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ECOSOLVE

PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT STUDY REPORTFOR THE PROPOSED CONSTRUCTION OF 132KV POWERLINE BETWEEN SORATA SWITCHING STATION AND WITSIEHOEK SUBSTATION WITHIN MALUTA-A-PHOFUNG LOCAL MUNICIPALITY OF THABO MOFUTSANYANE DISTRICT IN THE FREE STATE PROVINCE.

December, 2019

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Acknowledgements

The author and the team of Vhubvo would like to acknowledge Ecosolve for their assistance in relation to the conduction of this project, also Google earth and Wikipedia.

DECLARATION

ABILITY TO CONDUCT THE PROJECT

Alvord Nhundu is a professional archaeologist who obtained his MA degree in Archaeology from the University of Pretoria (UP) focussing on the LSA-Iron Age period in 2018. He also holds a Bachelor of Science with honours degree in archaeology from the University of the Witwatersrand (Wits) (2010). Alvord is an accredited member of the Association of southern African Professional Archaeologists (ASAPA#338). Alvord has been practising CRM for more than 5 years, and has completed well over 50 Archaeological Impact Assessments (AIA) for developmental projects in the Limpopo, Mpumalanga, North-west and KwaZulu-Natal provinces of South Africa. The projects include establishment and upgrade of power substations, road construction and establishment and expansion of mines. He has also conducted the relocation of graves. His detailed CV is available upon request.

Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and a Master's degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), Historical Association of South Africa (HESA); Anthropology Southern Africa (ASnA); International Association for Impact Assessment (IAIAsa); International Council on Monuments and Sites (ICOMOS) and the International Council of Archaeozoology (ICAZ). He has more than fifteen years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over 500 hundred Archaeological Impact Assessments (AIA) for developmental projects situated in several provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

We, Alvord Nhundu and Munyadziwa Magoma declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organization. We act as the independent specialist in this application, and will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant. We declare that there are no circumstances that may compromise my objectivity in performing such work, we vow to comply with all relevant Act, Regulations and applicable Legislation. Furthermore, Vhubvo Consultancy Cc, which is a company we represent in this application, is an independent service provider and apart from fair remuneration for services rendered, it has no financial interest or vested interest in the proposed project.

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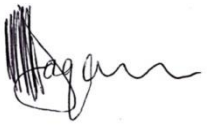

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EXECUTIVE SUMMARY

Introduction and background

Vhubvo Consultancy Cc were appointed by Ecosolve to conduct Phase I Archaeological Impact Assessment study for the proposed construction of a 132Kv powerline deviation (measuring approximately 3km) between Sorata switching station and Witsiehoek substation within Maluta-a-Phofung Local Municipality of Thabo Mofutsanyane Districtin the Free State Province. The aim of the study was to screen thesite for archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development, these will in turn assist the developer in ensuring proper conservation measures in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

For a better understanding of the proposed area, a background study was undertaken and relevant institutions were consulted. The review of archaeological and heritage impact assessment studies conducted around the proposed area were consulted through SAHRIS as well as the reviews of other relevant publication. The University of Pretoria's Library was also visited. These investigations were conducted to determine if there are any known sites around the area. This report includes an impact study on potential archaeological and cultural heritage resources that may be affected by the proposed development. The findings of this report have been informed by desktop data review, field survey and impact assessment reporting. The study was conducted as part of the specialist input for the Environment Management Plan exercise. Analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area predicted that archaeological sites, cultural heritage sites, historic structures, burial grounds or isolated artifacts were unlikely to be present on the affected landscape.

Rationale for the project

Eskom distribution has embarked on the drive to strengthen supply in and around the area of QwaQwa in the Free State Province. Eskom has decided to deviate from the authorised power line alignment due to challenges encountered during negotiations with landowners and a Part 2 Amendment application is required to accommodate these changes.

Brief background study

The Stone Age is the period in human history when stone materials were used toproduce tools. In South Africa the Stone Age can be divided into three periods, Early (More than 2 million years ago - 250 000 yearsAgo), Middle (250 000 years ago – 25 000 years ago) and Late (25 000 years ago - AD 200). It is, however,important to note that dates only provide a broad framework forinterpretation. The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa

it can be divided in three separate phases. Early (AD 400 - AD 1025), Middle Iron Age (AD 900-1300) and Late Iron Age (AD 1025 - AD 1830). The Late Iron Age farmers were followed by colonists in the second half of the 19th century.

Restrictions and Assumptions

As with any study, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, should any archaeological/ or grave site (s) be observed during construction stage, a heritage specialist monitoring the development must immediately be notified. In the meantime, no further disturbance may be made until such time as the heritage specialist has been able to make an assessment of the find in question. It is the responsibility of the contractor to protect the site from publicity (i.e., media) until all assessments are made.

Impact statement

The construction of the proposed powerlines may result in various threats to archaeological and grave sites in the vicinity of the new infrastructure (s), with impacts ranging from moderate to high. Impact of the proposed powerline on archaeological and cultural heritage remains is expected to range from high to medium (see Table 1) on all proposed study areas. Noteworthy that the linear nature of the proposed project area will cause minimal impact to the ground, i.e., tower positions can be moved to avoid direct impacts on identified heritage resources. It is also important to note that all categories of heritage resources, with the possible exception of movable objects, are generally known to occur in the area proposed for development. The primary areas of concern in this study are the impacts on archaeological sites and the cultural landscape traversed by the proposed powerlines.

Survey Findings

The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed construction of a 132Kv powerline deviation from Sorata to Witsiehoek substationsidentified no significant impacts to archaeological or grave resources in the footprint of the proposed pylon construction. However, it should be noted that there are five (5) sites (including isolated tools) that had been noted in a fairly immediate area of the proposed construction, with the closest being approximately 15m to the proposed area.Note must be taken that an informal graveyard had been noted on the adjacent vicinity to the proposed area. It must be indicated that graves are of high significance and are protected by various laws. Legislation with regard to graves included the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older, and the Human Tissues Act (Act 65 of 1983), when graves are less than 60 years.

Although these noted sites are not in thefootprintof the proposed construction, and will thus not be directly affected, it possible that they may be accidentally impacted upon by circumlocutory construction activities, hence the recommendation below must be considered with responsiveness.

Recommendations

Recommendations are given from a heritage point of view and considering the nature of the proposed project and the cultural significance of the area at large. It must be noted that there is a strong possibility that the noted site (s) may be affected indirectly by accidental destruction, due to unawareness or unfamiliarity by constructors. It is on that note that the recommendation in this report should be taken with responsiveness. It is recommended that a Heritage Management Plan (HMP) and a Chance Find procedure be compiled before construction resume. The compilation and adoption of the Heritage Management Plan will ensure the following:

- ✓ Guide Eskom and relevant stakeholders in addressing concerns related to the identified sites that are not directly affected, yet they are in the instantaneous area; and
- ✓ Develop a monitoring programme to facilitate effective implementation of the HMP.

It must be noted that prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur during the construction phase. This should be done by an accredited archaeologist.

If any chance archaeological or previously unknown grave (s), be exhumed or discovered during the course of construction work, activities on the proposed development area should be deactivated, and a heritage specialist monitoring the project be notified immediately. In the mean time, construction activities must be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. In the mean time, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff member and professional archaeologist. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The developer should induct field worker about archaeology, and steps that should be taken in the case of exposing archaeological materials.

Conclusions

A thorough background study of the proposed development was conducted and findings were recorded in line with SAHRA guidelines. As per the recommendations above, the proposed construction can proceed on condition that the recommendation mentioned above will be initiated. Noteworthy that there are no major heritage reasons why the proposed construction could not be allowed to proceed.

Note should be taken that there is no material (s) that can be found in the proposed area that can be considered to be of such significance that can prevent the proposed development from proceeding.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

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

Artefact: Any movable object that has been used, modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

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

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

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

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

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and

acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

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

1. Introduction

This project is one of Eskom's power strengthen projects and it involves the construction of approximately 3km powerline between Sorata switching station and Witsihoek substation within Maluta-a-Phofung Local Municipality, Free State Province. The study aims to outline the archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed construction, and to advise mitigation should any be affected and these will in turn assist the developer to make a decision on the most appropriate option in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

2. Sites location and description

The proposed project is located in the Qwaqwa area which is within the Maluti-a-Phofung Local Municipality of the Free State.It encompasses the area between Phuthadijhabi, Kestel and Harrismith. The topography of the proposed area is fairly steep and characterized by mostly farming activities.

Province	Free State
Local	Maluta-a-Phofung
District	Thabo Mofutsanyane
Proposed development	Construction of a powerline

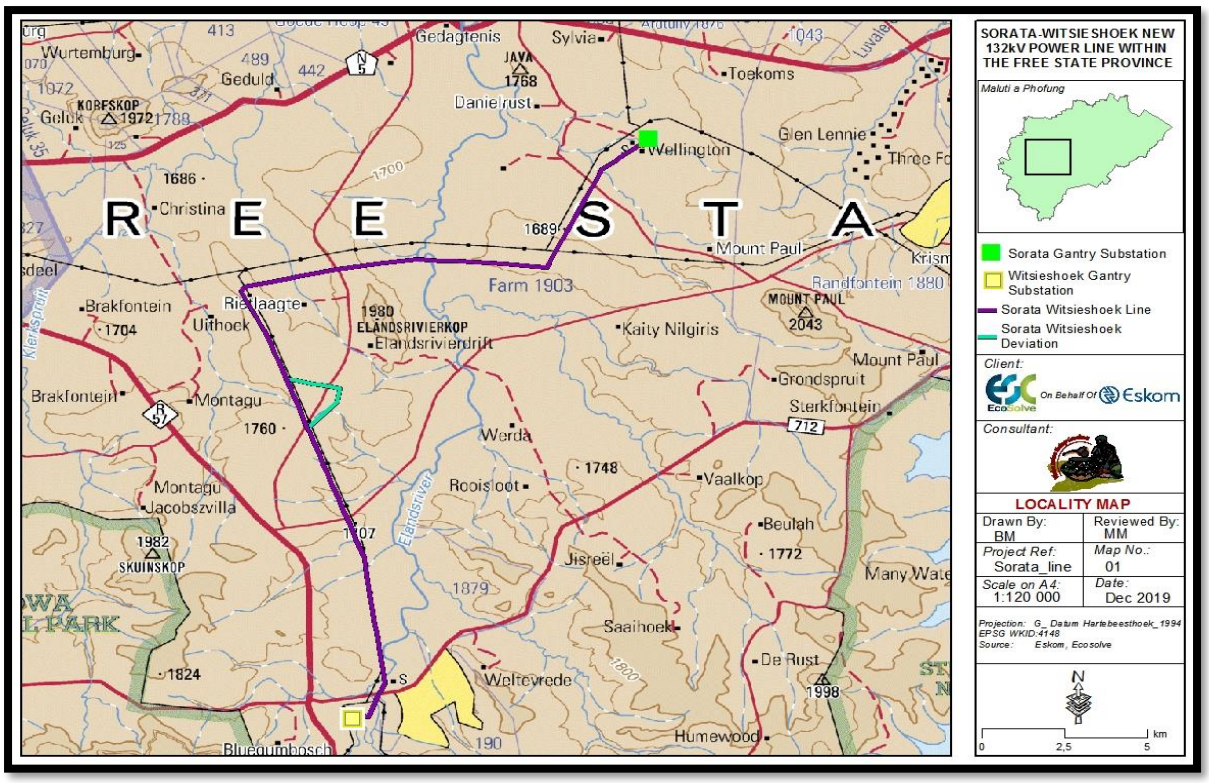


Figure 1: View of the topographical map of the area proposed for construction of powerline depicting neighboring towns.

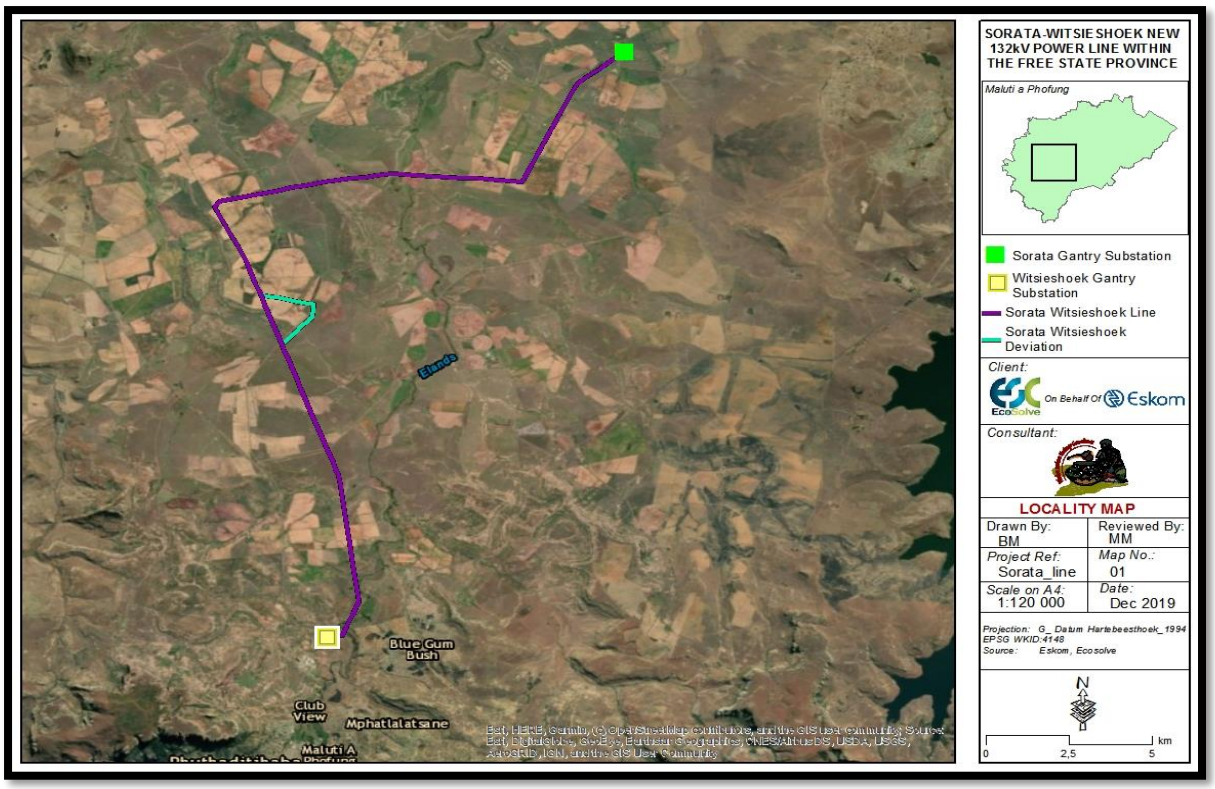


Figure 2: An overview of the locality map of the area proposed for construction.

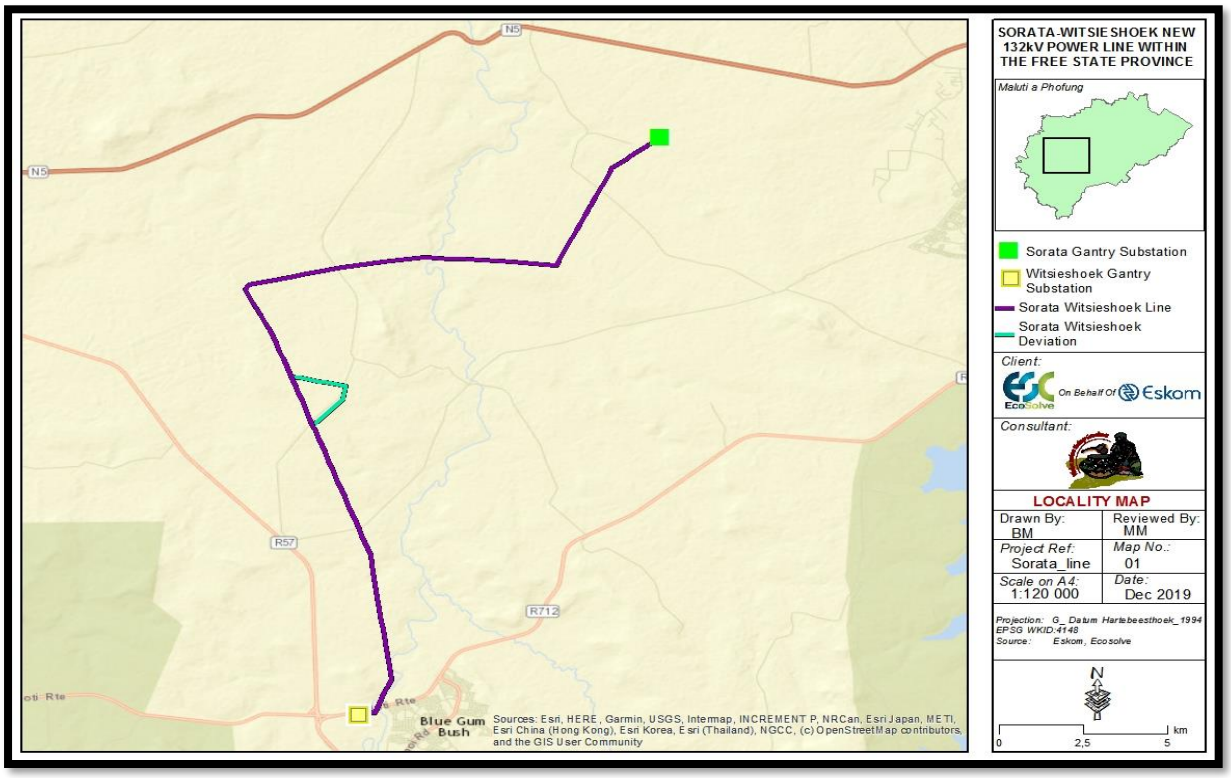


Figure 3: Another view of the map of the area proposed for construction.

Figure 4: An overview of the area proposed for the powerline deviation.

Figure 5: View of some of the area proposed for construction of the pylon position.

Figure 6: View of the area which is under intense farming activities in the proposed area.

3. Nature of the proposed project

The project involves the construction of a 3 km 132 kV powerline between Sorata switching station and Witsiehoek. It will consist of the following:

- the pole structure will be a steel monopole or lattice design;
- the height of the poles will vary between 21m and 24m; and
- the average distance between the poles will be 250m.

4. Purpose of the cultural heritage desktop study

The purpose of this Archaeological and Cultural Heritage study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed construction of powerline, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed construction of a powerline,
- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

5. Methodology

Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted: 1) literature review, 2), consultations with the developer and appointed consultants, 3), completion of a field survey and 4), analysis of the acquired data, leading to the production of this report.

Physical survey

The field survey was conducted on the **15th of December 2019**. Two archaeologists from Vhubvo conducted the survey.

Documentation

The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

Oral interview

Oral interview was initiated with farm owners.

Restrictions and Assumptions

It is assumed that the Social Impact Assessment and the Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the corridors and that these then will also have to be considered in the selection of the preferred alternatives.

6. Applicable heritage legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act (No 103 of 1993); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1)

of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50 m in length; and
(c) any development or other activity which will change the character of an area of land, or water -
(i) exceeding 5 000 m² in extent;
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRAor a Provincial Heritage Resources Authority;
(d) the re-zoning of a site exceeding 10 000 m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of theproposed development.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

(a) Places, buildings structures and equipment of cultural significance
(b) Places to which oral traditions are attached or which are associated with livingheritage
(c) Historical settlements and townscapes
(d) Landscapes and natural features of cultural significance
(e) Geological sites of scientific or cultural importance
(f) Archaeological and paleontological sites
(g) Graves and burial grounds including-
(i) ancestral graves
(ii) royal graves and graves of traditional leaders
(iii) graves of victims of conflict
(iv) graves of individuals designated by the Minister by notice in the Gazette
(v) historical graves and cemeteries; and
(vi) other human remains which are not covered by in terms of the Human Tissue Act,1983 (Act No. 65 of 1983)
(h) Sites of significance relating to the history of slavery in South Africa
(i) moveable objects, including -
(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites andrare geological specimens
(ii) objects to which oral traditions are attached or which are associated withliving heritage
(iii) ethnographic art and objects
(iv) military objects
(v) objects of decorative or fine art
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Other sections of the Act with a direct relevance to the AIA are the following:

Section 34(1) *No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.*

Section 35(4)*No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeologicalor paleontological site or any meteorite*

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

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

7. Discussion of (Pre-) History of South Africa

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline.Nonetheless, the earliest form of culture known in South Africa is the Stone Age. This is the prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. Noteworthy that the time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman and Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).

Stone Age

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period where little is known about. These may be due to many factors which include, though not limited to retrieval techniques used, reliance on secondary contexts, at times unknown sources, and the fact that few fauna from this period has been analysed (Chazan 2003). According to Robbins *et al.*(1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and were basically hunters and gatherers, this era is identified by large stone artefacts.

The Middle Stone Age overlap with the ESA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. This period is marked by smaller tools than in ESA. MSA people made a wide range of stone tools from both coarse – and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces.

Later Stone Age period began around 35 000 and extend to the later 1800 AD. According to Deacon (1984), LSA is a period when human beings refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with this period. Moreover, large quantity of art and ornaments were made during this period. Most of the Stone Age sites known in the area dates to the Later Stone Ageand vary from cave sites to open sites.

Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, they have been a debate about the use of the term. Other archaeologists have argued that the word "Iron Age" is problematic and does not precisely explain the event of what happened in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). In South Africa this period can be divided into three phases namely; the Early Iron Age (AD 200 - 900), Middle Iron Age (AD 900-1300) and Late Iron Age (AD1300 - 1850). Before the arrival of Europeans, the area was the home to Bantu-speaking peoples such as

the Sotho and some San groups. During the Late Iron Age, farming was of significance in the region.

Historical Period

Since the arrival of the white settlers - c. AD 1820s - in this part of the country. These settlers were largely self-sufficient, relying on cattle/sheep farming and also hunting. Towns were established and farming remains the most dominant economic activity.

8. Discussion of (Pre-) History of the Area

As it is generally agreed that Africa is the cradle of humanity, the credit must be given to South Africa for having contributed to this intellectual controversy for it is South Africa, of course with its eastern African counterparts who can brag to have a full chronological sequence of human evolution, a large quantity of human remains and many well preserved sites that that have contributed immensely to debates on human evolution. It was Raymond Dart in 1925, who identified the Taung child as an infant halfway between apes and humans. Dart called this discovery *AustropithecusAfricanus*, southern ape man, and this find ultimately changed the focus of evolution from Europe and Asia to Africa. His discovery gave birth to the discipline of Paleoanthropology (Robins *et al.* 1998). The southern African archaeology is broadly divided into Stone Age, Iron Age and the Historical period. Similarly, the history of Free State is reflected in a rich archaeological landscape, sites documenting Stone Age, Iron Age and the Historical period. Below is the discussion of the respective periods.

Stone Age

In the Free State nine cave sites have yielded a lot of tools cutting across the cultural divide. The nine caves are De Hoop, Lelihoek, Mauermanshoek, Orange Springs, Rooikrans, Roosfontein, Rose Cottage, Tandjiesberg and Twyfelpoort (Wadley 1995; Lombard *et al.* 2012), however, most ESA and MSA tools have mostly been found in open sites. The earliest ESA industry is the Victoria West Stone industry which was first defined and recorded by Smith in 1915. These tools have been found along the Vaal River. Smith called this culture "Tortoise cores", the idea being that he made a parallel to the tortoise shell in which individuals shells were chipped off from a single shell making tools such as handaxes. Later the "Tortoise –Cores" was regarded as a cultural marker in the transition from the ESA to the MSA (Goodwin 1935).

The MSA is clearly marked by the appearance of the prepared core technique. In the Free State the Florisband is the dominant culture (Bennemanet *al.* 2011). Open air sites seem to have been preferred in the eastern Free State. Rose Cottage is the only cave site that has yielded MSA tools. The MSA tools are knives and scrapers, and the dominant raw material is opaline (Wadley 1995).Other raw materials in the MSA of eastern Free State are fine grain quartzite, quartz, chalcedony, silcrete and hornfels (Bennemanet *al.* 2011).

In the study area all the nine cave sites have yielded LSA artifacts.The LSA is generally characterised by small tools known as microliths (Deacon & Deacon 1999). Bifaces still continued but were supplemented by tanged barbed arrowheads made from various materials. In the study area chalcedony was the preferred raw material (Humphrey 1999). Beside the stone tools the LSA is also characterised by other form of material culture such as rock art, both in paintings or engravings, pottery, ostrich egg shell beads. There are many paintings in the study region with faded paintings at Lelihoek shelter and De Hoop, and some well executed ones at Tandjiesberg shelter. Just like in the Limpopo, the rock art of the study area indicate a lot of contact between different cultural groups. At De Hoop cave there are poorly preserved paintings depicting Europeans, horses and elands (Wadley 1995).

Iron Age

Iron Age people moved into southern Africa by c. AD 200, entering the area either by moving down the coastal plains, or by using a more central route. In Free State the earliest known Iron Age settlement is OU1, between the modern towns of Vrede and Frankfurt, and is dated to AD 505. The other EIA site is OND2.When these Iron Age people entered the region, local Khoisan people already possessed grass-tempered and grit-tempered pottery and domestic stock (Wadley 1995:578).

There is no Middle Iron Age in the Free State. It is clear in the Limpopo where it is associated with the Zimbabwe culture (Huffman 2007). Other sites with well documented Iron Age artefacts include the Caledon River Valley known to have been occupied by the Fokeng group of the Sotho culture. Later this group migrated to settle in Matlaeeng, between Frankfurt and Vrede (Huffman 2007).In the study area, there is some rock art which is linked to the Iron Age by interaction; it is not directly executed by the San people. In the south eastern Orange Free State, for example cattle paintings are found with some Sotho shields which some researchers such as Binneman *et al.* (2011)

argue could be referring to the time of trouble, *mfecane*. One interesting painting is of a man walking with hunting dogs (Wadley 1995).

Historical era

In the Free State the town of Bloemfontein, which is currently the provincial capital is one of the most significant interior towns that were established by the European settlers of the Dutch origin. This was after the Voortrekkers had trekked from the Cape colony to avoid British adminstration (Hall, 1993). Other towns within the close proximity to the study area are; Kestell, Bethlehem, Phuthaditjhaba and Harrismith.The historical archaeology of the study region is rich in monuments, statues and memorials. There are also other buildings demonstrating various architectural styles and venarcular. The footprints of the Anglo-Boer War are clearly visible in the research area. The cave of Witsie also located in QwaQwa is another historical footmark of the study area.

9. Degree of Significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. Large sites, for example, may not be very important, but a small site, on the other hand, may have great significance, as it is unique for the region. The following table is used to grade heritage resources.

Table 1: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999)

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction

General Protected Area B		Medium Value		Recording before destruction
General Protected Area C		Low Value		No action required before destruction

Significance rating of sites

(i) High (ii) Medium (iii) Low

This category relates to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in.For example, an archaeological site may be the only one of its kind in the region, thus its regional significance is high, but there is heavy erosion of the greater part of the site, therefore its significance rating would be medium to low. Generally speaking, the following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a 'do not touch' situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when the appropriate heritage authority has issued a permit. The following table is used to determine rating system on the receiving environment.

Table 2: Rating System

NATURE		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
TOPOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).

3	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of proposed activity		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resource	The impact will result insignificant loss of resources.

4	Complete loss of resource	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impact on the heritage parameter. Duration indicates the lifetime of a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0-2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).
3	Long term	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10-50 years).

4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects.
MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.

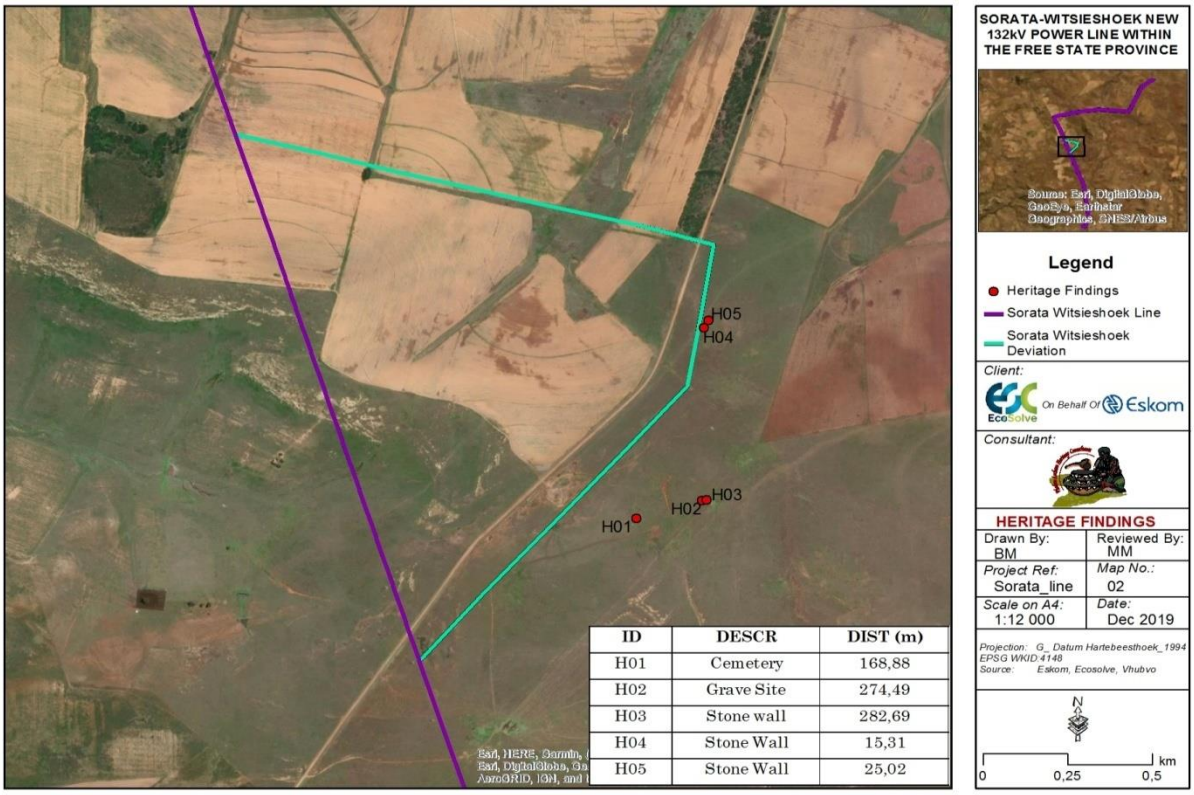
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapsed).Rehabilitation and remediation often impossible .If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on heritage parameter.		

10. Findings and Discussions

The cultural landscape of the area proposed for construction have already been threatened by farming activities, nevertheless, there are several sites that had been noted in the area. On that note, mitigation measures are essential to circumvent, lessen and where possible remedy or offset any significant adverse impacts on the sites that are located in the immediate area to that proposed for construction. The most important issue about mitigation plans is that they should not be an afterthought so that best heritage protection is achieved. The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed construction of a 132Kv powerline deviation from Sorata to Witsiehoek substationshas identified no significant impacts to archaeological or grave resources in the footprint of the proposed construction. However, it should be noted that there are five (5) sites (including isolated tools) that had been noted in a fairly immediate area of the proposed construction, with the closest being approximately 15m to the proposed area, and the furthest being approximately 600m. Although these sites are not in the footprintof the proposed construction, and will not be directly affected, it is possible that they may be impacted upon accidentally by circumlocutory construction activities. The results of findings are presented below:

Site Name	Gps	*Descriptions*	*Significance*	*Action*
H01	S28° 23' 08.1" E28° 49' 28.3"	A graveyard with approximately 42 graves was noted about 160m from the area of the proposed construction. These graves are clearly marked and visible (Figure 8).	High	This graves area visible, however, Eskom must take note of the positions and also ensure that no negative impact take place during construction.
H02	S28° 23' 06.2" E28° 49' 35.4"	A grave site demarcated by stones was noted about 200m from the	High	Eskom must take note of the grave and its positions and

		proposed area (figure 9).		also ensure that no negative impact take place during construction.
H04	S28° 23' 06.1" E28° 49' 35.9"	An oval-shaped stone walling was noted approximately 200m from the area earmarked for construction. Part of this wall is still intact (See figure 10).	Medium	The developer must take note of the site and the position and also ensure that no negative impact take place during construction.
H03	S28° 23' 17.4" E28° 48' 43.8"	Collapsed stone walling with scattered stones that appears to have dislodge from the original walling was noted about 25m from the proposed area.	Medium-Low	Eskom must ensure that an archaeologist is present during construction activities to ensure that there is no negative impacts.
H05	S28° 22' 48.5" E28° 49' 35.3"	A collapsed stone wall was noted about 15m from the line with a possibility that this could have extended to the area proposed for construction of the line.	Medium-Low	Monitoring during construction is recommended.



ID	DESCR	DIST (m)
H01	Cemetery	168,88
H02	Grave Site	274,49
H03	Stone wall	282,69
H04	Stone Wall	15,31
H05	Stone Wall	25,02

Figure 7: View of the archaeological sensitivity map depicting the findings in the proposed area.

Figure 8: View of the graveyard noted on the adjacent of the proposed area.

Figure 9: View of an isolated grave noted close to the area proposed for construction.

Figure 10: View of the stone walling noted in the area adjacent to the proposed site.

Figure 11: View of the collapsed stone walling in the proposed area.

11. Recommendations and Discussions

As aforementioned, the area around the proposed construction is affluent of material culture dating to the archaeological and historical periods (Smith 1919; Goodwin 1926; Hall 1993; Wadley 1995; Huffman 2007; Binneman *et al.* 2011; Lombard *et al.* 2012; Magoma 2017). Note must be taken that the proposed construction is not going to have an all negative impact on the proposed area, only the selected points will be impacted. There is however a strong possibility that the noted site (s) may be affected indirectly by accidental destruction, due to unawareness or unfamiliarity by constructors. It is on that note that recommendation in this report should be taken with receptiveness. Firstly and in relations to burial grounds, the developer should ensure that the descendant (community members in this instance) of the graves are sought, and notified about this proposed development which might have an impact (directly or indirectly) on their grave. This can be done by means of public participation or placing of intent to develop placards in the area. No stone robbing or removal of any material must be initiated anywhere in the area next to the burial ground. Anydisturbance or alteration on the graveyard would be illegal and punishable by law, under section 36 (3) of the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999). Furthermore, Eskom must maintain a reasonable buffer zone around the identified grave (approximately 30metres), and no dumping of construction material must happen within this buffer zone and no alteration or damage may occur. Access road to the grave site must never be

closed or demarcated at any given times of the project. Thus, the developer should ensure that there is always access to the grave site, and the developer should avoid conveying duty during the time when the graveyard is active (that's mostly Saturday morning).

It is further recommended that a Heritage Management Plan (HMP) and a Chance Find procedure be compiled before construction resume. The compilation and adoption of the HMP will protect the integrity of sites and promote awareness of the elements of the Cultural Landscape, as well as ensure the following:

- ✓ Guide Eskom and relevant stakeholders in addressing concerns related to the identified sites that are not directly affected, yet they are in the instantaneous area; and
- ✓ Develop a monitoring programme to facilitate effective implementation of the HMP.

11.1 Impact Assessment

Below is the impact rating. This rating is for cultural heritage sites known to exist in the proposed area, and includes graves, as well as Historical era materials. Note that these impacts are assessed as per Table 2 above:

Table 3: Anticipated impact rating.

Description	Ratings
Nature	Negative
Topographical Extent	The impact will only affect site
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Irreversible
Irreplaceable Loss	The impact can result in significant loss

12. Conclusions

A thorough background study of the proposed development was conducted and findings were recorded in line with SAHRA guidelines. As per the recommendations above, the proposed construction can proceed on condition that the recommendation mentioned above will be initiated. Noteworthy that there are no major heritage reasons why the proposed construction could not be allowed to proceed.

Note should be taken that there is no material (s) that can be found in the proposed area that can be considered to be of such significance that can prevent the proposed development from proceeding.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality?