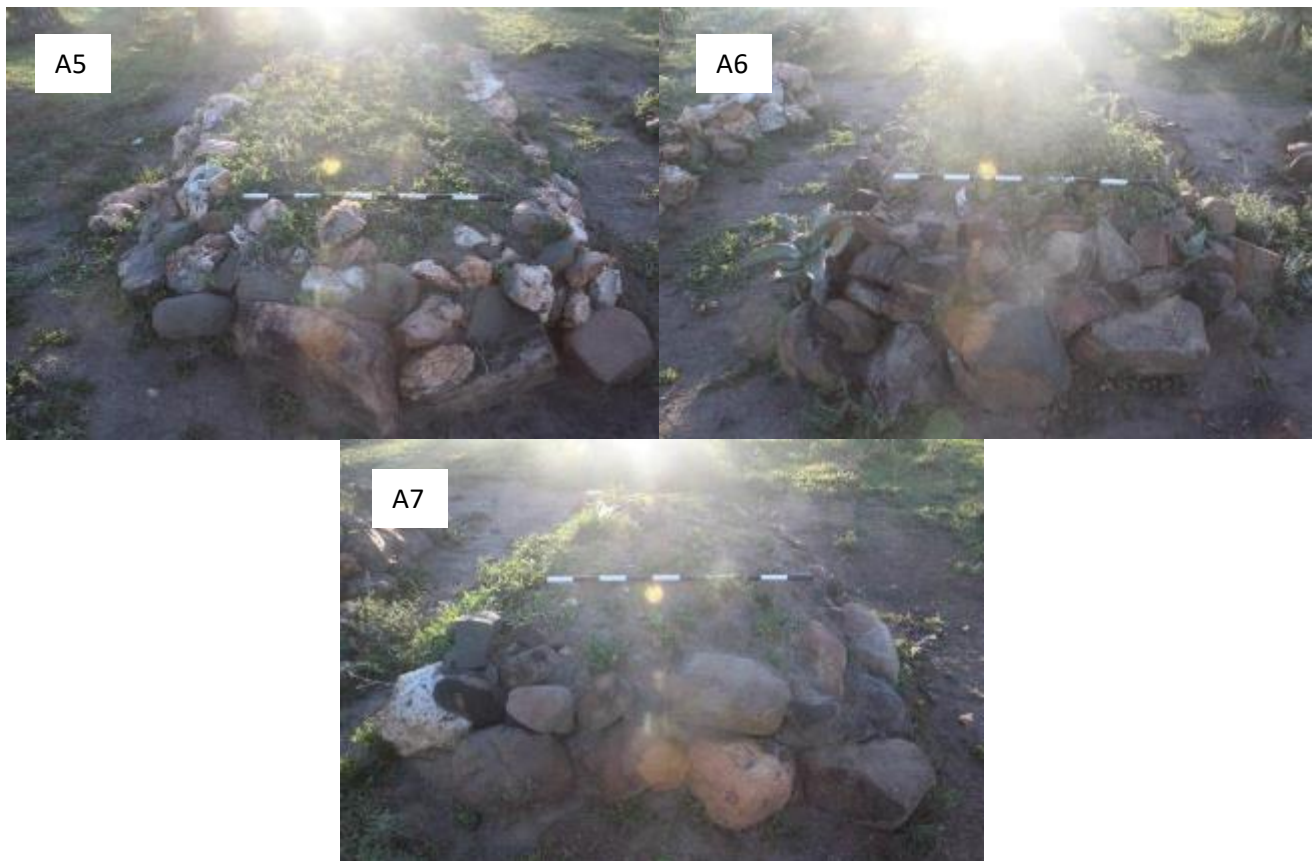


Figure 27: Three remaining graves (Grave A2-A4) located at Household 2.

Table 31: Burial Site Complex-03

Site Name:	Burial Site Complex-03																																		
Type:	Graves																																		
Density:	Low																																		
Location/GPS Coordinates:	Grave A8 -A11: <ul style="list-style-type: none"><li>28° 28' 16.81" S</li><li>31° 43' 27.59" E</li></ul>																																		
Approximate Age:	Contemporary																																		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>																																		
Description:																																			
<table><tr><td>Tower Nr:</td><td>Distance from the pylon</td><td colspan="4">Distance from the servitude centre line</td></tr><tr><td>29</td><td>53,1 m</td><td colspan="4">7,5 m</td></tr></table>						Tower Nr:	Distance from the pylon	Distance from the servitude centre line				29	53,1 m	7,5 m																					
Tower Nr:	Distance from the pylon	Distance from the servitude centre line																																	
29	53,1 m	7,5 m																																	
<p>Four graves were identified at Household 3. These graves were numbered A8-A11 respectively (<i>Figure. 28</i>). The graves contained packed stones, and none had headstones. The family also could only remember some information for the graves but did not know which grave belonged to which individual. As such the individuals buried at Household 3 are:</p> <table><tr><td>Name</td><td>Age</td><td>Sex:</td><td>Date of Birth</td><td>Date of Death</td><td>Relation</td></tr><tr><td>Senzo Ntshangase</td><td></td><td>Male</td><td>1972</td><td>2002</td><td>Son</td></tr><tr><td>Mandla Ntshangase</td><td></td><td>Male</td><td></td><td>2004</td><td>Son</td></tr><tr><td>Ntshangase</td><td>9</td><td>Female</td><td></td><td></td><td>Granddaughter</td></tr><tr><td>Ntshangase</td><td>9</td><td>Female</td><td></td><td></td><td>Granddaughter</td></tr></table>						Name	Age	Sex:	Date of Birth	Date of Death	Relation	Senzo Ntshangase		Male	1972	2002	Son	Mandla Ntshangase		Male		2004	Son	Ntshangase	9	Female			Granddaughter	Ntshangase	9	Female			Granddaughter
Name	Age	Sex:	Date of Birth	Date of Death	Relation																														
Senzo Ntshangase		Male	1972	2002	Son																														
Mandla Ntshangase		Male		2004	Son																														
Ntshangase	9	Female			Granddaughter																														
Ntshangase	9	Female			Granddaughter																														
<p>The property of Household 3 is located close to Transmission Tower 29. It is likely that through the construction of the Powerlines and Transmission towers these graves will be impacted.</p>																																			
Recommended Mitigation Measures:																																			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Move Tower 29 200 m south-east along the transmission line (<i>Figure. 29</i>)</li><li>Subject to Amafa approval</li></ul>																																			

Table 32: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-03)

Disturbance/destruction of heritage resources: Burial Site Complex-03						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	3	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-20,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 31					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 28: Four graves located near Household 3*





Figure 29: Google Earth map showing the proposed new position of Tower 29

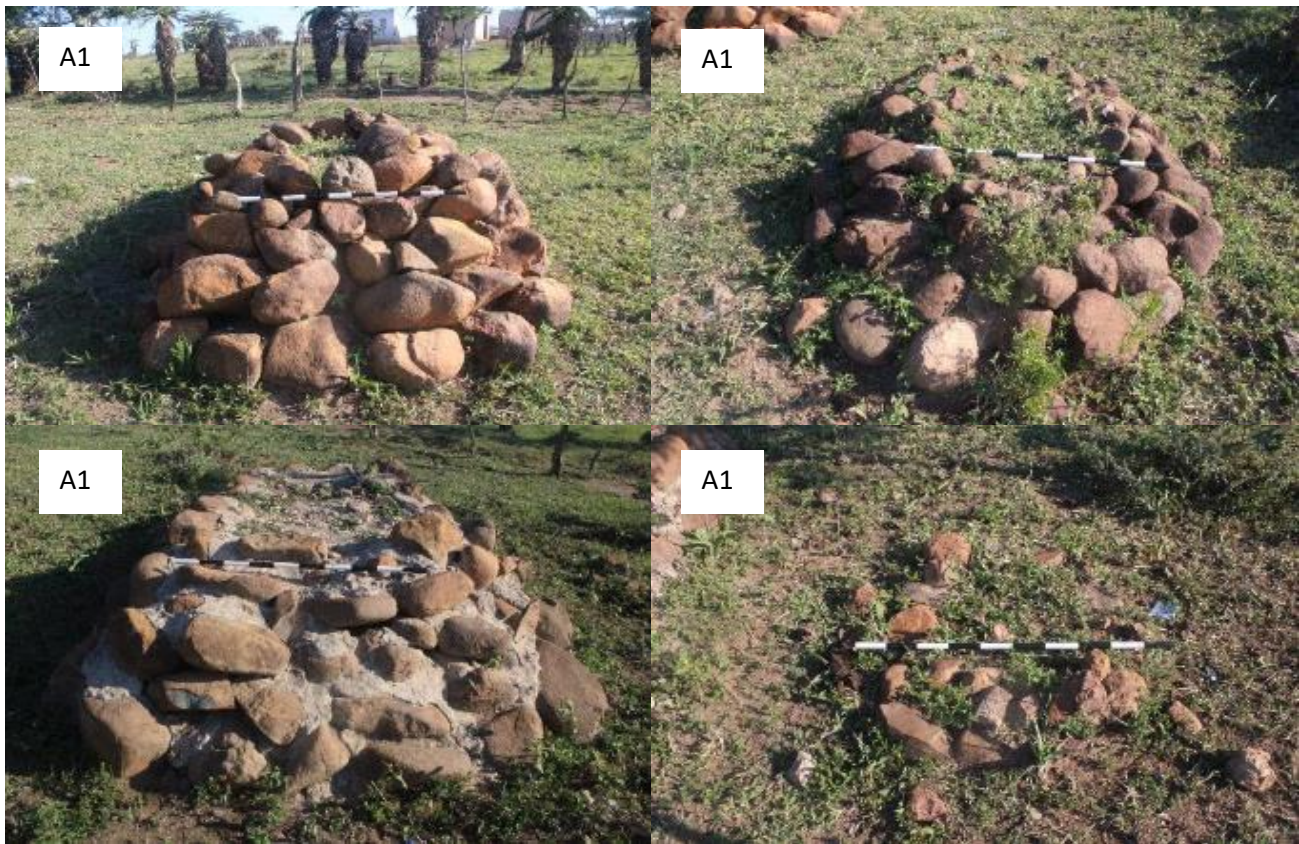
Table 33: Burial Site Complex-04

Site Name:	Burial Site Complex-04					
Type:	Graves					
Density:	Low					
Location/GPS Coordinates:	Grave A12-A15: <ul style="list-style-type: none"><li>28° 28' 15.45" S</li><li>31° 43' 21.52" E</li></ul>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	28	190,1 m	101,2			
Four graves were identified at Household 4. These graves were numbered A12-A15 respectively and were located together ( <i>Figure. 30</i> ). The graves consist of packed stones. None of the graves had headstones. Furthermore, the family could provide information regarding the individuals buried on the property but weren't able to identify to which individuals the graves belonged. As such the individuals buried at Household 4 are:						
	Name	Age	Sex:	Date of Birth	Date of Death	Relation
	Lungelo Biyela	3 years	Male		2016	
	Thandekile Biyela	25 years	Female	1986	2011	
	Bhekiyise Biyela	±17	Male	1997	±2014	
	Qhondeni Biyela	±52	Male	±1962	2014	
The property of Household 4 is located close to Transmission Towers 28. Although the graves fall outside the proposed servitude of the Transmission line, it is likely that through the construction of the Powerlines these graves will be impacted.						
Recommended Mitigation Measures:						
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Move Tower 29 200 m south-east along the transmission line (<i>Figure. 29</i>)</li><li>Subject to Amafa approval</li></ul>						

Table 34: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-04)

Disturbance/destruction of heritage resources: Burial Site Complex-04						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	3	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-17,50
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 33					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 30: Four graves located near Household 4.*

Table 35: Burial Site Complex-05

Site Name:	Burial Site Complex-05							
Type:	Graves							
Density:	High							
Location/GPS Coordinates:	Grave A16-A20: <ul style="list-style-type: none"><li>28° 26' 38.84" S</li><li>31° 41' 48.19" E</li></ul>							
Approximate Age:	Contemporary							
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>							
Description:								
	<table><tr><th>Tower Nr:</th><th>Distance from the pylon</th><th>Distance from the servitude centre line</th></tr><tr><td>25</td><td>131,0 m</td><td>91,0 m</td></tr></table>	Tower Nr:	Distance from the pylon	Distance from the servitude centre line	25	131,0 m	91,0 m	
Tower Nr:	Distance from the pylon	Distance from the servitude centre line						
25	131,0 m	91,0 m						
<p>Five graves were identified near Household 8. These graves were numbered A16-A20 respectively and were located together (<i>Figure. 31-32</i>). The graves consist of packed stones. None of the graves had headstones. The graves are of unknown individuals. The graves are located close to Transmission Towers 25. Although the graves fall outside the proposed servitude of the Transmission line, it is likely that through the construction of the Powerlines these graves will be impacted.</p>								
Recommended Mitigation Measures:								
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>								



Table 36: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-05)

Disturbance/destruction of heritage resources: Burial Site Complex-05						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction, and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	3	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-17,50
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 35					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



Figure 31: General view of graves of Burial Site Complex-05



Figure 32: Graves A16-A20 located close to Household 8

Table 37: Burial Site Complex-06

Site Name:	Burial Site Complex-06					
Type:	Graves					
Density:	High					
Location/GPS Coordinates:	Graves A21-A22: <ul style="list-style-type: none"><li>28° 26' 38.68" S</li><li>31° 41' 43.43" E</li></ul>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	24	51,1 m	3,8 m			
<p>Two graves were identified near Household 8. These graves were numbered A21-A22 respectively and were located together (<i>Figure. 33</i>). The graves consist of packed stones and is surrounded by cement bricks. None of the graves had headstones. The graves are located close to Transmission Towers 24 and will most likely be impacted by the construction of the Powerlines. The family also could only remember some information for the graves but did not know which grave belonged to which individual. As such the individuals buried at Household 8 are:</p>						
	Name	Age	Sex:	Date of Birth	Date of Death	Relation
	Nengweni Mahlaba	±60	Female	±1956	2015	Grandmother
	Mahlaba	77	Male	1936	2013	Grandfather
Recommended Mitigation Measures:						
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Move Tower 24 100 m north-west along the transmission line (<i>Figure. 34</i>).</li><li>Subject to Amafa approval</li></ul>						

Table 38: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-06)

Disturbance/destruction of heritage resources: Burial Site Complex-06						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 37					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 33: Two graves A21-A22 located at Household 8.*





Figure 34: Google Earth map indicating the new proposed position of Tower 24.



Table 39: Burial Site Complex-07

Site Name:	Burial Site Complex-07		
Type:	Grave		
Density:	High		
Location/GPS Coordinates:	Grave A23 <ul style="list-style-type: none"><li>28° 26' 35.88" S</li><li>31° 41' 42.04" E</li></ul>		
Approximate Age:	Contemporary		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>		
Description:			
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line
	24	48,8 m	25,4 m
One grave was identified on the property owned by Household 10. This grave was numbered A23 ( <i>Figure. 35</i> ). The grave consists of packed stones and contained no headstone. The graves are located close to Transmission Towers 24 and will most likely be impacted by the construction of the Powerlines. The grave belonged to an unknown individual.			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Move Tower 24 100 m north-west along the transmission line (<i>Figure. 34</i>)</li><li>Subject to Amafa approval</li></ul>			

Table 40: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-07)

Disturbance/destruction of heritage resources: Burial Site Complex-07						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	5	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-18,75
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 39					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 35: Grave A23 located at Household 10.*

Table 41: Burial Site Complex-08

Site Name:	Burial Site Complex-08					
Type:	Grave					
Density:	High					
Location/GPS Coordinates:	Grave A24: <ul style="list-style-type: none"><li>28° 23' 11.74" S</li><li>31° 37' 42.44" E</li></ul>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	24	9,09 km	134,1 m			
<p>One grave was identified on the property owned by Household 12. This grave was numbered A24 (<i>Figure. 36</i>). The grave consists of packed stones and contained no headstone. The graves are located close to Transmission Towers 24 and will most likely be impacted by the construction of the Powerlines. The family also could only remember some information for the graves but did not know which grave belonged to which individual. As such the individuals buried at Household 12 are:</p>						
	Name	Age	Sex:	Date of Birth	Date of Death	Relation
	Gabela	18	Male			
Recommended Mitigation Measures:						
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>						

Table 42: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-08)

Disturbance/destruction of heritage resources: Burial Site Complex-08						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	3	2	Probability	4	2
	Environmental Risk (Pre-mitigation)					-13,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 41					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 36: Grave A24 found at Household 12*



Table 43: Burial Site Complex-09

Site Name:	Burial Site Complex-09							
Type:	Grave							
Density:	High							
Location/GPS Coordinates:	Grave A25: <ul style="list-style-type: none"><li>28° 23' 5.49" S</li><li>31° 37' 40.39" E</li></ul>							
Approximate Age:	Contemporary							
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>							
Description:								
	<table><tr><th>Tower Nr:</th><th>Distance from the pylon</th><th>Distance from the servitude centre line</th></tr><tr><td>24</td><td>9,26 km</td><td>14,26 m</td></tr></table>	Tower Nr:	Distance from the pylon	Distance from the servitude centre line	24	9,26 km	14,26 m	
Tower Nr:	Distance from the pylon	Distance from the servitude centre line						
24	9,26 km	14,26 m						
One grave was identified on the property owned by Household 13. This grave was numbered A25 ( <i>Figure. 37</i> ). The grave consists of packed stones and contained no headstone. The grave is located close to Transmission Tower 24 and will most likely be impacted by the construction of the Powerlines. The grave belongs to an unknown individual.								
Recommended Mitigation Measures:								
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>								

Table 44: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-09)

Disturbance/destruction of heritage resources: Burial Site Complex-09						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	3	2	Probability	5	2
	Environmental Risk (Pre-mitigation)					-16,25
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 43					
	Environmental Risk (Post-mitigation)					-5,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 37: Grave A25 found at Household 13*

Table 45: Burial Site Complex-10

Site Name:	Burial Site Complex-10							
Type:	Burial Ground and Graves							
Density:	High							
Location/GPS Coordinates:	Community Cemetery-01 <ul style="list-style-type: none"><li>28° 21' 48.63" S</li><li>31° 36' 43.32" E</li></ul>							
Approximate Age:	Contemporary							
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>							
Description:								
	<table><tr><th>Tower Nr:</th><th>Distance from the pylon</th><th>Distance from the servitude centre line</th></tr><tr><td>23</td><td>9,50 km</td><td>752 m</td></tr></table>	Tower Nr:	Distance from the pylon	Distance from the servitude centre line	23	9,50 km	752 m	
Tower Nr:	Distance from the pylon	Distance from the servitude centre line						
23	9,50 km	752 m						
A community cemetery was identified 2,8 km north west of Household 11. The cemetery consists of several packed stones graves with some containing headstones ( <i>Figure. 38</i> ). The grave is located south east of Transmission Tower 23. Although the cemetery falls outside the 500 m zone of influence it should be mentioned as it contains heritage significance.								
Recommended Mitigation Measures:								
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>								

Table 46: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-10)

Disturbance/destruction of heritage resources: Burial Site Complex-10						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	3
	Extent of Impact	2	2	Reversibility of Impact	4	3
	Duration of Impact	3	2	Probability	2	1
	Environmental Risk (Pre-mitigation)					-6,50
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 45					
	Environmental Risk (Post-mitigation)					-2,50
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					3
	Issue has received an intense meaningful and justifiable public response					
	Cumulative Impacts					3
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					2,00
	Final Significance					-5,00
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					



*Figure 38: Community Cemetery-01 found in the project area.*

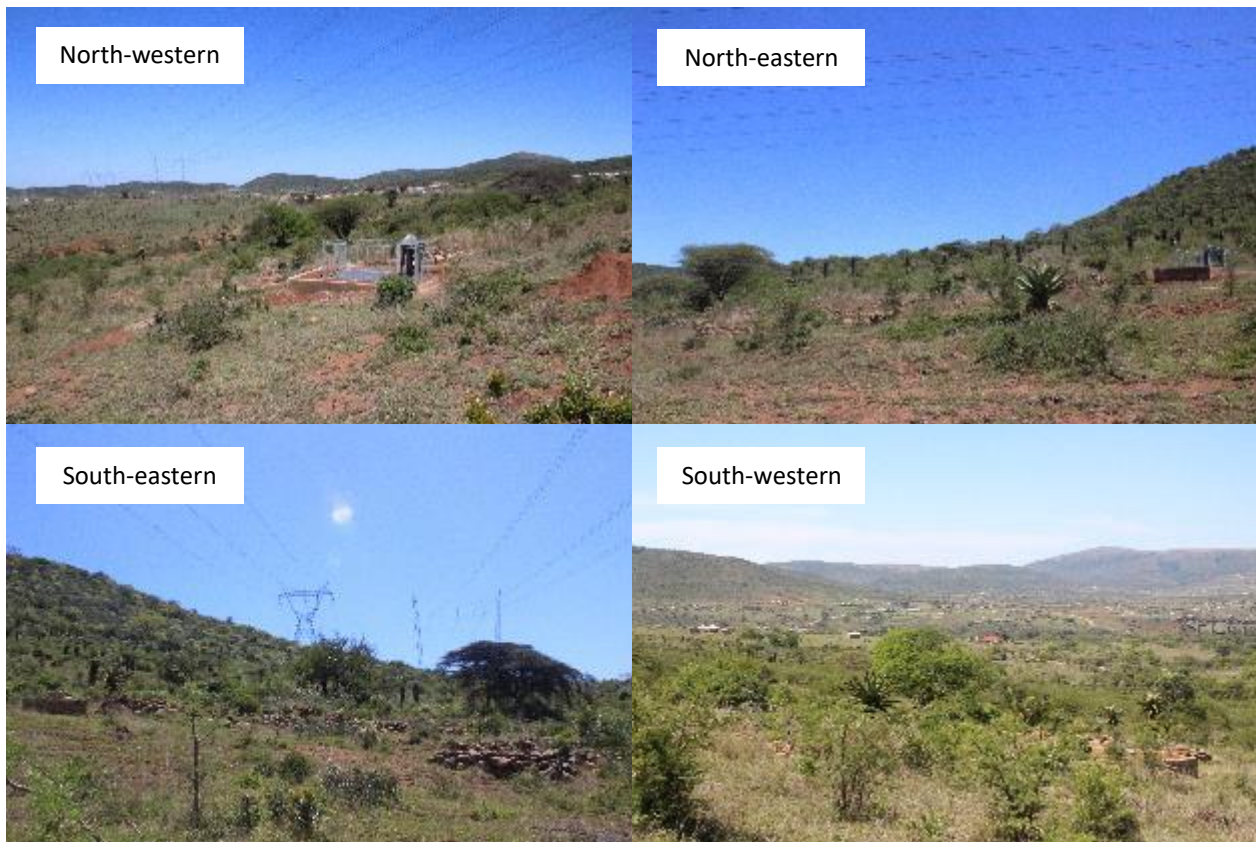


Table 47: Burial Site Complex-11

Site Name:	Burial Site Complex-11		
Type:	Burial Ground and Graves		
Density:	High		
Location/GPS Coordinates:	Community Cemetery-02 <ul style="list-style-type: none"><li>28° 19' 33.11" S</li><li>31° 33' 14.06" E</li></ul>		
Approximate Age:	Contemporary		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>		
Description:			
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line
	23	2,62 km	150,2 m
A small cemetery (Community Cemetery-02) was observed to the north of Household 19 and 20 (Figure. 39). The cemetery is located east of Transmission Tower 23 and located on the slope of a small hill. The cemetery contains approximately 100 graves. Some of the graves contains headstones and are fenced, while others consist of packed stones. Some of the graves are also covered in grass, trees and overgrown vegetation. Although the cemetery is not in the direct path of the Transmission lines it falls within the 500 m zone of influence. Because the graves are of cultural significance, they are of a high heritage significance according to the NHRA 25 of 1999.			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>			

Table 48: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-11)

Disturbance/destruction of heritage resources: Burial Site Complex-11						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	3	2
	Extent of Impact	4	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	2
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 47					
	Environmental Risk (Post-mitigation)					-4,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					1
	Low: Issue not raised in public responses					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					2
	The impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.					
	Prioritisation Factor					1,33
	Final Significance					-5,33
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					



*Figure 39: Four corners of Community Cemetery-02*

Table 49: Burial Site Complex-12

Site Name:	Burial Site Complex-12		
Type:	Grave		
Density:	High		
Location/GPS Coordinates:	Grave A26: <ul style="list-style-type: none"><li>28° 17' 21.60" S</li><li>31° 28' 2.89" E</li></ul>		
Approximate Age:	Contemporary		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>		
Description:			
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line
	19	468,8 m	3,8 m
One grave was identified on the property owned by Household 33. This grave was numbered A27 (Figure. 40). The grave does not contain a headstone and is not covered with any graves. A small black stone is used as a marker for the grave. The grave is located north-west of Transmission Tower 19 and will most likely be impacted by the construction of the Powerlines. The family could only remember some of the information about the individual buried in the grave. The individual buried at Household 33 is:			
	Name	Age	Sex: Date of Birth Date of Death Relation
	Grave A26 Nkosinathi Buthelezi	12 years	Male
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>			

Table 50: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-12)

Disturbance/destruction of heritage resources: Burial Site Complex-12						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	2
	Extent of Impact	3	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 49					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,67
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 40: Grave A26 located at Household 33.*



Table 51: Burial Site Complex-13

Site Name:	Burial Site Complex-13		
Type:	Grave		
Density:	High		
Location/GPS Coordinates:	Grave A27: <ul style="list-style-type: none"><li>28° 17' 21.45" S</li><li>31° 28' 1.17" E</li></ul>		
Approximate Age:	Contemporary		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>		
Description:			
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line
	19	490 m	34,8 m
One grave was identified on the property owned by Household 34. This grave was numbered A27 (Figure. 41). The grave does not contain a headstone and is not covered with any graves. A small cement brick is used as a marker for the grave. The grave is located north-west of Transmission Tower 19 and will most likely be impacted by the construction of the Powerlines. The grave belongs to an unknown family member.			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>			

Table 52: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-13)

Disturbance/destruction of heritage resources: Burial Site Complex-13						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	2
	Extent of Impact	3	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 51					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,67
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					



*Figure 41: Grave A27 found at Household 34.*

Table 53: Burial Site Complex-14

Site Name:	Burial Site Complex-14					
Type:	Graves					
Density:	High					
Location/GPS Coordinates:	<div>Graves A28 – A29:<ul style="list-style-type: none"><li>28° 16' 50.49" S</li><li>31° 27' 41.75" E</li></ul></div> <div>Grave A30:<ul style="list-style-type: none"><li>28° 16' 51.75" S</li><li>31° 27' 41.13" E</li></ul></div>					
Approximate Age:	Contemporary					
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>					
Description:						
Graves A28 – A29:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	19	1,58 km	46,5 m			
Grave A30:						
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line			
	19	1,56 km	17,9 m			
Three locations containing graves were identified at Household 38, with the locations of Graves A28 and A29 being identified as areas possibly containing graves (Figure. 42). These graves appear to be buried in circular structures, which could also have been the foundations of rondavels that could have previously been located on the property. The family could only provide information for Grave A30 (Figure. 43). None of the graves were marked with packed stones and did not contained any headstones. The individuals buried at Household 38 are:						
	Name	Age	Sex:	Date of Birth	Date of Death	Relation
Grave A28	Unknown					
Grave A29	Unknown					
Grave A30	Mfana Mncube		Male	1975		Son

**Recommended Mitigation Measures:**

- The graves should be fenced and demarcated as an area of heritage significance.
- It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.
- Subject to Amafa approval

Table 54: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-14)

Disturbance/destruction of heritage resources: Burial Site Complex-14						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	4	2
	Extent of Impact	3	2	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	3
	Environmental Risk (Pre-mitigation)					-15,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 53					
	Environmental Risk (Post-mitigation)					-6,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,67
	Final Significance					-10,00
	Medium Negative (i.e. where the impact could influence the decision to develop in the area)					





*Figure 42: Graves A28 and A29 (indicated by the yellow arrows) located on the property of Household 38.*



*Figure 43: Graves A30 (indicated by the yellow arrows) located on the property of Household 38.*

Table 55: Burial Site Complex-15

Site Name:	Burial Site Complex-15		
Type:	Burial Ground and Graves		
Density:	High		
Location/GPS Coordinates:	Community Cemetery-03: <ul style="list-style-type: none"><li>28° 16' 41.57" S</li><li>31° 27' 32.49" E</li></ul>		
Approximate Age:	Contemporary		
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>		
Description:			
	Tower Nr:	Distance from the pylon	Distance from the servitude centre line
	18	1,76 km	88,5 m
A communal cemetery (Community Cemetery-03) was identified. It is located between Transmission Towers 18 ad 19, and close to Households 43 and 44 (Figure. 44-45). Approximately 132 graves are located in the cemetery. Most of the graves contains packed stones, with some of the graves containing headstones. Although Community Cemetery-03 is located 88,5 m west of the Transmission Line, it falls within the 500 m zone of influence.			
Recommended Mitigation Measures:			
<ul style="list-style-type: none"><li>The graves should be fenced and demarcated as an area of heritage significance.</li><li>It should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li><li>Subject to Amafa approval</li></ul>			

Table 56: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-15)

Disturbance/destruction of heritage resources: Burial Site Complex-15						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	2
	Extent of Impact	3	1	Reversibility of Impact	4	3
	Duration of Impact	4	2	Probability	4	2
	Environmental Risk (Pre-mitigation)					-16,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 55					
	Environmental Risk (Post-mitigation)					-4,00
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,67
	Final Significance					-6,67
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					





*Figure 44: General view of Community Cemetery-03 (Photo taken facing west).*



*Figure 45: Some of the graves found at Community Cemetery-03*

Table 57: Burial Site Complex-16

Site Name:	Burial Site Complex-16						
Type:	Burial Ground and Graves – Ancestral Site						
Density:	High						
Location/GPS Coordinates:	Ancestral Site-01 <ul style="list-style-type: none"><li>28° 16' 43.89" S</li><li>31° 27' 37.71" E</li></ul> Ancestral Site-02 <ul style="list-style-type: none"><li>28° 16' 44.02" S</li><li>31° 27' 37.56" E</li></ul>						
Approximate Age:	Contemporary						
Applicable Sections of the Relevant Acts:	<ul style="list-style-type: none"><li>Section 36 of the NHRA, No. 25 of 1999</li></ul>						
Description:							
Ancestral Site-01 <table><tr><th>Tower Nr:</th><th>Distance from the pylon</th><th>Distance from the servitude centre line</th></tr><tr><td>18</td><td>1,86 km</td><td>7, 18 m</td></tr></table>		Tower Nr:	Distance from the pylon	Distance from the servitude centre line	18	1,86 km	7, 18 m
Tower Nr:	Distance from the pylon	Distance from the servitude centre line					
18	1,86 km	7, 18 m					
Ancestral Site-02 <table><tr><th>Tower Nr:</th><th>Distance from the pylon</th><th>Distance from the servitude centre line</th></tr><tr><td>18</td><td>1,88 km</td><td>10,2 m</td></tr></table>		Tower Nr:	Distance from the pylon	Distance from the servitude centre line	18	1,88 km	10,2 m
Tower Nr:	Distance from the pylon	Distance from the servitude centre line					
18	1,88 km	10,2 m					
Two small circular stone circles were found at Household 41 (Figure. 46). The circles were located close to the ruins of the structures that stood on the property (Figure. 47-48). According to the property owner, who is also a Sangoma, the circles were used as sites where they could communicate or pray to the Ancestors. As a site connected to cultural beliefs of the family is has cultural significance.							
Recommended Mitigation Measures:							
<ul style="list-style-type: none"><li>The family should be allowed to perform rituals related to moving the ancestor’s spirits to the location of their new home.</li><li>After the rituals have been performed, the project activities can continue.</li><li>Subject to Amafa approval</li></ul>							

Table 58: Impact and risk assessment rating for project Planning, Construction and Operational phases in relation to the identified site (Burial Site Complex-16)

Disturbance/destruction of heritage resources: Burial Site Complex-15						
Heritage Impact Assessment	Impact Name	Disturbance/destruction of heritage resources				
	Alternative	Proposal				
	Phase	Planning, Construction and Operational				
	Environmental Risk					
	Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
	Nature of Impact	-1	-1	Magnitude of Impact	5	2
	Extent of Impact	3	1	Reversibility of Impact	4	2
	Duration of Impact	4	2	Probability	4	2
	Environmental Risk (Pre-mitigation)					-16,00
	Mitigation Measures					
	See Recommended Mitigation Measures in Table 57					
	Environmental Risk (Post-mitigation)					-3,50
	Degree of confidence in impact prediction:					High
	Impact Prioritisation					
	Public Response					2
	Issue has received a meaningful and justifiable public response					
	Cumulative Impacts					2
	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
	Degree of potential irreplaceable loss of resources					3
	The impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
	Prioritisation Factor					1,67
	Final Significance					-5,83
	Low Negative (i.e. where this impact would not have a direct influence on the decision to develop in the area)					





*Figure 46: General view of ruins of structures found at Household 41. (Yellow arrows indicating location of two ancestral sites).*



*Figure 47: Ancestral Site-01 located at Household 41*

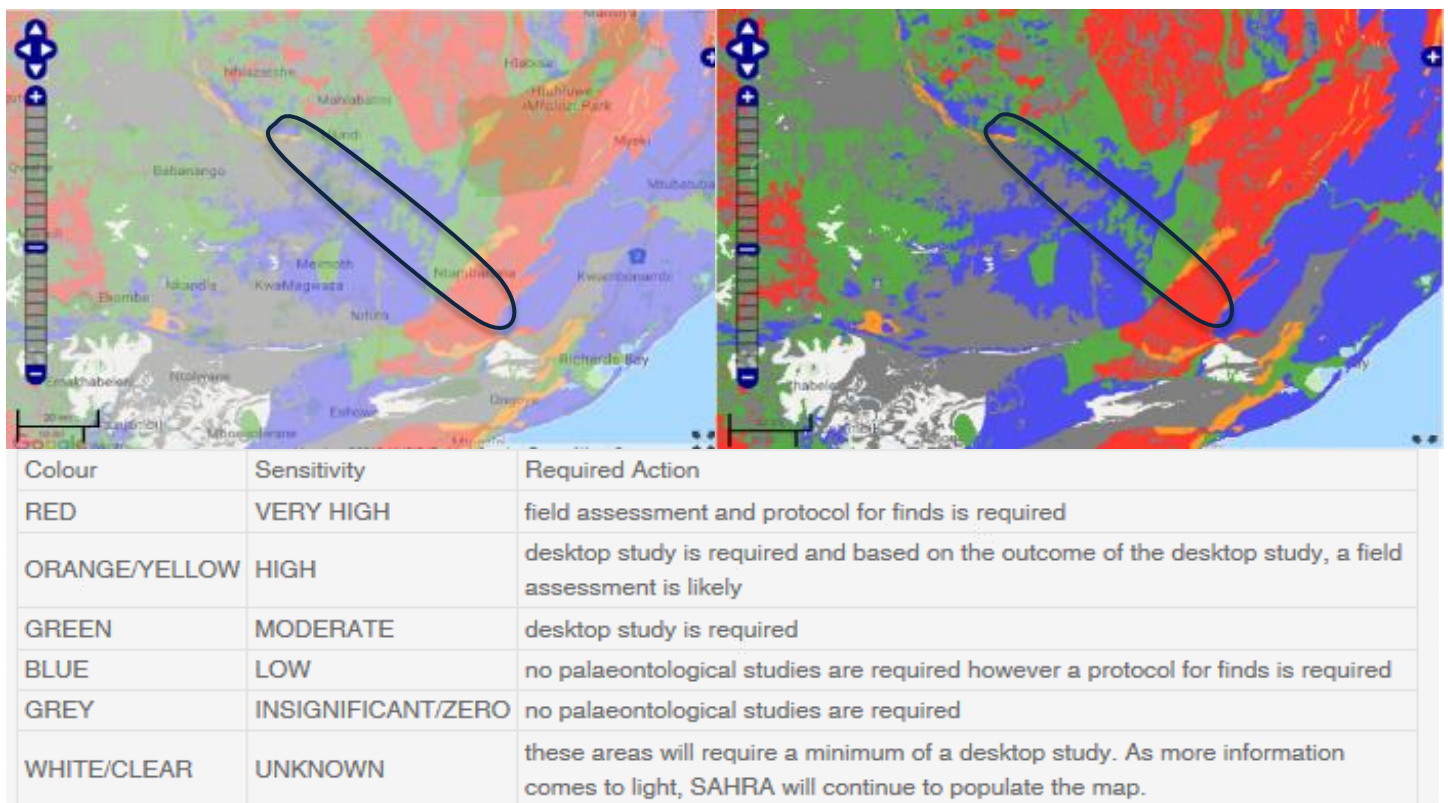


*Figure 48: Ancestral Site-02 located at Household 41*

#### 4.4. Paleontological Sensitivity

The SAHRIS Palaeo-Sensitivity Layer (*Figure. 49*) shows that:

- 20% of the project area, located to the west of Empangeni, falls within a very high sensitivity area (red);
- 40% of the project area (surrounding Ntabamhlophe and Debe) falls within a low sensitivity area (blue);
- 30% of the project area (located close to Ntabamhlophe, Ulundi, Emkhandlwini, Bambela and Ntambanana) falls within a moderate sensitivity area (green);
- 15% of the project area (near Ntabamhlophe) falls within an insignificant sensitivity area (grey);
- 5% of the project area (near Mningi and Ntabamhlophe) falls within a high sensitivity area (orange).
- As such according to the SAHRIS Palaeo-Sensitivity map a field assessment and protocol for finds is required for the project area.



*Figure 49: Palaeo-Sensitivity layer of project area (Blue circle) for the proposed Mfolozi-Mbewu 765kV Transmission Line, Zululand and KCDM, KZN.*

#### 4.5. Site Ratings

Table 59: Site significance classification and ratings for the buildings located in the project area

FEATURE	FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Site complex-01 (Iron Age Pottery)	Generally Protected B (GP. B)	-	Medium Significance	Recording before destruction
Site complex-02 (Stone tool)	Generally Protected B (GP. B)	-	Medium Significance	Recording before destruction
Site Complex-03 (Lower Grinding Stone-01)	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Site Complex-04 (Transnet building-01)	Generally Protected C (GP. A)	-	Low Significance	Destruction
Site Complex-05 (Transnet building-02)	Generally Protected C (GP. A)	-	Low Significance	Destruction
Site Complex-06 Open-Air Church-01	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Site Complex-07 Traditional House-01	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Site Complex-87 Izigodlo-01	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Burial Site Complex-01 (Graves A1-A3)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-02 (Grave A4-A7)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-03 (Grave A8-A11)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-04 (Grave A12-A15)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be

FEATURE	FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
05 (Grave A16-A20)				retained)
Burial Site Complex-06 (Graves A21-A22)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-07 (Grave A23)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-08 (Grave A24)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-09 (Grave A25)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-10 (Community Cemetery-01)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-11 (Community Cemetery-02)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-12 (Grave A26)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-13 (Grave A27)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-14 (Graves A28 – A30)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-15 (Community Cemetery-03)	Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Burial Site Complex-16 (Ancestral Site-01 and 02)	Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction

## 5. CONCLUSION AND RECOMMENDATION

### Conclusions:

Based on the results of literature review and the survey results, the following conclusions are made:

- That the KwaZulu-Natal and the region surrounding Ulundi and Empangeni is rich in history and archaeology.
- During the survey the following heritage resources were found (*Table 50*):

*Table 60: Summary of the identified heritage sites and their site reference numbers*

TYPE HERITAGE RESOURCES	SITE REFERENCE NUMBER
Three archaeological sites,	<ul style="list-style-type: none"> <li>• Site Complex-01 (Iron Age Pottery-01)</li> <li>• Site Complex-02 (Stone tool-01)</li> <li>• Site Complex-03 (Lower Grinding Stone-01)</li> </ul>
An Open Air Shembe Church	<ul style="list-style-type: none"> <li>• Site Complex-06 (Open-Air Church-01)</li> </ul>
A traditional house	<ul style="list-style-type: none"> <li>• Site Complex-07 (Traditional House-01)</li> </ul>
<i>Isigodlo</i> <sup>2</sup>	<ul style="list-style-type: none"> <li>• Site Complex-08 (Isigodlo-01)</li> </ul>
30 graves sites	<ul style="list-style-type: none"> <li>• Burial Site Complex-01 (Graves A1-A4)</li> <li>• Burial Site Complex-02 (Graves (A4-A7)</li> <li>• Burial Site Complex-03 (Graves A8-11)</li> <li>• Burial Site Complex-04 (Graves A12-A15)</li> <li>• Burial Site Complex-05 (Graves A16-A20)</li> <li>• Burial Site Complex-06 (Graves A21-A22)</li> <li>• Burial Site Complex-07 (Grave A23)</li> <li>• Burial Site Complex-08 (Grave A24)</li> <li>• Burial Site Complex-09 (Grave A25)</li> </ul>

<sup>2</sup> *Isigodlo: Traditionally Isigodlo was name used to refer to royal kraal. More recently the name Isigodlo is used to also refer to Isangoma or Inyanga place of work carrying out their traditional practices. The word is used interchangeably with Indumba*



	<ul style="list-style-type: none"> <li>Burial Site Complex-12 (Grave A26)</li> <li>Burial Site Complex-13 (Grave A27)</li> <li>Burial Site Complex-14 (Graves A28-A30)</li> </ul>
Three communal cemeteries	<ul style="list-style-type: none"> <li>Burial Site Complex-10 (Community Cemetery-01)</li> <li>Burial Site Complex-11 (Community Cemetery-02)</li> <li>Burial Site Complex-12 (Community Cemetery-03)</li> </ul>
Two ancestral prayer sites	<ul style="list-style-type: none"> <li>Burial Site Complex-16 (Ancestral Site-01 and 02)</li> </ul>

- Based on the survey results/field grading, the project will have negative impact on the Open Air Shembe Church (Site Complex-06); tower 26 is situated right on the church site.
- A total of 30 graves were identified within or next to active households, ruins or abandoned houses. A total of 11 active households had graves.
- In terms of discussions that focused on deriving solution regarding the issue of graves, representatives from the affected households indicated that they prefer that the graves be avoided and stay *in situ*. They recommended that the graves should be fenced off and a grave management plan be developed. Many of the household representatives also indicated that their family graves were located in one of the community cemeteries which is located within the project area.
- One *Isigodlo* and traditional house being used for traditional rituals were identified. Traditional houses have cultural significant as they are places where families conduct and carry out their rituals and traditional practices. They are places where the families communicate with their ancestors and are often rondavels in many cases with adorned with horns of either goat or cattle above the entrance. Traditional houses are therefore of heritage and cultural significance and families should be given the opportunity to perform their appropriate rituals related to their relocation. No other areas of cultural and spiritual significance were identified within the affected households.
- Although only three archaeological resources were found within the receiving environment, it should be noted that some archaeological resources are subterranean in nature. If exposed by construction activities and brought to the earth surface, they should be treated as Chance Finds.

- In terms of SAHRA Paleontological Sensitivity Layer:
  - 20% of the project area, located to the west of Empangeni, falls within a very high sensitivity area;
  - 40% of the project area (surrounding Ntabamhlophe and Debe) falls within a low sensitivity area;
  - 30% of the project area (located close to Ntabamhlophe, Ulundi, Emkhandlwini, Bambela and Ntambanana) falls within a moderate sensitivity area;
  - 15% of the project area (near Ntabamhlophe) falls within an insignificant sensitivity area;
  - 5% of the project area (near Mningi and Ntabamhlophe) falls within a high sensitivity area.
- Based on this distribution pattern of Palaeo-Sensitive areas it is concluded the area west of Empangeni and the area near Mningi and Ntabamhlophe are of high palaeontological sensitivity and priority areas for onsite palaeontological survey during the project construction phase.

#### Recommendations:

Several recommended mitigation measures for the identified heritage resources are made and listed in Table 51 below:

*Table 61: Table indicating the sites identified and recommended mitigation measures*

FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Site complex-01 (Iron Age Pottery-01)	3	29	<ul style="list-style-type: none"> <li>• It is recommended that the area be monitored by a qualified archaeologist during the project construction phase of the proposed Mfolozi-Mbewu 765kV transmission powerline. There is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.</li> </ul>

FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Site complex-02 (Stone tool-01)	3	29	<ul style="list-style-type: none"> <li>It is recommended that the area be monitored by a qualified archaeologist during the project construction phase of the proposed Mfolozi-Mbewu 765kV transmission powerline, as there is a possibility that the density could change once the construction starts as some archaeological material can be buried underground and as such, may not have been identified during the initial survey and site visit.</li> </ul>
Site Complex-03 (Lower Grinding Stone-01)	31	19	<ul style="list-style-type: none"> <li>It is recommended that the Grinding Stone be included in heritage permits application and be taken to the KwaZulu-Natal Museum in Pietermaritzburg where it can be used as part of the teaching collection.</li> <li><b>Subject to approval from Amafa</b></li> </ul>
Site Complex-04 (Transnet building-01)	25	21	<ul style="list-style-type: none"> <li>The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it and can be destroyed.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Site Complex-05 (Transnet building-02)	47	1	<ul style="list-style-type: none"> <li>The old Transnet building has no heritage significance. As such it can be reused by Eskom as a site office or it and can be destroyed.</li> <li><b>Subject to Amafa approval</b></li> </ul>
Site Complex-06 (Open-Air Church-01)	6	26	<ul style="list-style-type: none"> <li>The Church needs to be relocated to an appropriate area, where members of the church can freely practice their beliefs.</li> <li>As the church will have to relocate, which will also have an impact of the religious practices of the surrounding community</li> <li>Before this process can take place, a heritage social consultation and facilitation process with leaders of the</li> </ul>

FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
			<p>Shembe church should take place.</p> <ul style="list-style-type: none"> <li>The Shembe Church will need to be compensated appropriately for the relocation of their church by the developer. From past experience it is recommended that, the compensation should include the costs of new land, cost for notifying the chiefs, costs of buying and slaughtering animals, food, and the blessing of the new church site. However, this will be verified during the heritage social consultation and facilitation meetings with the church leaders.</li> </ul>
Site Complex-07 (Traditional House-01)	14	23	<ul style="list-style-type: none"> <li>Although the building is of cultural significance, it can be destroyed. However, families should be appropriately compensated and allowed to perform any rituals related to the small rondavel before vacating the property.</li> </ul>
Site Complex-08 (Isigodlo-01)	41	18	<ul style="list-style-type: none"> <li>Although the building is of cultural significance, it can be destroyed as it is already in ruins and the family has already settled somewhere else. However, families should be appropriately compensated and allowed to perform any rituals related to the <i>isigodlo</i> before the construction activities start.</li> </ul>
Burial Site Complex-01 (Graves A1-A3)	1	32	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>They should be treated as a No-Go-Area, with machinery completely avoiding the grave locations during the construction phase.</li> </ul>
Burial Site Complex-02 (Grave A4-A7)	2	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>They should be treated as a No-Go-Area, with machinery</li> </ul>

FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
			<p>completely avoiding the grave locations.</p> <ul style="list-style-type: none"> <li>• Move Tower 29 200m south-east along the transmission line.</li> <li>• It is recommended that, Tower 29 be moved 200 m south-east along the transmission line. If this recommendation is not feasible from an engineering technical point of view, a grave relocation would need to be applied for with Amafa to relocate the graves. The families should first be engaged and the reasons for not moving the tower position be justified to them in order to give consent.</li> <li>• <b>Subject to Amafa approval</b></li> </ul>
Burial Site Complex-03 (Grave A8-A11)	3	29	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• They should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-04 (Grave A12-A15)	4	29	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>• Move Tower 29 200 m south-east along the transmission line</li> </ul>
Burial Site Complex-05 (Grave A16-A20)	8	25	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-06 (Graves A21-	8	24	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The graves should be treated as a No-Go-Area, with machinery</li> </ul>

FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
A22)			<p>completely avoiding the grave locations.</p> <ul style="list-style-type: none"> <li>• Move Tower 24 100 m north-west along the transmission line.</li> <li>• If it is not possible to move the tower position form a technical position, it is recommended that a grave relocation and reburial permit be applied for with Amafa. The families should first be consulted to discuss the reasons why the tower position cannot be moved. The graves can only be relocated with consent from the families.</li> <li>• <b>Subject to Amafa approval</b></li> </ul>
Burial Site Complex-07 (Grave A23)	10	24	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> <li>• Move Tower 24 100 m north-west along the transmission line.</li> </ul>
Burial Site Complex-08 (Grave A24)	12	24	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-09 (Grave A25)	13	24	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-10 (Community Cemetery-01)	11	23	<ul style="list-style-type: none"> <li>• The graves should be fenced and demarcated as an area of heritage significance.</li> <li>• The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>



FEATURE	HOUSEHOLD	CLOSEST TOWER	RECOMMENDED MITIGATION MEASURES
Burial Site Complex-11 (Community Cemetery-02)	19	23	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-12 (Grave A26)	33	19	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-13 (Grave A27)	34	29	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The grave should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-14 (Graves A28 – A30)	38	19	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The graves should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-15 (Community Cemetery-03)	43 and 44	18	<ul style="list-style-type: none"> <li>The graves should be fenced and demarcated as an area of heritage significance.</li> <li>The cemetery should be treated as a No-Go-Area, with machinery completely avoiding the grave locations.</li> </ul>
Burial Site Complex-16 (Ancestral Site- 01 and 02)	41	18	<ul style="list-style-type: none"> <li>The family should be allowed to perform rituals related to moving the ancestor's spirits to the location of their new home.</li> <li>After the rituals have been performed, the project activities can continue.</li> </ul>

- It should be noted that some archaeological material, including artefacts and graves can be buried underground and as such, may not have been visible or identified during the initial survey and site visits. In the case where the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should such resources be unearthed it is recommended that, the development and construction activities be stopped immediately, Amafa should be notified (Tell: 0333 946543 or E-mail: lindim@amafapmb.co.za) and an archaeologist be contacted to conduct a site visit and make recommendations on the mitigation of the finds.
- In terms of SAHRA Paleontological Sensitivity Layer, 20% of the project area, falls within a very high sensitivity area, 40% falls within a low sensitivity area, 30% falls within a moderate sensitivity area, 15% falls within an insignificant sensitivity area and 5% of the project area falls within a high sensitivity area, as such, for the highly sensitive areas it is recommended that a field assessment by a qualified palaeontologist should be conducted during the excavation of tower foundations. A palaeontological finds protocol has been developed and included in this ICRMS (Appendix C), but the palaeontologist would have to recommend mitigation measures that are specific based on the results of field assessment.
- It is recommended that there is no need for further investigation of the two Transnet buildings identified in the project area from a conservation architectural perspective. No Phase II HIA is required. The buildings can be demolition as planned only after the receipt of approval of this HIA from Amafa.
- This ICRMS Report is required to feed into the RAP. The RAP will then be provided to the World Fund Bank, who may then decide on a social monitoring process to proceed during the relocation of the households.
- This project may proceed with the recommended development only after the recommended mitigation measures have been put in place and only after approval of this ICRMS has been received from Amafa and agreed upon by the project proponent and its funders i.e. the World Fund Bank.

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## 7. APPENDIX A: SPECIALIST CV

**Name** : Cherene de Bruyn  
**Profession** : Archaeology  
**Date of Birth** : 1991/03/01  
**Parent Firm** : NGT Holdings (Pty) Ltd  
**Position in Firm** : Archaeologist and Heritage Consultant  
**Years with firm** : 4 Months  
**Nationality** : South Africa  
**BI & Male/Female Status** : White South African Female  
**Languages** :

Language	Speak	Read	Write
English	X	X	X
Afrikaans	X	X	X

**Countries of Work Experience** : South Africa  
**Proposed Position on Team** : Archaeologist and Heritage Consultant

### KEY QUALIFICATIONS

Cherene is a hardworking Archaeologist who has developed a mature and responsible approach to any task she undertakes. She received the British High Commissions Chevening Scholarship to complete my Master's degree in Archaeology at UCL in 2016/2017. She is skilled in excavating and analysing archaeological artefacts such as pottery and skeletal human remains, and have an interest in Egyptian, African and burial archaeology. Cherene is a motivated individual who gained relevant professional experience in the heritage sector through Internships as well as through volunteering on archaeological projects.

●●●●● = Excellent    ●●●● = Proficient    ●●● = Intermediate    ●● = Developing    ● = Novice

Communication	●●●●●
Team Work	●●●●●
Time Management	●●●●●
Adaptability	●●●●●
Creativity	●●●●
Leadership	●●●●
Excavation	●●●●●
Recording	●●●●●
MS Office	●●●●
Google Earth	●●●●
QGIS	●●●
Total Station	●●●



## EDUCATION

NAME OF INSTITUTION	DEGREE OBTAINED	DATES ATTENDED
University College London	MA in Archaeology	2016-2017
University of Pretoria	BSC Honours in Physical Anthropology	2015
University of Pretoria	BA Honours in Archaeology	2013
University of Pretoria	BA in Archaeology	2010-2012

## RELEVANT EXPERIENCE

DATE	ASSIGNMENT	POSITION	LOCATION
<b>2018- Current</b>	<b><i>Employer - NGT Holdings (Pty) Ltd</i></b>	<b><i>Archaeologist and Heritage Consultant</i></b>	<b><i>RSA</i></b>
2018	Letter of Recommendation for Exemption from Conducting a full Heritage Impact Assessment Study for the Matlala Park, Ekurhuleni Metropolitan Municipality, Gauteng Province.	Author	
2018	Heritage Impact Assessment for the Proposed KwaThema to Grundlingh WWTW Bulk Outfall Sewer: Capital Project Implementation near Nigel, Gauteng Province, South Africa.	Author	
2018	Heritage Impact Assessment the prospecting right and environmental authorisation application for Kroonstad South situated in the Free State Province.	Author	
2018	Heritage Impact Assessment the prospecting right and environmental authorisation application for Vredefort West situated in the Free State Province.	Author	
2018	Archaeological impact assessment for a mining permit application for portion 19 of the farm Syferfontein 303 IP within the city of Matlosana Local Municipality in the North West Province, South Africa.	Author	
2018	Background literature study on the archaeology and history of Madimatle Mountain and the Gatkop Caves situated within the Thabazimbi Local Municipal area of Waterberg District, Limpopo Province, south Africa.	Author	

DATE	ASSIGNMENT	POSITION	LOCATION
2018	Heritage Impact Assessment report for the proposed development of a SMME Training Centre and Youth Enterprise Park on Erf 1977 Edendale-CC located in the Msunduzi Local Municipality, Pietermaritzburg, KwaZulu-Natal Province, South Africa.	Author	
2018	Prospecting Right and Environmental Authorisation for the proposed WRE Nkunzana Prospecting Right Project.	Researcher	
<b>2014-2015</b>	<b><i>Forensic Anthropological Research Centre, University of Pretoria</i></b>	<b><i>DST-NRF Archaeological Intern</i></b>	<b><i>RSA</i></b>
2015	Report on rescue excavations and skeletal analyses of two archaeological graves inadvertently uncovered in Boitekong, North-West.	Field Assistant and Researcher	
2015	Report on Follow-up site visit excavation and physical anthropological analyses of archaeological human remains transferred from SAPA Victim Identification Center to Department of Anatomy. Mamelodi East Phase 2 House 566.	Field Assistant and Researcher	
<b>2014</b>	<b><i>Archaeological Assistant</i></b>	<b><i>Archaeon Ltd</i></b>	<b><i>RSA</i></b>
2014	A report on a cultural heritage impact assessment for the proposed development on portion 91 of the farm Waterkloof 305 JQ, close to Rustenburg, Northwest Province.	Field Assistant	
2014	A report on the phase II heritage investigation of a farmstead on portion 470 of the farm Waterkloof 305 JQ near Rustenburg in the Northwest Province.	Field Assistant	
2014	A report on the heritage impact assessment for the proposed new bulk water and sewer pipeline from Cosmo City to Lanseria, Gauteng Province.	Field Assistant	
2014	A report on the updating of a previous cultural heritage impact assessment for the EMPR alignment and consolidation process at Anglo American Platinum: Rustenburg platinum mines – Rustenburg section, Northwest Province.	Field Assistant and Researcher	

DATE	ASSIGNMENT	POSITION	LOCATION
2014	A report on a cultural heritage impact assessment for the proposed Thusanang housing development, close to Rustenburg, Northwest Province.	Field Assistant and Researcher	
2014	A report on the cultural heritage impact assessment for the Tshepong extension 1, 2 and 3 housing development, close to Vereeniging, Gauteng Province.	Field Assistant	
2014	A report on the cultural heritage impact assessment for the proposed Isibonelo Colliery Block Z opencast mine, close to Kriel, Mpumalanga Province.	Field Assistant	
2014	A report on a cultural heritage impact assessment for a proposed transport facility on portion 33 of the farm Vaalbank 289 JS, close to Middelburg, Mpumalanga Province.	Field Assistant	
2014	Report on a cultural heritage Impact assessment done for the Anglo-American Platinum and African Rainbow Minerals Modikwa Platinum Mine South Shaft 2 project, close to Burgersfort, Limpopo Province.	Field Assistant	

#### SUMMARY OF OTHER EXPERIENCE

DATE	EMPLOYER	POSITION	LOCATION
2018	Sci-bono Discovery Centre	Lascaux Exhibition Tour Guide	Newton, SA
2018, 2016	Umbeli Belli Middle Stone Age Excavation	Field and Lab Assistant	Kwazulu-Natal, SA
2015-2016	Bio-Archaeological Analysis and Archaeological Geophysics Unit, University of Pretoria	Archaeological Contractor	Pretoria, SA
2016, 2015	Wenner-Gren Foundation Funded Grassridge Archaeological and Palaeoenvironmental Project	Field and Lab Assistant	Eastern Cape, SA
2015	Department of Anatomy, University of Pretoria	Student Teaching Assistant	Pretoria, SA

## MEMBERSHIPS

DATE	ORGANIZATION	POSITION
2015 - Present	Association of Southern African Professional Archaeologists (ASAPA)	Professional Member
2014 - Present	South African Archaeological Society	Member
2018 - Present	Association of Critical Heritage	Member

## DECLARATION

I confirm that the above information contained in the CV is an accurate description of my experience and qualifications and that, at the time of signature, I am available and willing to serve in the position indicated for me in the Proposal, for the durations and at the locations indicated therein.



Cherene de Bruyn

1 November 2018

## 8. APPENDIX B: COORDINATES OF AFFECTED HOUSEHOLDS

Table 62: Affected Households locations and Coordinates

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
1	S 28° 34' 14.3" E 31° 48' 21.4"	Contemporary	2 Enclosures, Garden, 6 Structures (2 Mud and stone structures), fenced, disturbed by Goats and Chickens as well as Household Activities
2	S 28° 28' 19.6" E 31° 43' 30.3"	Contemporary	Buildings: There were 7 structures on the property, 5 of which are rondavels and 1 seems to be a tin house or shed. The property was disturbed by household activities, livestock, an enclosure and overgrown vegetation. The enclosure houses goats. There was also a small mud oven and an open fire or kitchen area outside on the property.
3	S 28° 28' 15.1" E 31° 43' 26.9"	Contemporary/ Iron Age/Late stone Age	6 structures (2 Rondavels); 1 Outside toilet; fenced; 2 Enclosures; Disturbed; 4 Graves
4	S 28° 28' 13.3" E 31° 43' 24.4"	Contemporary	18 Structures (including 9 Rondavels); 2 outside toilets, 3 enclosures, fenced; Communal Water tank, Disturbed
5	S 28° 27' 38.0" E 31° 42' 46.4"	Contemporary	There were 8 structures on the property, 6 of which are rondavels. The property was disturbed by household activities, livestock, an enclosure and overgrown vegetation. The enclosure houses goats and chickens. The property has 2 water tanks and a toilet outside. There was also a fence surrounding the property.
6	S 28° 27' 34.5" E 31° 42' 42.6"	Contemporary	Buildings: There was 1 structure and an outside toilet. There was also an open area structure, which was fenced off. The area was used as an open out church.

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
7	S 28° 27' 04.4" E 31° 42' 09.6"	Contemporary	5 Structures (including 3 Rondavels); land disturbed, one enclosure, no fence
8	S 28° 26' 40.4" E 31° 41' 43.2"	Contemporary	7 Structures (2 rondavels, 1 in ruins); 2 enclosures, 1 Garden, water tank, 2 outside toilets; goats, chickens; disturbed by livestock and household activities; fenced
9	S 28° 26' 39.5" E 31° 41' 44.1"	Contemporary	1 Structure, another structure being built
10	S 28° 26' 35.9" E 31° 41' 42.0"	Contemporary	2 structures and 2 rondavels, land disturbed, goats and cows; 3 enclosures, fenced.
11	S 28° 23' 07.3" E 31° 37' 46.0"	Contemporary	Outside toilet; Cooking area outside; 7 Structures (3 rondavels, 1 mud house); 2 enclosures; land disturbed by household activities and lives tock (chickens), fenced
12	S 28° 23' 08.3" E 31° 37' 44.2"	Contemporary	8 Structures (2 rondavels, 2 foundation structures, 1 structure for chickens); fenced; toilet, 3 water tanks, chickens and ducks, disturbed by household and livestock; grave
13	S 28° 23' 06.0" E 31° 37' 40.7"	Contemporary	6 Structures (1 in ruins, 2 rondavels) mud structures, fenced, disturbed vegetation, outdoor toiler and 3 enclosures, 1 grave
14	S 28° 20' 04.9" E 31° 34' 24.6"	Contemporary	Buildings: There were 6 structures on the property, 3 of which are rondavels (2 rondavels were big and the other was small). The property was disturbed by household activities, a garden/ farming activity, and 2 animal enclosures. The enclosures house chickens, goats and cattle. There was also 2 water tanks and a toilet outside. The property has no fence around it.
15	S 28° 20' 03.0" E 31° 34' 20.7"	Contemporary	Buildings: There were 7 structures on the property, 3 of which are rondavels (1 rondavel was in ruins and 1 rectangular structure is also in ruins). The property is disturbed by household



HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
			activities, a garden/ farming activity, and 3 animal enclosures. The enclosures house chickens, goats and cattle. There were also dogs on the property. Moreover, there is 1 water tank and 1 toilet outside. There is also a fence surrounding the property.
16	S 28° 20' 07.5" E 31° 34' 19.2"	Contemporary	Building: There was 4 vacant structures on the property, 3 of which were mud structures and are in ruins. The property was surrounded by overgrown vegetation and has no fence.
17	S 28° 19' 58.6" E 31° 34' 07.8"	Contemporary	Buildings: There were 3 structures on the property, 2 of which are rondavels. The property was disturbed by household activities, a garden/ farming activity, and an enclosure. The enclosure houses goats and cattle. There was also a water tank and a toilet outside. The property has no fence around it.
18	S 28° 19' 44.5" E 31° 33' 31.0'	Contemporary	No household, just an open empty area.
19	S 28° 19' 41.3" E 31° 33' 22.3"	Contemporary	Buildings: There were 10 structures on the property, 4 of which are rondavels. The property was disturbed by household activities, a garden/ farming activity, and 4 animal enclosures. The enclosures house chickens, goats and cattle. There were also 3 water tanks and 2 toilets outside. The property has no fence around it.
20	S 28° 19' 34.5" E 31° 33' 14.8"	Contemporary	Graves: Grave site between household 20 and 19. In total there were approximately 100 graves.
21	S 28° 19' 16.9" E 31° 31' 22.0"	Contemporary	Buildings: There was ruins of an abandoned or collapsed house. The property was overgrown by vegetation and there was no fence around the property.
22	S 28° 19' 18.2"	Contemporary	Buildings: There were 5 structures on the property, 2 of which are rondavels. The property was

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
	E 31° 31' 15.4"		disturbed by household activities, a garden/ farming activity, 2 animal enclosures, and a small mud brick pen. The enclosures house chickens, and goats. There was a water tank and a toilet outside. The property was also surrounded by a fence around it.
23	S 28° 19' 19.6" E 31° 31' 14.5"	Contemporary	Buildings: There were 10 structures on the property, 4 of which are rondavels (1 rondavel was in ruins). The property is disturbed by household activities, a garden/ farming activity, and an animal enclosure. The enclosure houses chickens, goats and cattle. There was a water tank and a toilet outside. The property was also surrounded by a fence around it.
24	S 28° 18' 54.4" E 31° 30' 02.7"	Contemporary	Buildings: There was 2 structures on the property, 1 of which are ruins. The property is disturbed by household activities, a garden/ farming activity, an animal enclosure, and overgrown vegetation. The enclosure houses chickens. There was also a dog on the property. Moreover, there is an outside toilet and a fence surrounding the property.
25	S 28° 18' 10.5" E 31° 29' 02.3"	Contemporary	Transnet House -Building: There was 1 vacant structure on the property, which was surrounded by overgrown vegetation.
26	S 28° 17' 45.5" E 31° 28' 22.2"	Contemporary	Buildings: There were 4 structures on the property, 2 of which are rondavels. The property was disturbed by household activities and farming activities. There were chickens and goats on the property. There was also a water tank and toilet outside; as well as overgrown vegetation on the property.
27	S 28° 17' 43.4" E 31° 28' 20.5"	Contemporary	Buildings: There were 5 structures on the property, 2 of which are rondavels. The property was disturbed by household activities, a garden/ farming activity, and a small enclosure. The enclosure might be used to house chickens on the property. There was a water tank and toilet

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
			outside on the property. Furthermore, there was a fence surrounding the property.
28	S 28° 17' 42.6" E 31° 28' 19.2"	Contemporary	Buildings: There were 3 mud structures and an outside kitchen area on the property. The property was disturbed by household activities, and a garden/ farming activities. There were chickens and 2 dogs as well. The property also has a toilet outside.
29	S 28° 17' 41.7" E 31° 28' 16.4"	Contemporary	Buildings: There were 2 vacant structures on the property, 1 of which was a rondavel. The property was disturbed by overgrown vegetation. Moreover, there was a toilet outside and a broken-down fence surrounding the property. Even though there were no people living on the property, there were cows, chickens and a goat present.
30	S 28° 17' 39.4" E 31° 28' 14.5"	Contemporary	Buildings: There were 3 vacant structures on the property, all of which were in ruins. The property was disturbed by overgrown vegetation.
31	S 28° 17' 37.5" E 31° 28' 09.6"	Contemporary	Buildings: There were 3 structures on the property. The property was disturbed by household activities. There are 2 toilets outside and overgrown vegetation on the property.
32	S 28° 17' 35.1" E 31° 28' 08.9"	Contemporary	Buildings: There were 4 structures on the property, 1 of which was a rondavel and it was in ruins. The property was disturbed by household activities, gardens/ farming activities and overgrown vegetation. There were 3 enclosures on the property, 2 of which were gardens (1 was big, whilst another was small). There were chickens on the property. There was also a toilet and water tank outside, as well as a fence surrounding the property.
33	S 28° 17' 20.9" E 31° 28' 03.4"	Contemporary	Buildings: There were 3 structures on the property, 1 of which seemed to be in the process of still being built. The property was disturbed by household activities and overgrown vegetation. Moreover, there was a toilet outside and a broken-down fence surrounding the property. There

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
			were also chickens and goats on the property.
34	S 28° 17' 20.7" E 31° 28' 01.3"	Contemporary	Buildings: There were 5 brick structures, 1 of which was a wooden structure. The property was disturbed by household activities, a small enclosure, and a garden or agricultural field. The small enclosure houses chickens and goats. Moreover, the property was surrounded by a fence and had a water tank outside.
35	S 28° 17' 19.1" E 31° 28' 01.2"	Contemporary	Buildings: There were 5 structures, 1 of which was in ruins. The property was disturbed by household activities, an animal enclosure, and a garden or agricultural field. The enclosure houses chickens and livestock. Moreover, the property was surrounded by a fence, and there was also a water tank and toilet outside.
36	S 28° 17' 16.3" E 31° 27' 57.2"	Contemporary	Buildings: There were 5 structures on the property. The property was disturbed by household activities, two enclosures for animals, and a garden or agricultural field. The enclosures house chickens and goats. The property was also surrounded by a fence and there was an outside toilet as well.
37	S 28° 17' 15.0" E 31° 27' 57.9"	Contemporary	Buildings: There were 3 structures on the property. The property was disturbed by household activities, an animal enclosure, and a garden or agricultural field. The enclosure houses chickens and cows. There were also some dogs on the property and the property had an outside toilet.
38	S 28° 16' 51.6" E 31° 27' 40.6"	Contemporary	Buildings: There were 8 structures, 1 of which seems to be broken down or in ruins. The property was disturbed by household activities and animal enclosures. There was 1 big enclosure, which was connected to a small enclosure next to it. The enclosure houses chickens, cows and dogs. Moreover, the property was surrounded by a fence and there was also a toilet

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
			outside.
39	S 28° 16' 48.9" E 31° 27' 40.9"	Contemporary	Buildings: There were 4 structures on the property, 1 of which was still being built. The property was disturbed by household activities, 2 animal enclosures, and a garden or agricultural field. There were 2 small animal pens, probably for chickens and baby goats. The enclosures house cows and goats. The property also had a make- shift fence around it, two water tanks and two outside toilets.
40	S 28° 16' 45.0" E 31° 27' 40.7"	Contemporary	Buildings: There was 1 structure on the property. The property was disturbed by household activities, an animal enclosure, and a garden or agricultural field. The enclosure houses chickens, goats and cows. There were also some dogs on the property. Moreover, there was an outdoor toilet, water tank and tap outside in the property.
41	S 28° 16' 43.8" E 31° 27' 36.9"	Contemporary	Buildings: There were several structures that were in ruins. The property was overgrown by vegetation and disturbed by livestock. There was also a fence around the property.
42	S 28° 47.59" E 31° 27' 37.50"	Contemporary	Buildings: There were 5 structures on the property, 1 of which was in ruins. The property was disturbed by household activities. Moreover, there was a tap and water tank outside.
43	S 28° 16' 41.0" E 31° 27' 35.9"	Contemporary	Buildings: There were 2 structures on the property, both made out of mud. One is a rondavel and the other a house. The property is disturbed by household activities. There is also a water tank outside in the property.
44	S 28° 16' 40.6" E 31° 27' 35.1"	Contemporary	Buildings: There were 2 structures on the property, 1 of which was in ruins. The property was disturbed by overgrown vegetation. There was also a toilet outside and a fence surrounding the property.

HOUSEHOLD NUMBER	COORDINATES	DATING	FINDINGS (DESCRIPTION)
45	S 28° 16' 38.74" E 31° 27' 33.36"	Contemporary	Buildings: There were 3 structures on the property, all of which are mud houses. The property is disturbed by household and farming activities. There are chickens, goats and cows on the property.
46	S 28° 16' 38.1" E 31° 27' 36.7"	Contemporary	Buildings: There were 5 structures on the property. There are 2 different families living on the same property, houses divided amongst them. The property was disturbed by household activities and an agricultural area or field. There was also a toilet outside on the property.
47	S 28° 13' 4.51" E 31° 11' 36.60"	Contemporary	Transnet house



## 9. APPENDIX C: PROTOCOL FOR PALAEOLOGICAL FINDS

**Introduction** This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under section 38 of the NHRA no 25 of 1999.

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the NHRA and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded. Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

**Training** Workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO.

It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place. **Actions to be taken** One person in the staff must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material. Once a workman notices possible fossil material, he/she should report this to the ECO or site agent.

Procedure to follow if it is likely that the material identified is a fossil:

- I. The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;
- II. The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates;
- III. The ECO or site agent must compile a Preliminary Report and fill in the Fossil Discoveries: SAHRA Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including:
  - The date
  - A description of the discovery
  - A description of the fossil and its context (e.g. position and depth of find)
  - Where and how the find has been stored
  - Photographs to accompany the preliminary report (the more the better):
    - A scale must be used
    - Photos of location from several angles
    - Photos of vertical section should be provided
    - Digital images of hole showing vertical section (side);
    - Digital images of fossil or fossils.
- IV. Upon receipt of this Preliminary Report, SAHRA will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.
- V. Exposed finds must be stabilised where they are unstable, and the site capped, e.g. with a plastic sheet or sand bags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation. vi. If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove the all fossil material and any breakage of fossil material must be avoided at all costs.

No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed.