



**PHASE I CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST
REPORT FOR THE PROPOSED ESKOM SVR CABLE REROUTE FROM
VAALPARK CNC SIGMA SHAFT 88/11Kv SUBSTATION TO RIGI NORTH CNC
ON LOCAL ROAD L2788 WITHIN METSIMAHOLO LOCAL MUNICIPALITY
OF FEZILE DABI DISTRICT MUNICIPALITY IN THE FREE STATE.**

May, 2021

©COPYRIGHT

This Phase 1 Archaeological Report contains intellectual information that is protected by copyright in favour of *Vhubvo Consultancy Cc*. Thus, it may not be reproduced or edited without prior written consent of *Vhubvo Consultancy Cc*; it has been exclusively prepared for *Eskom*.



DECLARATION

ABILITY TO CONDUCT THE PROJECT

Alvord Nhundu is a professional archaeologist. He completed his Bachelor of Science with Honours degree in archaeology with the University of the Witwatersrand (Wits) and Masters in Archaeology with the University of Pretoria (UP). His research interest lies in old and new world archaeology, palaeoenvironmental and climatology, archaeological theory, Later Stone Age, rock art, hunter-gatherers, hunter-gatherer interactions, several aspects of southern African Iron Age and Indigenous archaeologies. Alvord is an accredited Cultural Resource Management (CRM) member of the Association of southern African Professional Archaeologists (ASAPA #338). He is also affiliated to Society of South Africanist Archaeologists (SAfA) and the International Council of Archaeozoology (ICAZ). He has been practising CRM for more than 7 years, and has completed over 100 Archaeological Impact Assessments (AIA) for developmental projects in the Limpopo, Mpumalanga, North-West, Eastern Cape, Free State 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 on request.


Nokusho Ngobeni is a qualified archeologist, she obtained her BA Honours degree at the University of Pretoria (UP) and a Master's of Science in Archaeological-Heritage Management at the University of the Witwatersrand (Wits). Nokusho has over four years of experience in Heritage Management, involving Heritage Research and Archival work and has worked as an archeology Field and Lab Technician at Wits. Moreover, she has undertaken Archaeological Heritage Impact Assessments and relocation of graves for a number of projects. She is a member of the South African Archaeological Society (SAAS) and International Association for Impact Assessment (IAIASa).

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 1000 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 declare that this report has been prepared independently of any influence as may be specified by all relevant departments, institutions and organisations. We act as the independent specialists 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 favourable to the applicant. We declare that there are no circumstances that may compromise our objectivity in performing such work. We vow to comply with all relevant Acts, Regulations and applicable legislation.

AUTHOR'S CONTACT DETAILS:





Nokusho Ngobeni

Alvord Nhundu

Munyadziwa Magoma



Acknowledgements

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



EXECUTIVE SUMMARY

Introduction

Vhubvo Consultancy Cc (Vhubvo) has been appointed by Eskom to conduct an Archaeological and Cultural-Heritage Impact Assessment study for the proposed Eskom SVR cable reroute between Vaalpark CNC Sigma Shaft 88/11Kv Substation and Rigi North CNC within Metsimaholo Local Municipality of Fezile District Municipality of Free State Province. The main aim of the study was 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. Further, the study aims to advise on mitigation measure should any sites be impacted, these mitigations will, in turn, assist the developer in making decision on the most appropriate option (s) in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The closest town to the proposed area is Sasolburg. This town was established in 1954 to provide housing to employees who were working at Sasol One plant which was formed in 1950. Sasol One became the first place to be designated as a National Key Point under the National Key Points Act, which legislation protected areas so designated from "loss, damage, disruption or immobilisation that may prejudice the Republic. However, on the 2nd of June 1980, Sasolburg was attacked by Umkhonto we Sizwe, the African National Congress's (ANC) military wing, who bombed two sites. Although the attack proved to be largely ineffectual in terms of sabotaging the manufacturing processes, the propaganda impact of the attack was significant, and the South African government presented the event as the result of a foreign, communist onslaught against South Africa.

Background and Need of the Project

Eskom intends to address power shortages in the Rigi North CNC in the Free State Province. Power supply to Rigi North is realised through a 1.14m 95sqmm cable from SVR19 to SVR20. This cable is located in a secluded place, densely vegetated area and the location has created favourable conditions for cable theft. In mid-2018, the cable was stolen by thieves and resulted in abnormal supply to the rest of Rigi North CNC SVR customers. With the abnormal supply which has been achieved by back feeding from Rigi North CNC lines, the SVR customers are also experiencing low voltage problem as they are at the end of the network. Restoration of supply to normal was initially planned through installing MV overhead line from SVR19 10 towards the river bank. Supply to SVR20 from the overhead line was going to be achieved by terminating the line to the pre-existing underground cable at the river bank. The aim was to do away with the long cable completely. However, the plan hit a brick wall when the land owner refused to give rights to install MV overhead line on his private property. Now a proposed alternative is to install an underground cable still on the same route as was initially proposed for the MV line. The advantage with this route is a shorter cable length of 390m, but most importantly the cable will be along the road and hence increased visibility which will deter the cable thieves.



Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this impact assessment; the following processes were followed:

- Literature Review: To understand the background archaeology of the area, a background study was undertaken and relevant institutions were consulted. These studies entail the view of archaeological and heritage impact assessment studies that have been conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor, Google scholars and History Resource Centre were searched. The University of Pretoria's Library collection was also pursued;
- The field study was conducted on the **19th of May 2021**. Three archaeologists from Vhubvo surveyed the area.
- The final step involved the recording and documentation of relevant archaeological resources, as well as the assessment of resources in terms of the heritage impact assessment criteria and report writing, as well as mapping and useful recommendations.

The applicable maps, tables, and figures, are included as stipulated in the NHRA (no 25 of 1999), the National Environmental Management Act (NEMA) (no 107 of 1998) and the Minerals and Petroleum Resources Development Act (MPRDA) (28 of 2002).

Brief History of the Area

The Stone Age is the period in human history when stone materials were used to produce tools. In South Africa the Stone Age can be divided into three periods, Early (More than 2 million years ago - 250 000 years Ago), 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 for interpretation. This area is home to three known phases of the Stone Age. 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 two separate phases. Early (AD 400 - AD 1025) and Late (AD 1025 - AD 1830). Although there are no known Early Iron Age sites in the area, there are several Late Iron Age sites in the area (Bergh 1999: 7 - 8). The Late Iron Age farmers were followed by colonists.

Restrictions and Assumptions

The vegetation of the study area was thick, defined by thorn trees and bushy grass, with isolated outcrops. . In spite of this, care was undertaken to cover the entire area. It must also be indicated that Social Impact Assessment and Public Participation Process were not part of this study. As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once development resume.



Impact Assessment

The impact of the proposed development on archaeological and cultural heritage remains is rated as being low. The probability of locating any important archaeological remains dating to the Stone or Iron Age during construction of the project is rated as low.

Survey Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s), as well as to determine if there is any hamartia that may prevent the proposed construction from taking place in the proposed area. The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Eskom SVR cable reroute revealed no archaeological, historical or associated material in the footprint of the area of study. Nevertheless, stone assemblages were identified in the vicinity of the proposed area, however, this appears to be as a result of past construction activities in the area. It is important to note that this arrangement does not resemble stone walling nor grave arrangement pattern, and is most likely that this resulted from past road constructions. The area is thus generally disturbed such that there is no archaeological resources expected in situ.

Recommendations and Discussions

Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction (e. g. excavation), SAHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, 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 and survey of the proposed development was conducted and findings were recorded in line with SAHRA guidelines. It is recommended that the developer proceed with the project subject to the recommendations given above.



TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
ACRONYMS AND ABBREVIATIONS	11
GLOSSARY OF TERMS	12
1. Introduction.....	17
2. Sites Location and Description	16
3. Nature and need of the Proposed Project	21
4. Purpose of the Cultural Heritage Study	24
5. Methodology and Approach.....	24
6. Applicable Heritage Legislation	25
7. Degree of Significance.....	27
8. Discussion of (Pre-) History of the Area.....	33
9. Findings and Discussions	37
10. Recommendations.....	41
11. Conclusions	41
APPENDIX 1: SITE SIGNIFICANCE.....	44
APPENDIX II: CHANCE FIND PROCEDURE.....	45



LIST OF FIGURES

Figure 1: Topographic map of the area proposed for the development.	17
Figure 2: An overview of the area proposed for underground pipeline construction.	18
Figure 3: The proposed area for the route marked with peg(s).....	18
Figure 4: View of some of the path noted in the proposed area.....	19
Figure 5: View of the proposed area from the eastern section.....	19
Figure 6: View of the gravel road leading to the station.....	19
Figure 7: An overview of the station surrounded by the proposed cable route.....	20
Figure 8: View of the Marl Bank situated on the north east of the proposed area of construction..	20
Figure 9: A view of the Marl Bank situated on the north east of the proposed development.....	20
Figure 10: A view of the Marl Bank situated on the north east of the proposed development.....	21
Figure 11: Stone assemblage.....	22
Figure 12: A view of the Marl Bank situated on the north east of the proposed development t.....	38
Figure 13: A view of the Marl Bank situated on the north east of the proposed development.....	38



LIST OF TABLES

Table 1: Grading systems 27
Table 2: Rating System..... 28
Table 3: Site findings 37
Table 4: Anticipated impact rating..... 38



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
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, palaeontological 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



Proposed Eskom SVR cable reroute

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.



Proposed Eskom SVR cable reroute

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).



Proposed Eskom SVR cable reroute

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



1. Introduction

Vhubvo Consultancy Cc (Vhubvo) has been appointed by Eskom to conduct an Archaeological and cultural heritage impact assessment study for the proposed ESKOM SVR cable reroute from Vaalpark CNC Sigma Shaft 88/11Kv substation to Rigi North CNC. The study aims is 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 construction is located between Vaalpark and Rigi North with the Metsimaholo Local Municipality of Fezile Dabi District Municipality of Free State Province. The proposed area for the route is fairly steep, defined by a lot of outcrops, thorny trees and bushy grass. The area is generally disturbed such that there are no materials of archaeological significance that can be found in situ. The proposed area is currently vacant and zoned for agriculture.

Summary of Project Location Details:

Province:	Free State
Local:	Metsimaholo
District:	Fezile Dabi
Village name(s):	Rigi North CC
Proposed development:	Eskom SVR cable reroute



Proposed Eskom SVR cable reroute

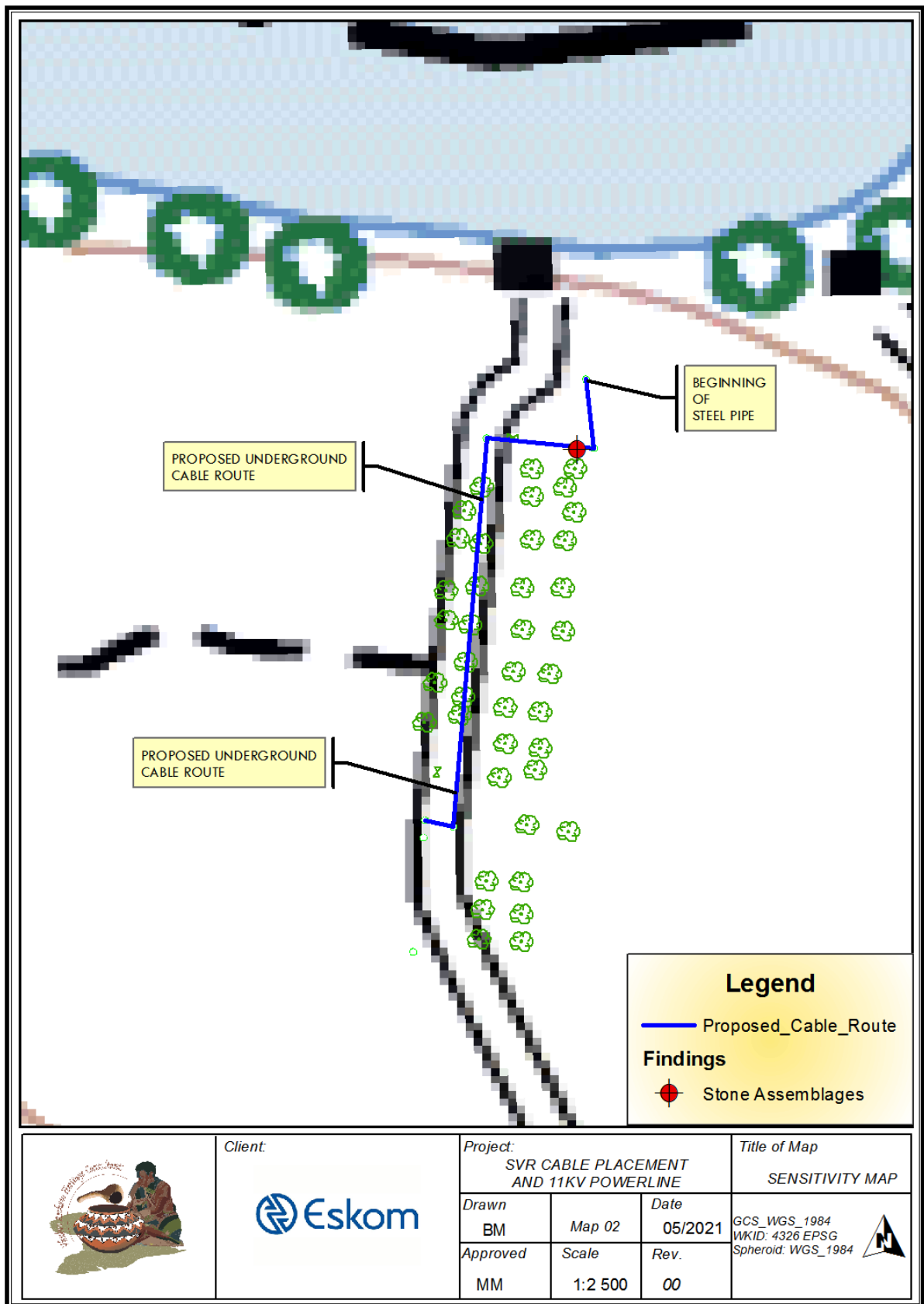


Figure 1: Topographic map of the area proposed for construction of the underground pipeline.





Figure 2: An overview of the area proposed for underground pipeline construction.



Figure 3: View of the proposed area for the route marked with peg(s).



Figure 4: View of some of the path noted in the proposed area.



Figure 5: View of the proposed area from the eastern section.

Proposed Eskom SVR cable reroute



Figure 6: View of the gravel road leading to the station.



Figure 7: An overview of the station surrounded by the proposed cable route.





Figure 8: View of the Marl Bank situated on the north east of the proposed area of construction.

3. Nature and need of the Proposed Project

Power supply to Rigi North is realised through a 1.14m 95sqmm cable from SVR19 to SVR20. This cable is located in a secluded place, densely vegetated area and the location has created favourable conditions for cable theft. In mid-2018, the cable was stolen by thieves and resulted in abnormal supply to the rest of Rigi North CNC SVR customers. With the abnormal supply which has been achieved by back feeding from Rigi North CNC lines, the SVR customers are also experiencing low voltage problem as they are at the end of the network. Restoration of supply to normal was initially planned through installing MV overhead line from SVR19 10 towards the river bank. Supply to SVR20 from the overhead line was going to be achieved by terminating the line to the pre-existing underground cable at the river bank. The aim was to do away with the long cable completely. However, the plan hit a brick wall when the land owner refused to give rights to install MV overhead line on his private property. Now a proposed alternative is to install an underground cable still on the same route as was initially proposed for the MV line. The advantage with this route is a shorter cable length of 390m, but most importantly the cable will be along the road and hence increased visibility which will deter the cable thieves. Therefore, the development entails the following:



Proposed Eskom SVR cable reroute

- Install cable termination with isolators at SVR19-10
- Excavate a 450mm × 1150m 380 m cable trench from SVR19-10 towards SVR20, however, before the river bank ($S26^{\circ} 48' 0.3'' E27^{\circ} 46' 10.4''$)
- Lay the 390m 95sqmm XPLE cable from SVR 19-10 towards SVR20, however, before the river bank ($S26^{\circ} 48' 0.3'' E27^{\circ} 46' 10.4''$)
- Terminate the cable at SVR19-10 and join with the existing 95sqmm PILC cable at the end
- Backfill and compact cable trench with excavated soil

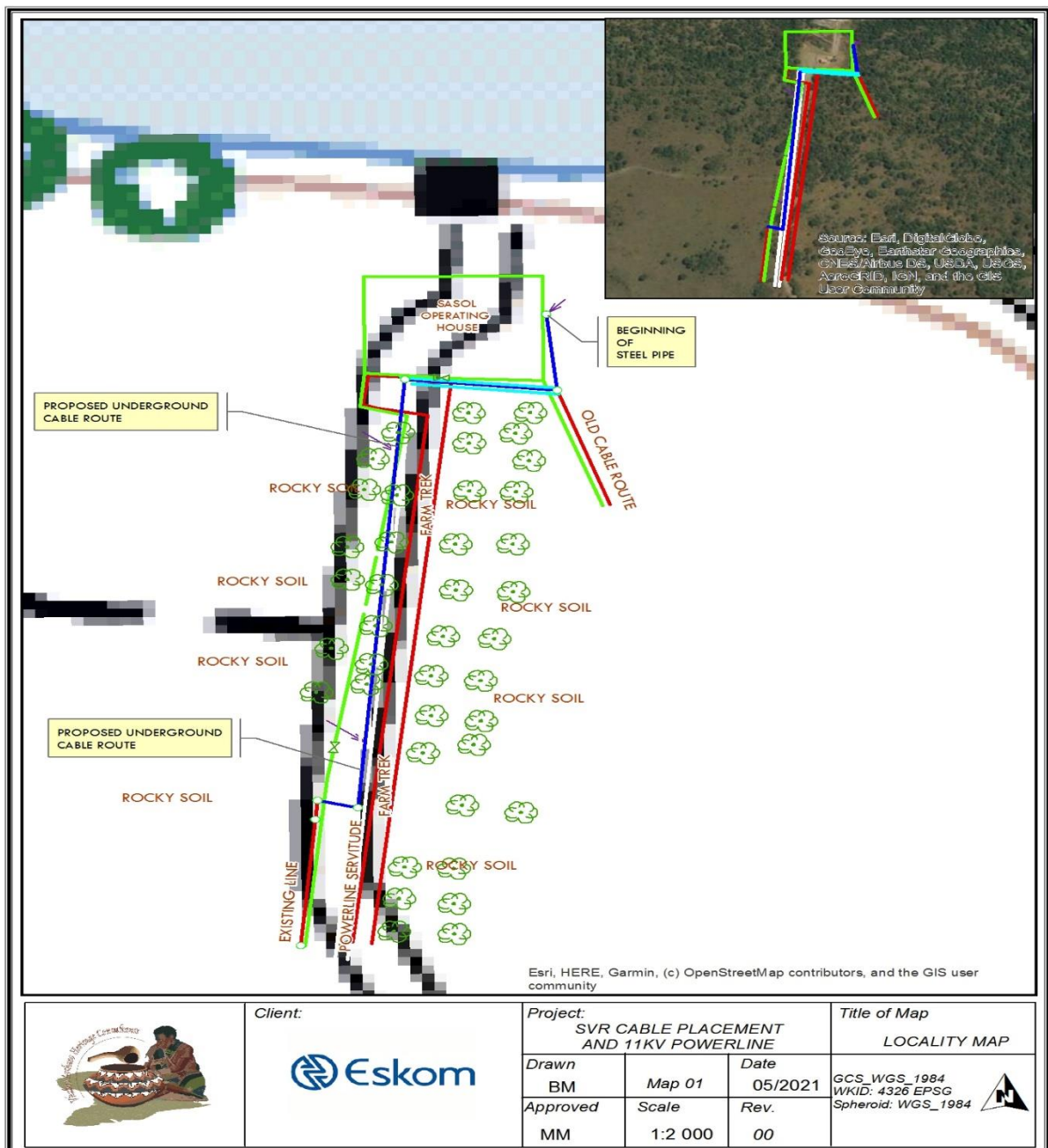


Figure 9: View of site plan overlaid on topographical map.



Proposed Eskom SVR cable reroute

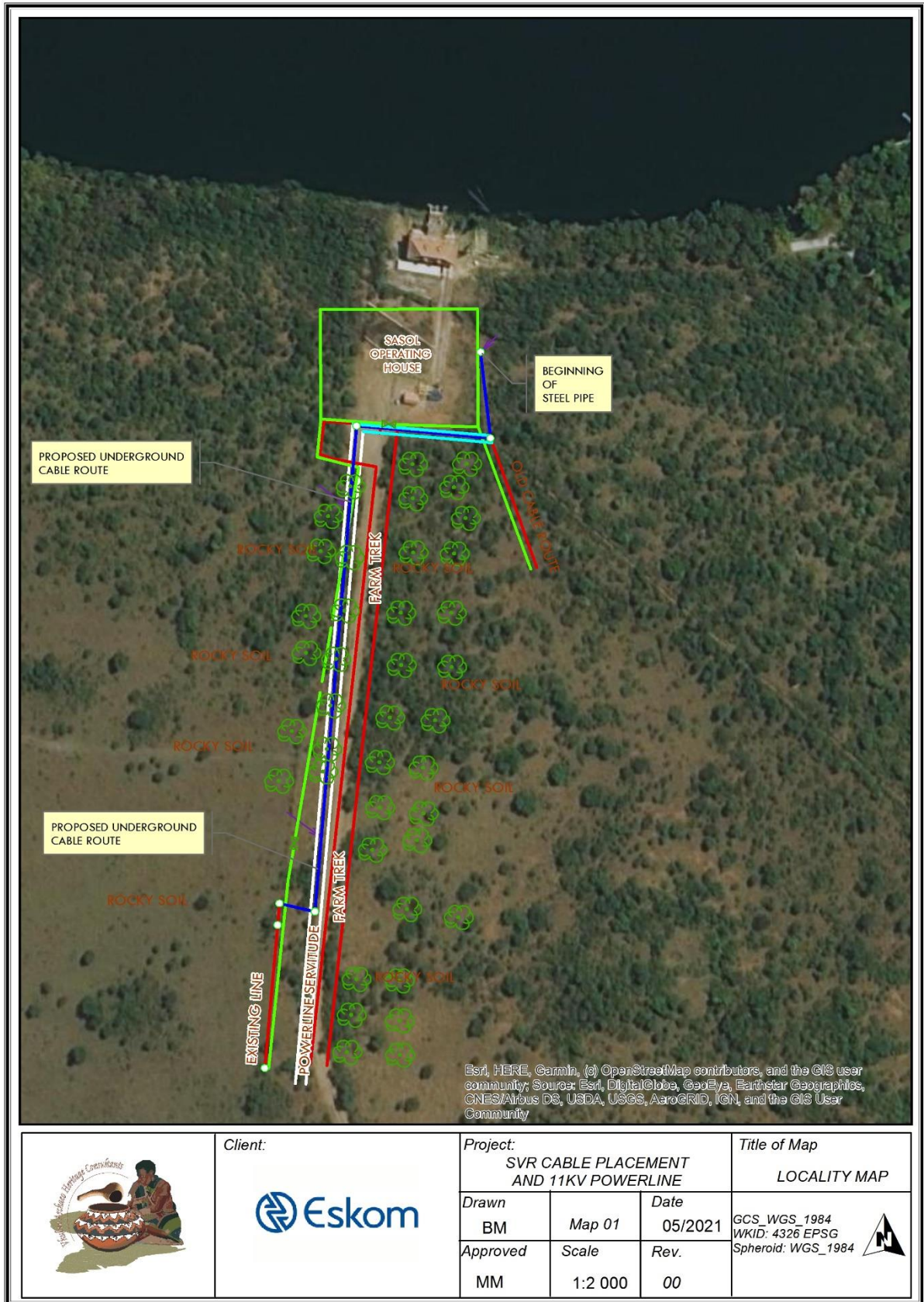


Figure 10: View of site plan overlaid on aerial view.



4. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study is 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, 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 may be affected by the proposed construction;
- 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 and Approach

5.1 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 community members;
- 3) Completion of a field survey; and
- 4) Documentations and analysis of the acquired data, leading to the production of this report.

5.1.1 Literature Review

The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the area over the past years, as well as historical aerial maps located in the Deeds Office. These literatures were used to screen the proposed area and to understand the baseline of heritage sensitivities.

5.1.2 Oral interview

Oral interview was not initiated.



5.1.3 Physical survey

The field survey was undertaken on the 19th of May 2021. Archaeologists from Vhubvo conducted the survey.

5.1.4 Documentation

The general project area was documented. This documentation included taking photographs using cameras a 14.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

5.2 Restrictions and Assumptions

This HIA did not assess intangible heritage that may be associated with the project area. Based on the desktop studies conducted, the following archaeological and heritage resources are anticipated to occur within the proposed area:

- Stone Age material such as MSA or EIA

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, if any archaeological/ or gravesite is observed during construction, a heritage specialist must be notified immediately.

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 SAHRA or 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 the proposed development.*



Proposed Eskom SVR cable reroute

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 living heritage*
- (c) *Historical settlements and townscapes*
- (d) *Landscapes and natural features of cultural significance*
- (e) *Geological sites of scientific or cultural importance*
- (f) *Archaeological and paleontological sites*
- (g) *Graves and burial grounds including-*
 - (i) *ancestral graves*
 - (ii) *royal graves and graves of traditional leaders*
 - (iii) *graves of victims of conflict*
 - (iv) *graves of individuals designated by the Minister by notice in the Gazette*
 - (v) *historical graves and cemeteries; and*
 - (vi) *other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983)*
- (h) *Sites of significance relating to the history of slavery in South Africa*
 - (i) *moveable objects, including -*
 - (i) *objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens*
 - (ii) *objects to which oral traditions are attached or which are associated with living heritage*
 - (iii) *ethnographic art and objects*
 - (iv) *military objects*
 - (v) *objects of decorative or fine art*
 - (vi) *objects of scientific or technological interest; and*
 - (vii) *books, records, documents, 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 archaeological or palaeontological 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. 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.



Proposed Eskom SVR cable reroute

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, or the house in which John Langalibalele resided.
- 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



Proposed Eskom SVR cable reroute

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.



Proposed Eskom SVR cable reroute

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).



Proposed Eskom SVR cable reroute

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.



Proposed Eskom SVR cable reroute

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.

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

In the 1980s, geological earthwork activities accidentally exposed cercopithecoid species remains of the early human ancestors (Kuhn et al. 2016). The discovery of the early hominids brought interest to the archaeologists in understanding the past human cultures and behaviors. Southern African prehistorical period began two million years ago during the development of human culture (Lombard et al. 2012) before the arrival of the white settlers during the colonial period. The South African prehistory comprises Stone Age (Early Stone, Middle Stone & Later Stone Age (Lombard et al. 2012)), Iron Age (Early Iron, Middle Iron Age & Late Iron (Huffman 2001; Badenhorst 2009)) and Historical era. This study focuses on the region of Free State (the Vaal).

Stone Age

The Early Stone Age is associated with the early hominid species who utilised lithic raw material sources to manufacture stone tools. Stone Age sequence is divided into three phases (Early Stone Age, Middle Stone Age & Later Stone Age) distinguished by the technocomplexes or industrial complexes (Lombard et al. 2012). The Stone Age period initiated with the early hominid species such as *Australopithecus africanus* (Kuhn et al. 2016) and continued with the Khoi Khoi and the San group in the Later Stone Age (Mazel 1992). A number of Stone Age sites as well as the evidence associated with the stone tool have been documented across the entire country.

Early Stone Age (ESA)

ESA began around 2 million years ago with the appearance of the early hominid (Lombard et al. 2012). The species were the owners and manufacturers of the earlier and later ESA tools. This sequence is associated with first human like species such as the *Australopithecus africanus* mentioned above (Kuhn et al. 2016). This phase is composed of two industrial complexes; the Oldowan techno-complexity and the Acheulean industry (Lombard et al. 2012). Oldowan tools date back in about 1.5-2 million years ago. The Oldowan industry is characterised by simple tools (e. g. cleavers, handaxes & cores with one piece flaked off). Sites containing evidence of Oldowan tools includes Wonderwerk Cave (Chazan et al. 2008), Sterkfontein, Swartkrans (Brain 1985, Clark 1993), Komdraai A (Kuma et al. 1997) and Kromdraai B (Kuma et al. 1997, Thackeray et al. 2002, Kuman 2007). Later, the Oldowan was replaced by the Acheulean (3000-1 500 000 years ago)



techno-complex industry indicated by progressive technological production of tools. Hand axes, cleavers and large flakes were recovered in the Acheulean layers. Site(s) comprising of Acheulean tools are in the Free State province includes Cornelia Uitzoek (Herries 2011). Remarkably, within this pre-historical period in the later ESA (2000-6000 years) a transition from ESA to MSA was documented, marked by the introduction of the Fauresmith industry.

Middle Stone Age (MSA)

Remarkably, within this prehistorical period in the later ESA (2000-6000 years) a transition from ESA to MSA was documented, marked by the introduction of the Fauresmith industry. The Fauresmith sequence provided evidence of stone tools such as the upgrade notched cleavers, large blades, points and Levallois technology (Lombard et al. 2012). Little has been documented about the MSA in South Africa; nonetheless, there are few sites that are well recorded across the province of Free State Natal such as Rose Cottage cave (Thorp 1996) and Rooikrans (Thorp 1996).

Later Stone Age (LSA)

Disparate to ESA and MIS, there is an overlap between the MIS and LSA. LSA history is divided into early LSA to final LSA. The early LSA comprises of three techno-complexes that is: 1. Robben MI Bladelet recovered from Elands Bay Cave, Boomplaas (Deacon 1982, 1984) and Melkhoutboom (Deacon 1976). 2. Oakhurst dating around 7000-12 000 years ago in the Albany, Lockhoek layers round end and D-shaped scrapers and adzes polished tools were documented. Evidence of the Oakhurst technology were recorded from the Bushmen Rock Shelter (Sampson 1974), Kruger Cave (Mason 1988), Rose Cottage Cave (Wadley 1997, 2000a; Pienaar et al. 2008) and in Wilton Large Rock Shelter (Deacon 1972). 3. Wilton complex dates roughly 4 000-8 000 years ago, associated with advanced standardised tools and microlithic. Apart from stone tools, varieties of tools were recorded, such as OES, ochre, bone, shell and wooden objects. The final LSA dates approximately 100-4 000 years ago and closely linked with the ancestors of the Khoi Khoi and San groups. Khoi Khoi and San groups were a mobile group associated with the establishment of temporal settlements and rock art paintings. Hunting and gathering were the main economy activities for the group, however, the LSA sites saw the introduction of Iron Age objects such as iron and ceramics found at the hunter-gatherer sites. Klein (1979) stated that based on observation Bushmen herded stock along the Riet River. The wider study area is known to contain some Stone Age material. Van der Walt (2011) stated that the Vaal Gravel are known to comprise Stone Age deposit and rock art sites. That is such for example the Leeuwkuil site northwest of Wonderfontein Farm comprises of rock engravings. Furthermore, the area of Vereeniging contains 244 rock engravings portraying animal, geometrics and other features of San people (Prestorius 2007).



Iron Age

According to Huffman (2001) stated that the term “Iron Age” refers to a group of people who made use of metal for agricultural purposes. The period is largely associated with metallurgical production. Apart from metal invention, Huffman (2001) expressed that Iron Age people are well understood in the context of ceramic distinctions and settlement layout patterns. He precisely apprehends Iron Age people through the application of ethnographic interpretation, the Central Cattle Pattern model (CCP). The CCP model entails that the Early Iron Age societies were characterised by settlements with male areas, kraals and storage areas located at the center surrounded by the outer structures belonging to the wives. Consequently, Huffman’s model was challenged by Badenhorst (2009) stating that the model is not relevant but applicable to other cultures elsewhere. Badenhorst (2009) further argued against the notion that the Iron Age communities were led by the patriarchy. However, the CCP model is still used even today to understand Iron Age sites. The Iron Age sequence is closely linked with the spread of the Bantu Speakers from the West Africa to the Southern Africa. This prehistorical period dates AD 200-AD 1820. Iron Age is divided into three ages; Early, Middle and Later Iron Age discussed below.

Early Iron Age (EIA)

Around AD 200-the Bantu Speakers migrated to the Southern Africa. Early Iron Age group consisted of immobile small communities associated with the production of food (cultivation & farming) and iron. The early Iron Age communities settled nearer to iron and water resources. The EIA groups were small in population numbers and preferably settled on the foot of the hill rather than hilltop.

Middle Iron Age (MIA)

Evidence of the early developed state societies in South Africa were discovered. Approximately AD900-1300, Mapungubwe Hill was established as first state in South Africa (Huffman 2001). Mapungubwe complex society was characterised by an organised political structure had a sacred ruler, involved in long distance trade, establishment of class distinction and other states indicators. The presence of the EIA material culture (Happy Rest ceramic style) has been noted in Mapungubwe by Robinson (1967). Archaeological resources recorded at Mapungubwe include Zhizo pottery, glass beads, stonewalling, gold, dagga and iron residue (Badenhorst 2009).

Late Iron Age (LIA)

LIA communities in Free State were the Sotho-Tswana-speaking people (Klein 1979). This historical period dates back to about AD 1300-1820 (Badenhorst 2009). In consequently, the LIA was accompanied by a high sociopolitical complexity, high population, intensive farming and land degradation affecting cultural complexity (Badenhorst 2010). Evidence of Iron Age objects were



Proposed Eskom SVR cable reroute

found on sites such as Ventershoek and Tienfontein (Klein 1979). The Iron Age period was demised by the arrival of the white missionaries.

The reasons for the unavailability of Iron Age sites in the vicinity of the study area have more to do with lack of focused research than their absence.

Historical era

In 1800s the Free State province saw the arrival of the white settlers into the Orange Free State. The migration of the Voortrekkers to the North of the Orange Free State and other provinces of South Africa was led by the attraction of the rich mineral resources, land and the economy of the local communities (Bergh 1999). White settlers migrated from the Cape Colony to what is today known as the Free State province, and came into contact with the Basotho tribe led by King Moshoeshoe. Under the permission from the King to settle on the Basotho land the Boers established mission stations, towns and farms, although those developments led into conflict with the black people over their land. The settlers declared the Orange Free State a Boer republic, thus controlling the area between the Orange and Vaal River. Three wars (Basotho war I, II & III) between the white settlers and the Basotho people were experienced. The First Basotho War began when the king and the settlers had a discussion on arm issues and stealing of cattle. Basotho tribe conquered the first war at the top of the Thaba Bosigo. The Second Basotho War against the Boers was again conquered by King Moshoeshoe under the British protection. However, the cattle were taken by the Boers and their crops were destroyed. Due to starvation in the Basotho tribe a treaty was signed by King Moshoeshoe which gave the settlers authority over land, although the Basotho did not move from the area instantly, the third war followed. The Third Basotho War between the Boers and Basotho was conquered by the Boer forces who manage to establish their territory. Despite the wars, the Basotho King managed to save the kingdom from the Boer forces. In 1870 the King died and was buried at the highest level of Thaba Bosigo (van Vollenhoven 2020 see Heydenrych 1986: 143-150; Wepener 1934: 9-81). During the Basotho Wars the Anglo-Boer War (1899) between the British and Boers was recorded and today are represented by war memorial and monuments in the Free State province (SA History online). The proposed area is situated in an area that dominantly practices Agropastoral farming. In addition, the proposed area is situated not far from the Sasolburg and Vaalpark Township.



9. Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s), as well as to determine if there is any hamartia that may prevent the proposed development from taking place in any of the proposed study areas. The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Eskom SVR cable reroute revealed no archaeological, historical or associated material in the footprint of the area of study. Nevertheless, stone assemblages were identified in the vicinity of the proposed area, however, this appears to be as a result of past construction activities in the area. It is important to note that this arrangement does not resemble stone walling nor grave arrangement pattern, and it is most likely that this resulted from past road constructions. The area is thus generally disturbed such that there are no archaeological resources expected in situ.

Table 3: Site findings

Recorded Number	GPS	Description
Dr1	S 26°48'04.00" E027°46'09.09"	Stone assemblage which appears to have resulted from terracing (see Fig. 11).
<u>Significance: Low</u>		

Impact Assessment

Below is a description of the proposed residential project as well as related impact ratings. These ratings are for archaeological and cultural heritage sites known to exist in the proposed area, and include Stone and Iron Age, as well as Historical era materials. Note that these impacts are assessed as per Table 2 above:





Figure 5: Stone assemblage within the vicinity of the proposed development.

Table 4: Anticipated impact rating

Alternatives	Ratings
Nature	Negative
Topographical Extent	The impact will only affect site.
Duration	Medium term
Magnitude	Low
Probability	Possible
Reversibility	Partly reversible
Irreplaceable Loss	The impact will result in no loss



Proposed Eskom SVR cable reroute

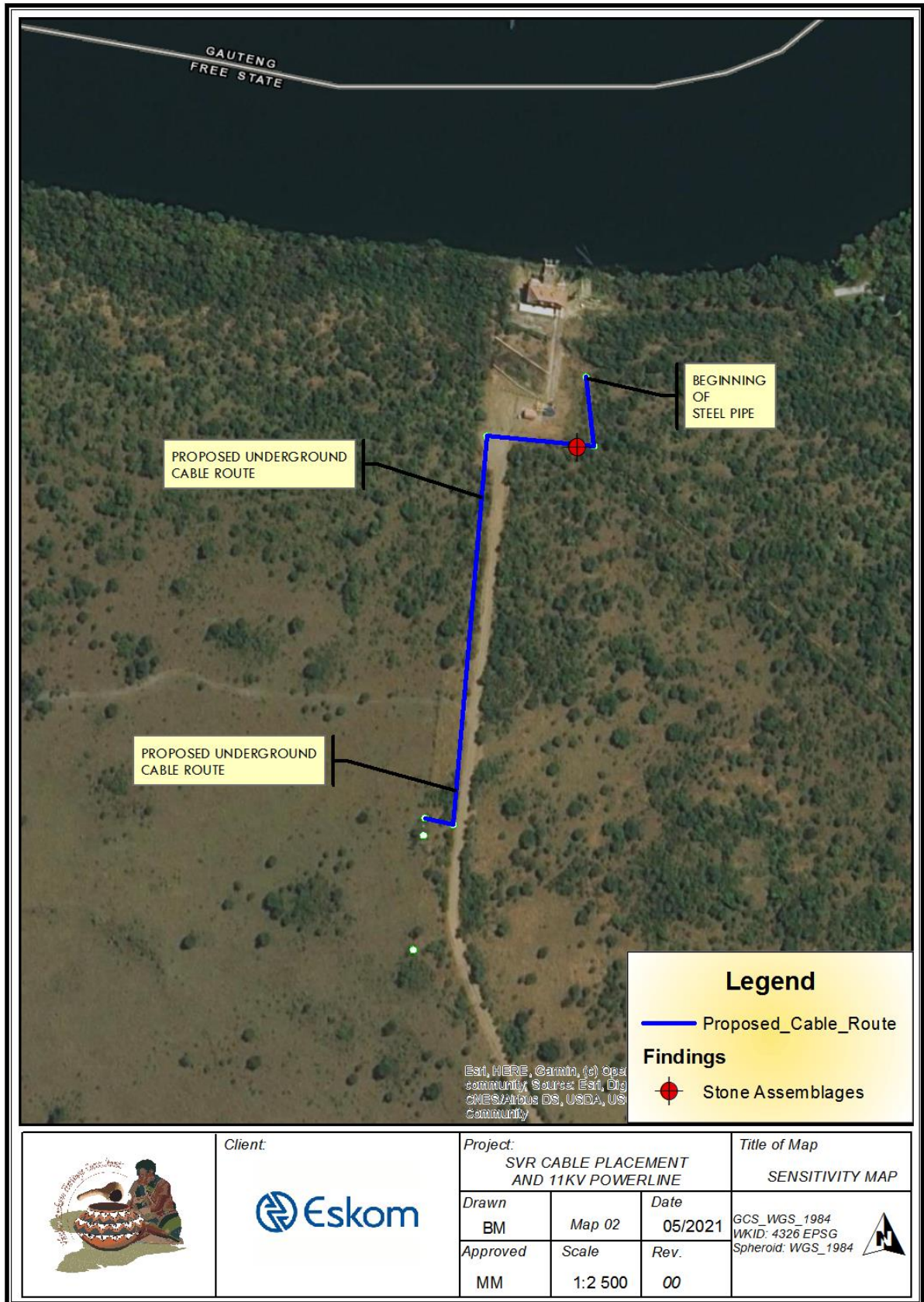


Figure 12: A view of the Marl Bank situated on the north east of the proposed development.



Proposed Eskom SVR cable reroute

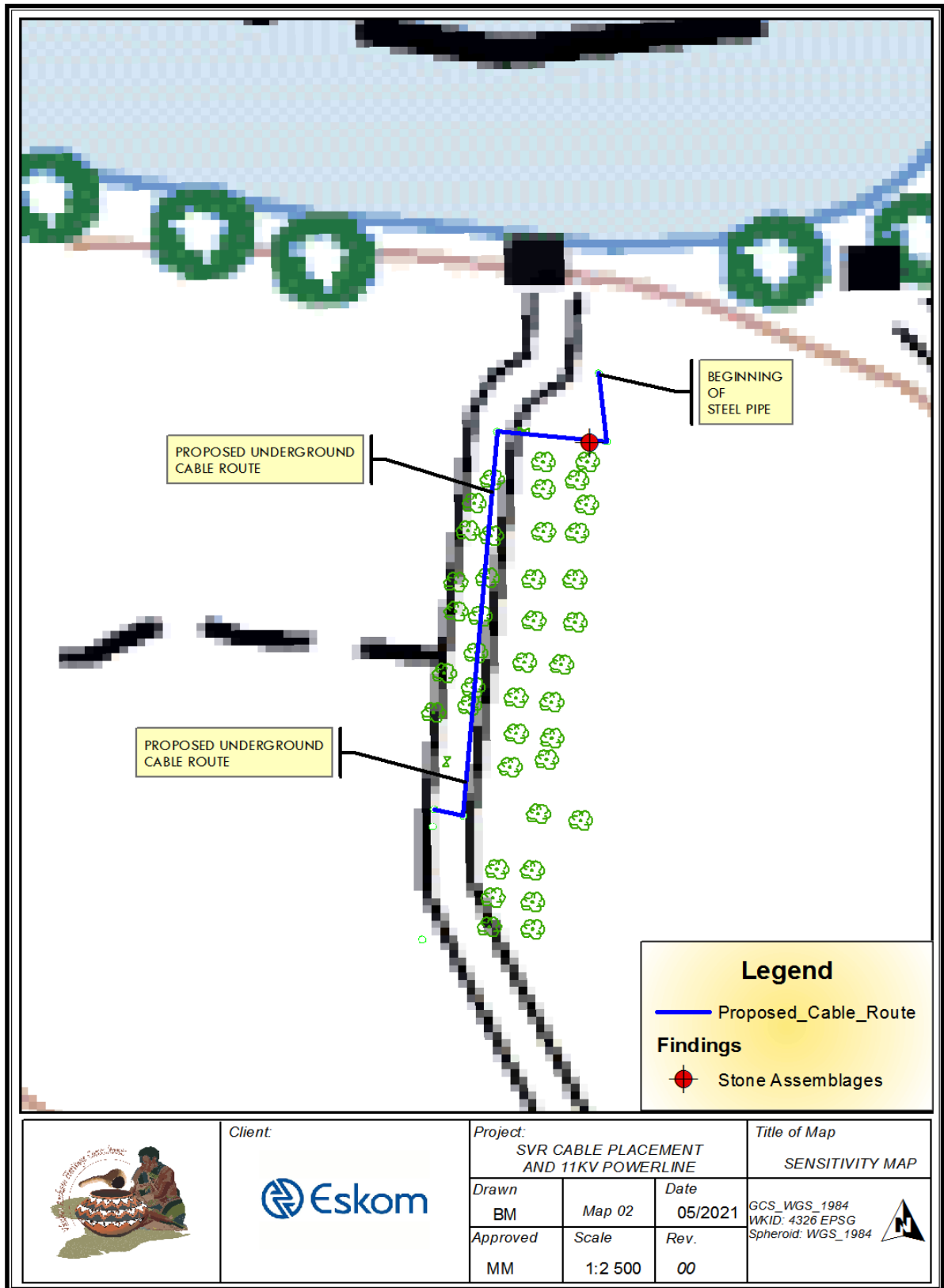


Figure 13: A view of the Marl Bank situated on the north east of the proposed development.



10. Recommendations

With the exception of the stone assemblage that have low significance as they are not associated with the historical or archaeological values the impact remains low. Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction (e. g. excavation), SAHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, 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.

Pre-construction education and awareness training

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 in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- ✚ Flaked stone tools, bone tools and loose pieces of flaked stone;
- ✚ Ash and charcoal;
- ✚ Bones and shell fragments;
- ✚ Artefacts (e.g., beads or hearths);
- ✚ Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

11. Conclusions

The planning of the proposed project can proceed on condition that the recommendations mentioned above are adhered to.



References

- Badenhorst, S. 2009. The Central Cattle pattern during the Iron Age of Southern Africa: A critique of its spatial features. *South African Archaeological Bulletin*, 195(190):148-155.
- Chazan, M., Ron, H., Matmon, A., Porat, N., Goldberg, P., Yates, R., Avery, M., Sumner, A., Horwitz, L.K. 2008. Radiometric dating of the Earlier Stone Age sequence in Excavation I at Wonderwerk Cave, South Africa: preliminary results. *Journal of Human Evolution*, 55: 1–11.
- Deacon H.J. & Deacon, J. 1963. Scott's Cave: a late Stone Age site in the Gamtoos Valley. *Annals of the Cape Provincial Museums* 3: 96–121.
- Deacon, J. 1972. Wilton: an assessment after fifty years. *South African Archaeological Bulletin* 27: 10–48.
- Deacon, J. 1982. The Later Stone Age in the southern Cape, South Africa. Unpublished PhD thesis. Cape Town: University of Cape Town.
- Herries, A.I.R. 2011. A chronological perspective on the Acheulian and its transition to the Middle Stone Age in southern Africa: the question of the Fauresmith. *International Journal of Evolutionary Biology*: 1–25.
- Huffman, T. N. 2001. The Central Cattle Pattern and interpreting the past. *Southern African Humanities*, 13: 19-35.
- Klein, G.R. 1979. Paleoenvironmental and Cultural Implications of Late Holocene Archaeological Faunas from the Orange Free State and North-Central Cape Province, South Africa. *The South African Archaeological Bulletin*, 34(129):34-49.
- Kuhn, B. F., Herries, A. I. R., Price, G. R., Baker, S. E., Hopley, P., Menter, C., & Caruana, M. V. 2016. Renewed investigations at Taung; 90 years after the discovery of *Australopithecus africanus*. *Palaeont. Afri*, 51:10-26.
- Kuman, K. 2007. The Earlier Stone Age in South Africa: site context and the influence of cave studies. In: Pickering, T.R., Schick, K. & Toth, N. (eds) *Breathing Life into Fossils: Taphonomic Studies in Honour of C.K. (Bob) Brain*: 181–198. Bloomington: Stone Age Institute Press.
- Lombard, M., Wadley, L., Deacon, J., Wurz, S., Parsons, I., Mohapi, M., Swart, J., & Mitchell, P. 2012. South African Age Sequence Update (I). *South African Archaeological Bulletin*, 67(195):120-144.
- Mazel, A.D. 1992. Collingham Shelter: the excavation of late Holocene deposits, Natal. South Africa. *Natal Museum Journal of Humanities*, 4:1–51.
- Pistorius, J. C. (2007). A Phase 1 Heritage Impact Assessment Study for water and sewage pipeline corridors near Vanderbijlpark in the Gauteng Province of South Africa. Pretoria: Unpublished report by JCC Pistorius on file at SAHRA as 2007-SAHRA-0358.



Proposed Eskom SVR cable reroute

Thackeray, J.F., Kirschvink, J.L. & Raub, T.D. 2002. Palaeomagnetic analyses of calcified deposits from the Plio-Pleistocene hominid site of Kromdraai, South Africa. *South African Journal of Science* 98: 537–540.

Thorp, C.R. 1996. A preliminary report on evidence of interaction between hunter-gatherers and farmers along a hypothesised frontier in the eastern Free State. *South African Archaeological Bulletin*, 51:57–63.

van Vollenhoven, A.C. 2020. A Report on a Heritage Impact Assessment of the Louw Wepener Memorial, Bethulie, Free State.

Wadley, L. 1993. The Pleistocene Later Stone Age south of the Limpopo River. *Journal of World Prehistory*, 7: 243–296.

Wadley, L. 1996a. Changes in the social relations of precolonial hunter-gatherers after agro-pastoralist contact: an example from the Magaliesberg, South Africa. *Journal of Anthropological Archaeology*, 15:205–217.

Wadley, L. 1996b. The Robberg Industry of Rose Cottage Cave, eastern Free State: the technology, spatial patterns and environment. *South African Archaeological Bulletin*, 51: 64–74.



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?



APPENDIX II: CHANCE FIND PROCEDURE

Purpose of ACFP

The aims of this ACFP are to protect previously unexposed heritage resources that are yet unknown although might be encountered during the project operation or construction phase. This document serves to provide best practices to manage accidental exposed heritage resource during the development. The procedures are given to the client/applicant/contracts in order to prevent and minimize negative impact on heritage resources encountered by accident. Thus, the heritage specialist(s) compiled this chance find document with a purpose to give instructions based on relevant and appropriate actions in line with the NHRA and best guidelines to protect the chance finds on the proposed site. In significant, the ACFP stand in place to promote the preservation of heritage resources and present mitigation measure to avoid disturbance on heritage resources.

ACFP for Heritage Resources

The following procedures must be followed when heritage resources are encountered during the operational or construction phase:

- All construction/clearance activities in the vicinity of the heritage resources found by accident on site must cease immediately to avoid further damage to the chance finds
- Immediately report the chance finds to the supervisor/site manager or if they are unavailable, report to the project Environmental Control Officer (ECO) who will provide further instructions.
- Record (note taking, photograph with a scale, GPS coordinates) of all the chance find exposed during the activity.
- All remains are to be stabilised in situ.
- Secure (e.g., barricade) the area to prevent further disturbance on heritage resources.
- The ECO must contact the qualified archaeologist registered with the association for Association for Southern African Professional Archaeologist (ASAPA) or South African Heritage Resources Agency (SAHRA).
- The project archaeologist will conduct the inspection and assess the significance of the chance finds under SAHRA guidelines, give recommendation and mitigation measures.



Proposed Eskom SVR cable reroute

