PHASE 1 ARCHAEOLOGICAL/HERITAGE IMPACT ASSESSMENT FOR WESTGATE SUBSTATION EXTENSION IN THE KAKGISO AREA OF MOGALE CITY LOCAL MUNICIPALITY IN GAUTENG PROVINCE

MARCH 2020

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Directors: ST Netshiozwi | C Monokofala | MS Masoga |

Email: info@kimopax.com | Website: www.kimopax.com

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Conducted on behalf of:

Contact Person:

Lindiwe Mbhele

MbheleLW@eskom.co.za

Compile by:

_____

Trust Mlilo

Reviewed by:

_____

Charles Chigurah (SACNASP; SACPCMP; SAIOSH & IWMSA)

Document History and Distribution List

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KIM-ENV-2019-65	March 2020	Rev0

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KIMOPAX (Pty) Ltd: CONTACT INFORMATION

Table 1: Kimopax Contact Information

COMPANY NAME:	Kimopax (Pty) Ltd
CONTACT DETAILS OF RESPONSIBLE PERSON WHO WILL ACT ON BEHALF OF THE COMPANY	
Name and Surname:	Charles Chigurah
Telephone number:	+27 11 312 9765
Fax number:	+27 11 312 9765
Cellular number:	+27 71 887 1394
e-Mail Address:	Charles@kimopax.com
ALTERNATIVE CONTACT DETAILS OF RESPONSIBLE PERSON WHO WILL ACT ON BEHALF OF THE PERSON ABOVE SHOULD NOT BE AVAILABLE:	
Name and Surname:	Simon Netshiozwi
Telephone number:	+27 11 312 9765
Fax number:	+27 11 312 9765
Cellular number:	+27 76 900 4772

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Westgate Substation Extension in Mogale City Municipality, Gauteng Province
Purpose of the study	Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the area demarcated for the proposed road upgrade.
1:50 000 Topographic Map	2528 CA
Coordinates	26°08'51.85"S 027°45'17.05"E.
Municipalities	Mogale City Municipality.
Predominant land use of surrounding area	Mining, Residential, substation and powerlines
Developer	Eskom
GDARD Ref No.	
Archaeologists/Heritage Practitioners	Kimopax (Pty) Ltd 547 16th Road, Building 3 Constantia Office Park, Midrand, 1685 Constantia Office Park, Midrand, 1685 Tel: 011 312 9765 Fax: 011 312 9768

	Cell :076 533 9125 Email:charles@kimopax.com
Contact Person	
Date of Report	20 February 2020

Eskom is expanding Westgate Substation near Kagiso in the Mogale City Local Municipality of West Rand District Municipality in Gauteng Province. During Geotechnical studies the teams exposed stone curns which resembled a traditional grave. The exposure of suspected grave triggered Section 36 of the National Heritage Resources Act 25 of 1999 and the Human Tissue Act. In addition, it was discovered that the expansion site encroaches a derelict farmstead with house foundations, livestock drinking trough and remains of perimeter wall/kraal. The ruined farmstead was confirmed to be older than 60 years and therefore protected by Section 34 of the NHRA (see Figure 9&10). Eskom commissioned a heritage study to confirm the status of heritage resources within the substation extension site (see Magoma 2018) and this report must be read in conjunction with the current report. In order to deal with the chance finds, Eskom commissioned Kimopax (Pty) Ltd to conduct a Phase 2 Heritage Mitigation for remains of heritage buildings and structures as well as suspected burial site. Kimopax team assessed the site in detail in preparation for demolition and burial permit applications. Our Engineer assessed the structural condition of the remaining structures and concluded that there are structurally unsound. The team observed that the suspected burial site is not likely a human burial, this observation concurs with Magoma (2018) who also expressed doubt about the status of the suspected burial site. However, as a precautionary measure it was agreed that we apply for a burial permit from SAHRA Burial Grounds and Graves Unit to check if indeed the curns could be a disturbed grave. This report serves to inform and guide Eskom and contractors about the impacts that the substation extension may have on heritage resources already identified and any other that may be lying beneath the ground or concealed by vegetation cover. In the same light, the document must also inform South African heritage authorities (SAHRA/PHRA-G) about the presence, absence and significance of heritage resources located in the study area. Our inquiry at PHRA-G suggested that we re-assess the site before submitting our application for demolition of remains of historic buildings and relocation of suspected grave. Desktop studies, drive-throughs and fieldwalking were conducted in order to identity heritage landmarks on and around the substation site. The ruined farmstead is in a poor state of

conservation and remaining standing walls were deemed to be of low heritage significance. It is the considered opinion of the author that the derelict farm buildings are not of any historical or architectural value to warrant preservation *in situ* or further assessment. However, these ruins may not be destroyed without a permit from PHRA-G. In addition, sub-surface archaeological material and unmarked graves may still exist and when encountered during construction, work must be stopped forth-with and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner (see Chance Find Procedure. This report must also be submitted to PHRA-G for review.

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 and National Heritage Resources Act 25 of 1999.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Mlilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.

Expertise:

Trust Mlilo, MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom) and several private companies such as BHP Billiton and Rhino Minerals.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and the survey was carried out under Eskom. Kimopax (Pty) Ltd has no any business,

personal, financial or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Kimopax (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Eskom. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA-G).

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and

Guidelines as to the authorisation of the demolition of derelict farm structures and relocation suspected grave.

Signed by

18/ 02/ 2020

Acknowledgements

The authors acknowledge Eskom for their assistance with project information, and responding to technical queries related to the project.

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Abbreviations

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age *(EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.)*
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
PHRA	Provincial Heritage Resource Agency

SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

Key concepts and terms

Periodization

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best-practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in

groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social or spiritual values for past, present or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

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

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

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

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

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 which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or '**project area'** refers to the area where the developer wants to focus its development activities (refer to plan).

Terminology

***Brickwor*k** is masonry produced by using bricks and mortar. The alignment of the brick with respect to the wall is described in various ways.

***Stretcher*:** A brick laid with its long narrow side exposed;

***Heade**r*: A brick laid flat with its width at the face of the wall, or parallel to the face of the wall.

Typically, rows of bricks, called courses, are laid on top of one another to build up a structure such as a brick wall. There are various ways in which the bricks can be arranged to build a wall:

English Bond involves alternating courses of stretchers and headers.

Flemish Bond involves alternating stretchers and headers in the same course with the headers centred over the stretchers in the course below.

There are many other permutations for the arrangement of bricks, for example American Bond may have from three to nine courses of stretchers between every course of headers. However, by the 1930s the preferred bond comprises only stretchers.

Brick sizes vary within a small range today. For example, in the United Kingdom, the usual size of a modern brick is 215 × 102.5 × 65 mm whereas in South African the usual size of a modern brick is 222 × 106 × 73 mm. However, bricks ranged considerably in the past, as they were made by private individuals in country locations without the benefit of a standardised template

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground

level. Should artefacts or skeletal material be revealed within the substation site during construction, such activities should be halted immediately, and a competent heritage practitioner, SAHRA or PHRA-G must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt Eskom from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Kimopax assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

1 TERMS OF REFERENCE (TOR)

The author was requested by Eskom to:

a) Assess archaeological and heritage potential of the proposed substation extension;
b) Design feasible heritage mitigation measures for heritage resources recorded at the substation site.
c) Apply for a demolition permit for derelict buildings and structures which are older than 60 years.
d) Apply for a burial permit for the suspected grave recorded at the substation extension site.
e) Provide details on methods of study; potential and recommendations to guide the PHRA-G/ SAHRA to make an informed decision in respect of authorisation of the demolition of recorded buildings and structures.
f) Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located along the proposed development site;
g) Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
h) Describe the possible impact of the substation extension on these cultural remains, according to a standard set of conventions;
i) Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
j) Review applicable legislative requirements;

1.1 Introduction

Kimopax (Pty) Ltd was commissioned by Eskom to carry out a Phase 2 Heritage Mitigation for heritage resources discovered at the Westgate Substation site. This study was triggered by the existence of ruined buildings and structures within the approved substation expansion site. The affected ruined structures are older than 60 years and therefore protected by Section 34 of the NHRA while the suspected burial is protected by Section 36 of

the NHRA and the Human Tissue Act which protects graves and burial grounds as well as human remains. As prescribed by SAHRA and stipulated by legislation, an AIA/HIA is a pre-requisite for submission of mitigation permits. The overall purpose of this heritage report is to identify and assess any heritage resources that may be located in the study area and evaluate the positive and negative impacts of the substation extension on protected heritage resources in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Magoma (2018) was the basis our desktop review. Desktop studies revealed consultations revealed that the farm was abandoned long back and we know that there is a retired former Eskom employee who may have information about the past farm owners and heritage character of the site. Efforts to contact him were hampered by the Corona virus scare. Our inquiry about potential graves associated with the ruined farmstead did not yield and information or leads. It was therefore assumed that the farm owners might have buried their deceased family members in municipality cemeteries. We therefore recommend that the proposed demolition of ruined building be permitted by PHRA-G as planned.

2 PROJECT LOCATION

The Westgate substation is located at GPS Coordinates 26°08'51.85"S 027°45'17.05"E in the Mogale City local Municipality of Gauteng Province.

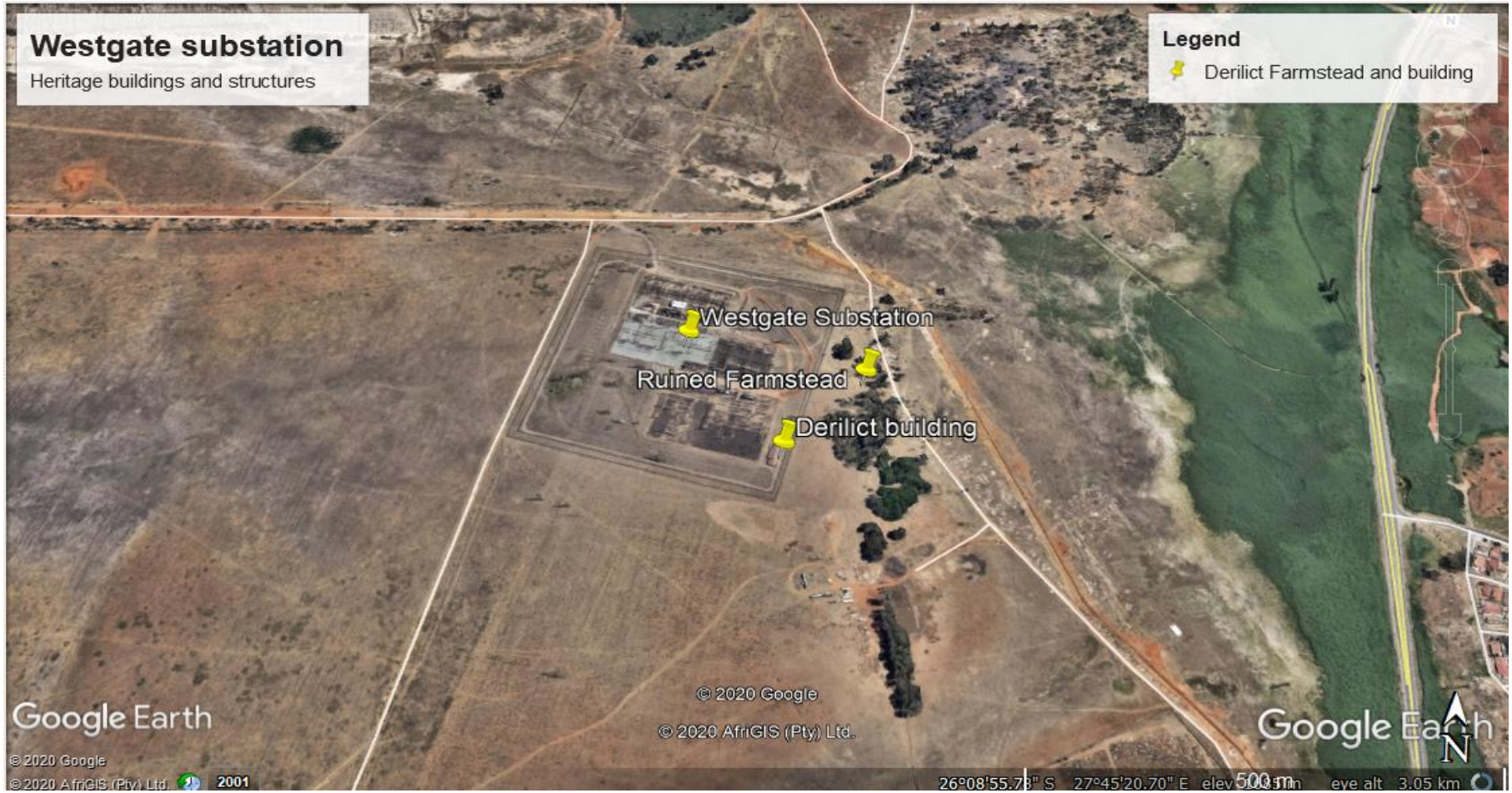

Figure 1: Location of Westgate substation.

3 PROJECT BACKGROUND AND DESCRIPTION

The Westgate substation extension was approved, however during geotechnical studies for the development construction workers exposed stone packs suspected to be a human burial. Eskom commissioned a heritage study (Magoma 2018) to assess the accidental find. The study expressed doubt over the status of the stone curns. The study went on to record remains of historic buildings which in accordance to Section 34 of the NHRA must not be destroyed without a demolition permit from PHRA-G. It is against this background that Eskom appointed Kimopax to conduct Phase 2 heritage mitigation for the ruined farm buildings and structures as well as the suspected grave. This current study intends to confirm the status of the recorded heritage resources and assess the significance of ruined structures before submitting an application for demolition and possible relocation.

4 LEGISLATIVE CONTEXT

Two main pieces of legislations are relevant to the present study and there are presented here. Under the National Heritage Resources Act (Act 25 of 1999) (NHRA) and the National Environmental Management Act (NEMA), an AIA or HIA is required as a specialist sub-section of the EIA.

Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its PHRAs. There are different sections of the NHRA that are relevant to this study. The present proposed development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require an HIA to be conducted by an independent heritage management consultant:

a) Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length
b) Construction of bridge or similar structure exceeding 50m in length
c) Development or other activity that will change the character of a site -
    - Exceeding 5000 sq m
    - Involving three or more existing erven or subdivisions
    - Involving three or more erven or divisions that have been consolidated within past five years
    - Rezoning of site exceeding 10 000 sq m
    - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
d) Any other development category, public open space, squares, parks, recreation grounds

Thus any person undertaking any development in the above categories, 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. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies

(SAHRA/PHRAs). Because, the substation extension will affect derelict farmstead and suspected grave, then an HIA is required according to this section of act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may **alter damage, destroy and relocate any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority**. The substation extension triggers Section 34 of the NHRA since remains of historic farmstead were identified within the development site. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA-G, who will assist in investigating the extent and significance of the finds and inform about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. This section may apply in case of the discovery of chance burials and the suspected grave already noted. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the developer or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed project.

In addition, the new EIA Regulations (04 December 2014) promulgated in terms of NEMA (Act 107 of 1998) determine that any environmental reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert Eskom, SAHRA and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to

recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

Table 2: ***Evaluation of the proposed development as guided by the criteria in NHRA and NEMA***

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq m	No
	Development involving three or more existing erven or subdivisions	No
	Development involving three or more erven or divisions that have been consolidated within past five years	No
	Rezoning of site exceeding 10 000 sq m	Not available
	Any other development category, public open space, squares, parks, recreation grounds	Yes
NHRA Section 34	Impacts on buildings and structures older than 60 years	Ruined buildings and structures recorded
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1

NHRA Section 36	Impacts on graves	One suspected grave recorded
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required for mitigation	Yes

5 METHODOLOGY

The document aims at providing an informed heritage-related opinion about the significance of ruined buildings and structures identified by Magoma (2018) and design suitable mitigation as well as applying for destruction permits. This is usually achieved through a combination of a review of any existing literature (Magoma 2018) and a basic site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites and features of cultural significance on the development footprint. Initially a drive-through was undertaken around the substation site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a hand held Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the substation expansion in order to suggest further mitigation action. The result of this investigation is a report indicating the status of heritage resources and how to manage their mitigation without disrupting the construction schedule.

5.1 The Fieldwork Survey

The fieldwork survey was undertaken in February 2020. The main focus of the survey involved a pedestrian survey which was conducted in and around the substation site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller that the surrounding grass veld; the presence of exotic trees; evidence for building rubble, and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern infrastructure developments; the general area where the substation development is located would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study

area now lies on a clearly modified landscape that has previously been cleared of vegetation but is now dominated by a continuous sweep of tall grass and blue gum trees that limit ground visibility (Plates 1-9).

5.2 Visibility and Constraints

The project site is characterised by over grown grass and blue gum trees which made it difficult to map the ruined structures and potential graves. In addition, due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area. As such the chance find procedure apply.

5.3 Consultations

Kimopax study team consulted PHRA-G officials who suggested that regardless of the ruined nature of the buildings and structures on site, we must advertise in a local newspaper and place on site notices in accordance with the NHRA. They advised that application will not be processed without proof of adverts and public participation. We consulted Eskom employees at Westgate substation and they referred us to a retired former Eskom employee who might have vital information about the farm in question. However, our consultation process was disturbed by the Corona Virus scare. We failed to obtain the farm book at the National Archives, therefore there is limited information about the abandoned farmstead. During our consultation with people around the site we realised that most people do not care about ruined structures because they do not relate or connect to the site. Some said those structures remind them of the hush realities of the apartheid past. Consultation is on going and we are ready to receive issues and concerns from interested and affected parties.

The following photographs illuminate the nature and character of the Project Area.

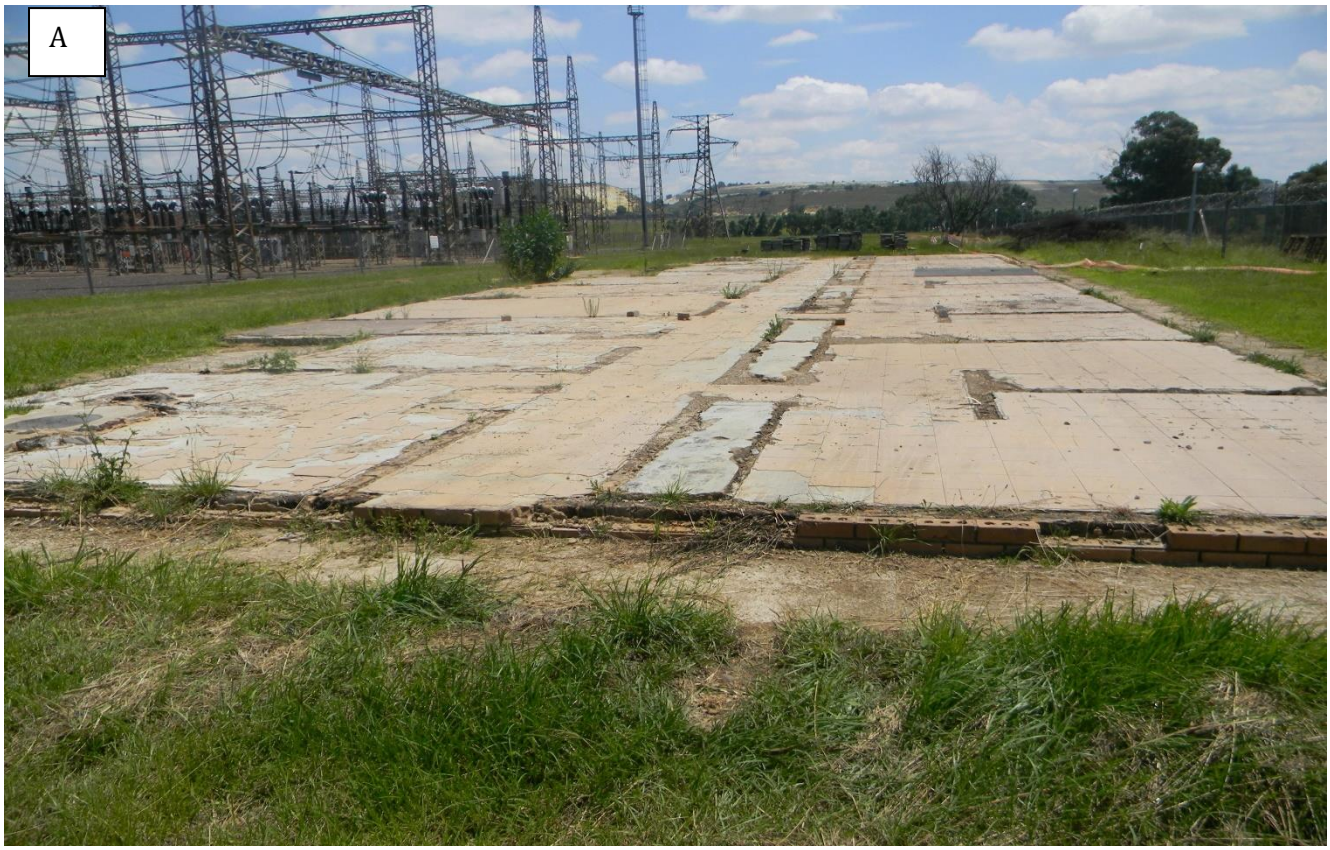

Plate 1: Photo **A**. showing remains of house foundation and floors..

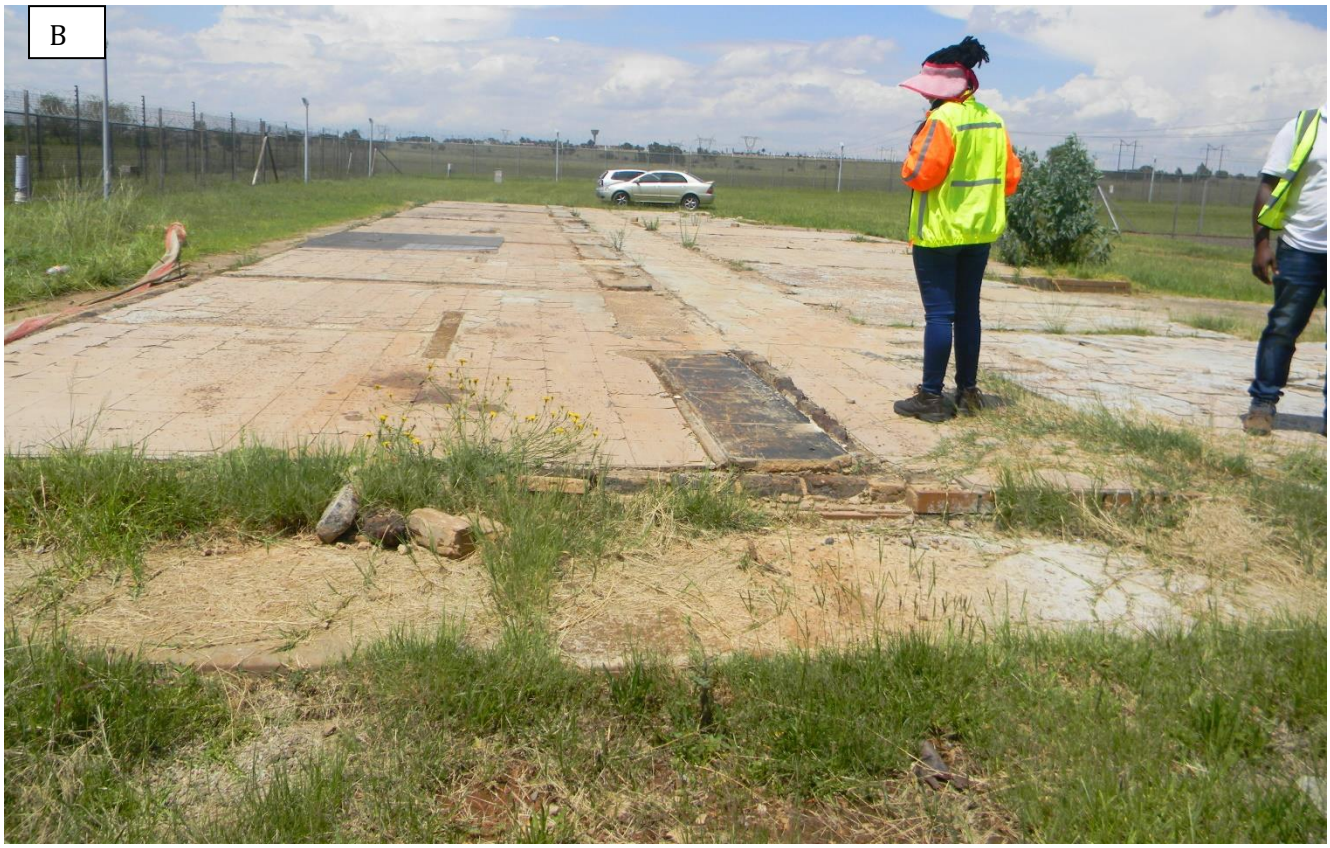

Plate 2: Photo **B**. showing Eskom and Kimopax officials inspecting the derilict house.

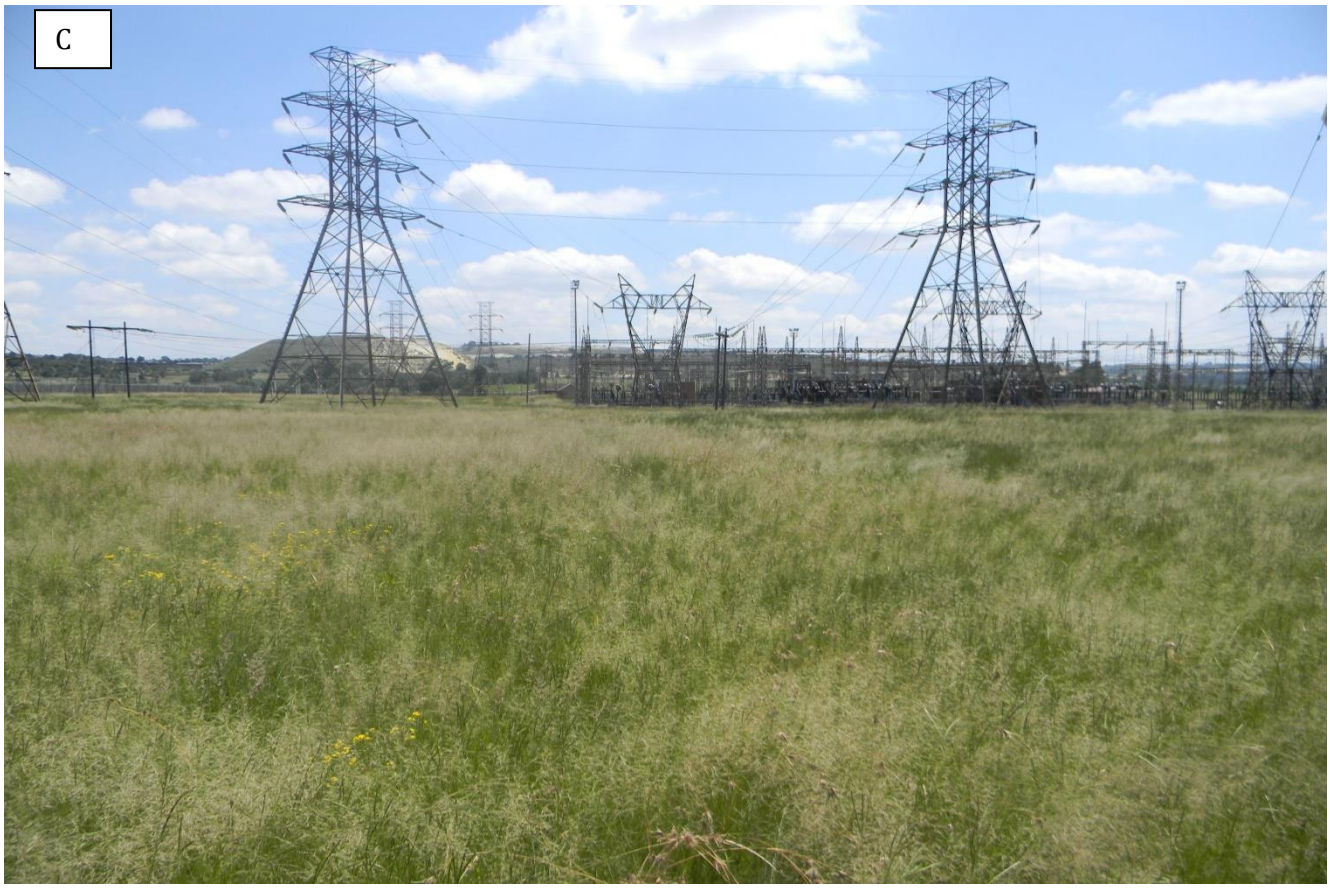

Plate 3: Photo **C**. showing the Westgate substation site earmarked for expansion..

Plate 4: Photo **D** showing remains of a house foundation.Note that visibility of the ruined building was compromised by overgrown vegetation.

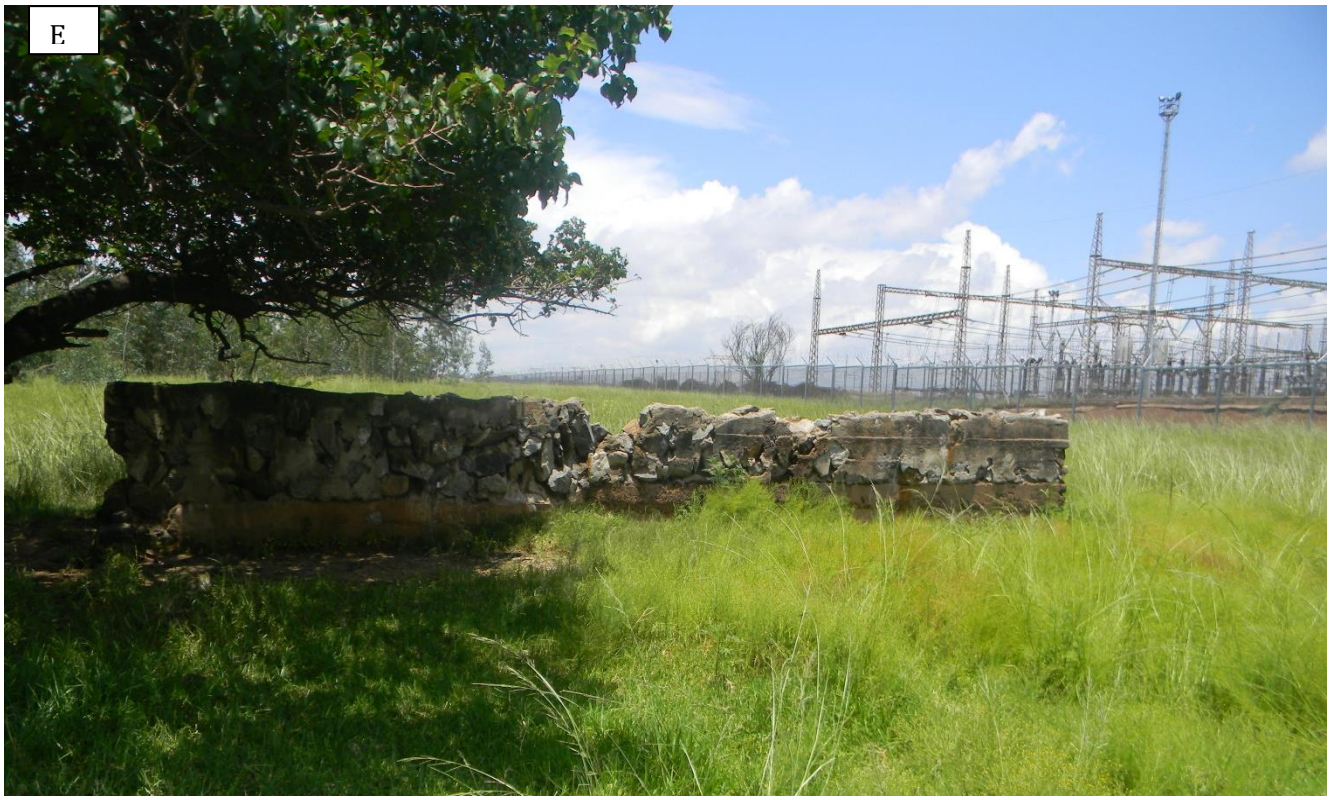

Plate 5: Photo **E**. showing remains of a stone mansonry perimeter wall/ cattle kraal.

Plate 6: Photo **F** showing remains of permeter wall/kraal with signs of collapsing.

Plate 7: Photo **G**, showing surviving section of perimeter wall.

Plate 8: Photo **H**, showing surviving section of perimeter wall.

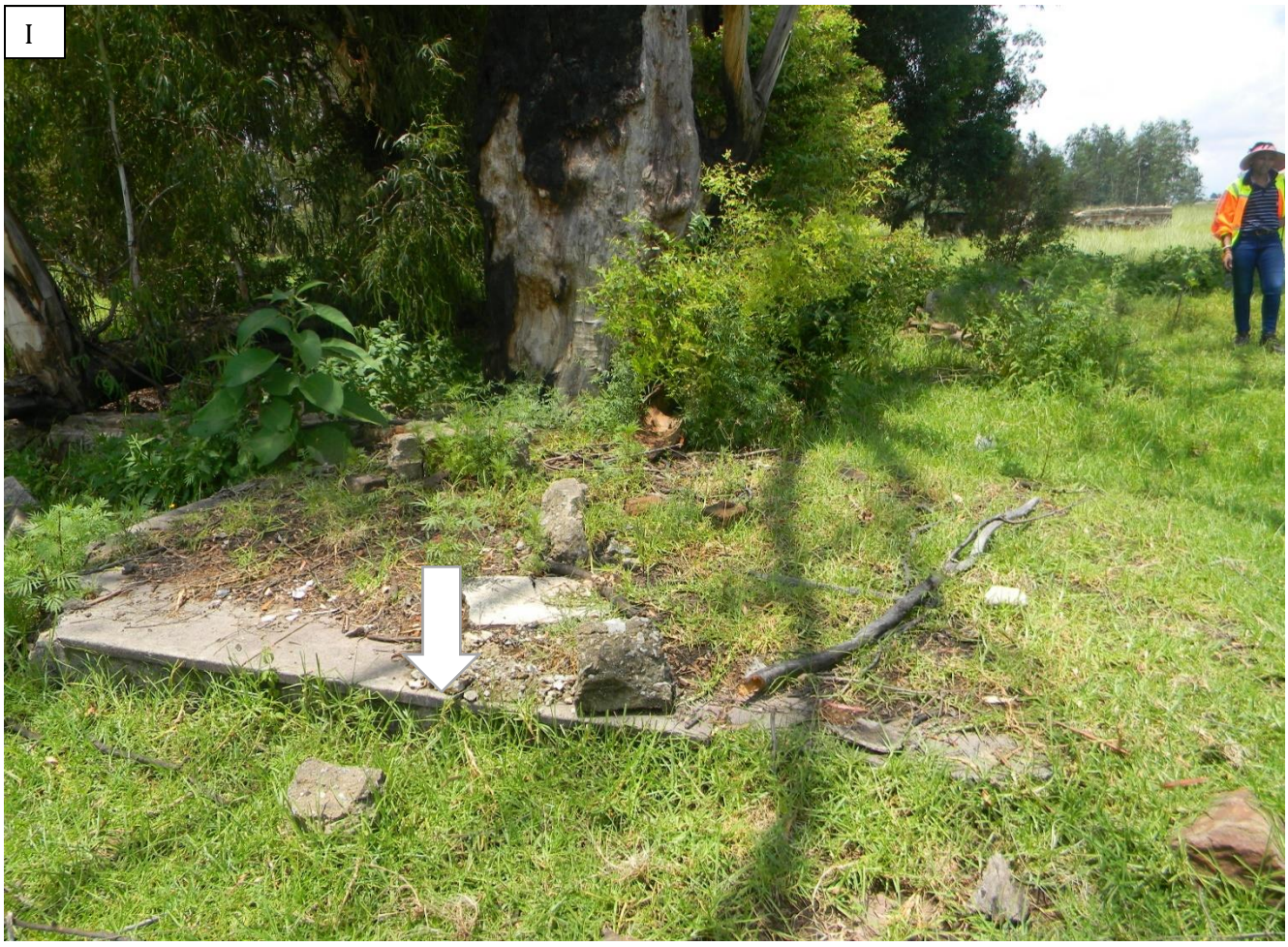

Plate 9: Photo **I**, showing remains of a house foundation and floor.Note that it looks like the house foundation is older than trees growing on the edges.

Plate 10: Photo **J**, showing overgrown vegetation that affected remains of house foundation and floors.

Plate 11: Photo **K**, showing a concrete livestock drinking trough.

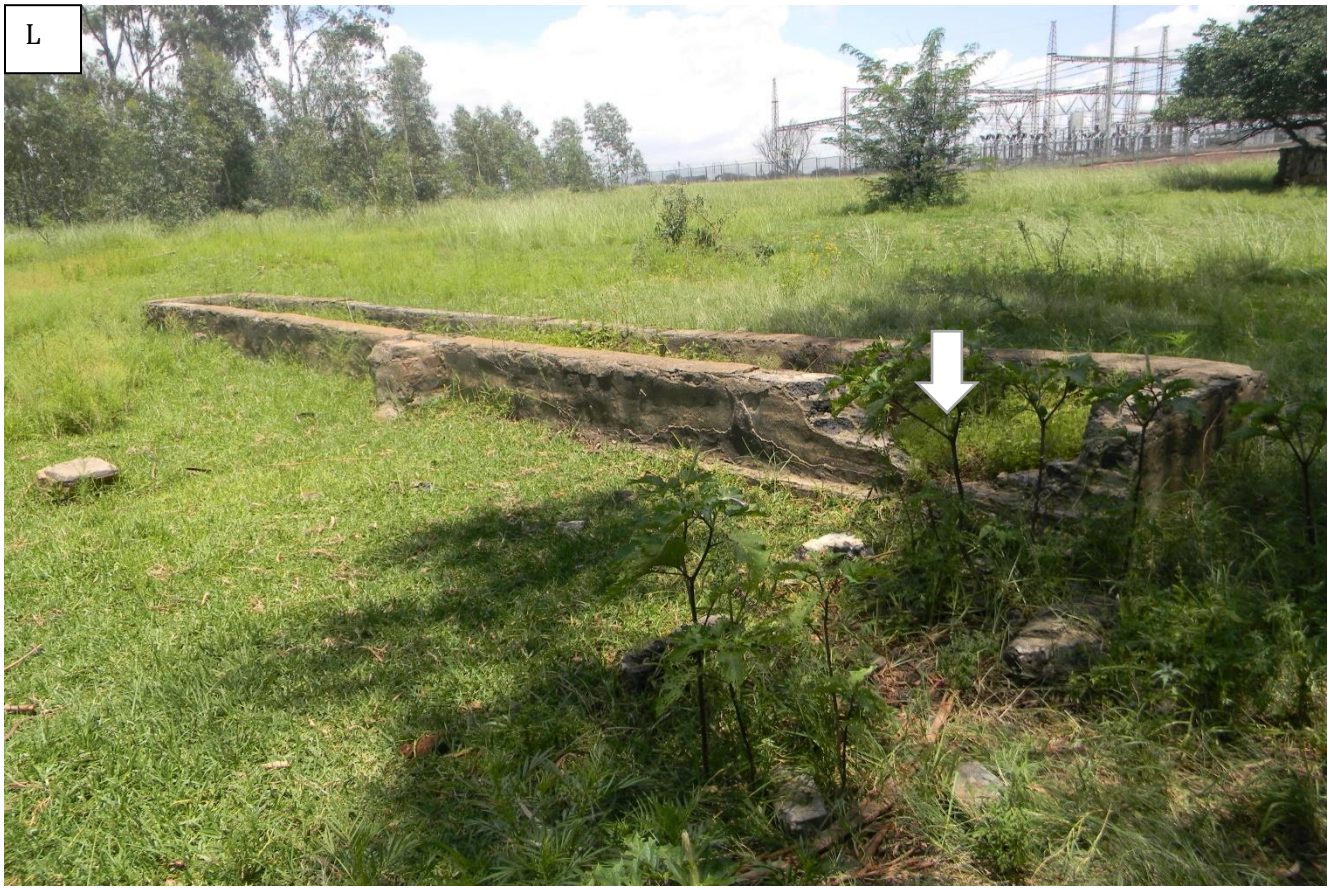

Plate 12: Photo **L**, showing partially vandalised wall of the livestock drinking trough.

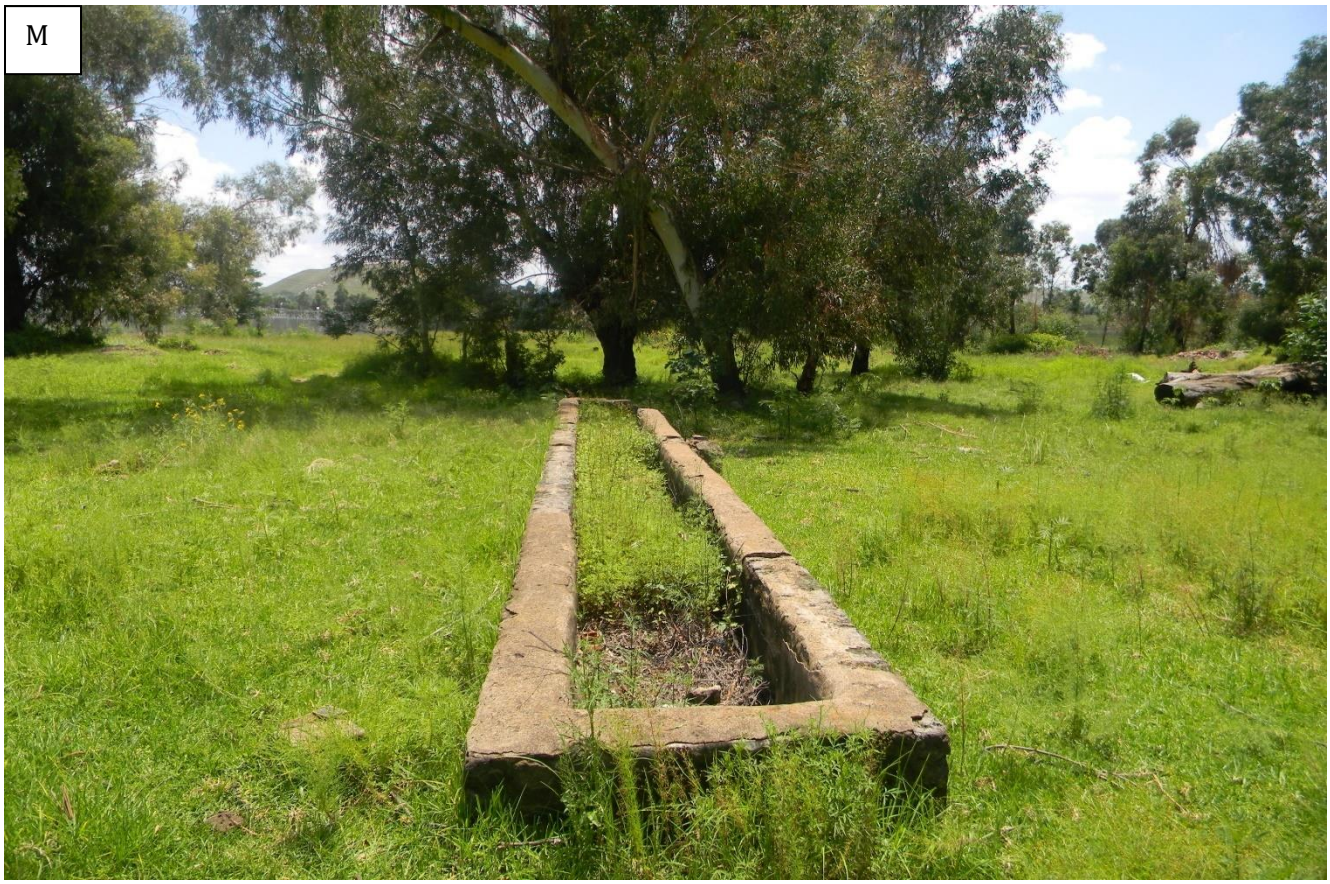

Plate 13: Photo **M**, showing closer view of drinking trough.

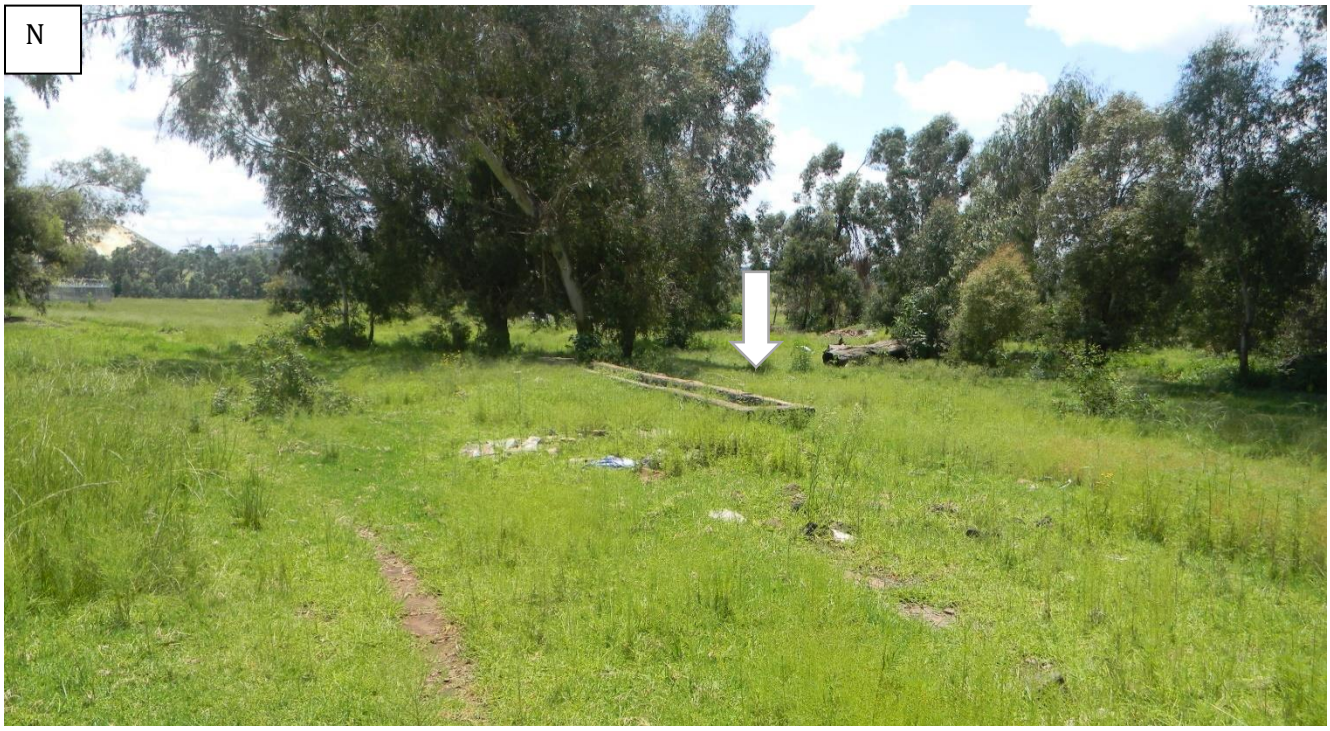

Plate 14: Photo **N**, showing drinking trough seen from a distance.

Plate 15: Photo **O**, showing blue gum lining usual meant for wind brake or farm boundaries.

6 ARCHAEOLOGICAL AND HISTORICAL CONTEXT

The project is located at Westgate Substation near Randfontein in the Mogale City Local Municipalities of Gauteng Province. The study area is highly transformed by mining, agriculture activities, formal and informal human habitation, Power line, railway line and roads typical of Gauteng Province. Randfontein is a gold mining town in western Gauteng, South Africa, 45km west of Johannesburg. Randfontein as a settlement area dates back to the 1550s when the AmaNdebele lived as one nation at Emhlangeni (translated today into the Sesotho language as Mohlakeng, one of the south-eastern suburbs of Randfontein) under King Mhlanga around 1550-1580 (cpfrandfontein.co.za). In 1857 earliest settlers, such as the Bootha and Jonker families arrived in the area.

Randfontein has a rich gold mining history. Henry Lewis, an Australian prospector, discovered gold in Blaauwbank stream near Magaliesburg in 1874. Discovery of gold on the Rand by Harrison and Walker led to the Reef gold rush in 1886. Mining financier J B Robinson bought the farm Randfontein and, in 1889, registered the Randfontein Estates Gold Mining Company. The town was established in 1890 to serve the new mine and was administered by Krugersdorp Municipality until it became a municipality in 1929. The first shop in Randfontein, Fedlers, opened in 1894. As of 2007, Randfontein has a population of 128,731, which incorporates Mohlakeng and Toekomsrus. Randfontein Estates had the largest stamp mill in the world, with 600 stamps.

Gauteng area has yielded evidence of human settlement extending into hundreds of thousands of years of prehistory that include the Stone Age, Iron Age, Historical period and contemporary communities. The palaeontological human-evolution record is reach in palaeoanthropological relics that were found in Stekfontein and Maropeng areas that have been dubbed the Cradle of Mankind that is also a World Heritage Site. Although there are no well-known Stone Age sites located in the Tarlton-Randfontein area there is evidence of the use of the larger area by Stone Age communities for example along the Kliprivier where ESA and MSA tools were recorded. LSA material is recorded along ridges to the south of the current study area (Huffman 2008). Petroglyphs occur at Redan as well as along the Vaal River (Berg 1999).

Iron Age sites associated with the ancestors of the modern Sotho-Tswana and Ndebele speaking communities are wide spread in the region. In recent colonial history, the area played host to different competing local settler communities. The area was a scene of series of colonial wars. By the end of the 19th century, the region was placed under British rule and the local people displaced. Today most of the land is used for commercial, mining, agricultural and industrial activities. It is within this cultural landscape that the project area is located. Archaeologically, the Gauteng (Randfontein area) is associated with Late Iron Age Sotho-Tswana communities and has yielded four ceramic sequences of the Urehwe tradition: Ntsuanatsatsi (1450-1650), Olifantspoort (AD 1500 -1700), Uitkomst (AD 1700-1850) and Buispoort (1700-1840) [Huffman 2007: 443). This area was historically occupied by predominantly Sotho-Tswana -speaking groups before Mzilikazi's Ndebele briefly dominated during the Mfecane. Around the 1830s, the region also witnessed the massive movements associated with the Mfecane ('wandering hordes'). The causes

and consequences of the Mfecane are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988). The area was partitioned into commercial settler farms during the colonial period.

Melville Koppies is the most well documented site in the project area. The site was excavated by Professor Mason from the Department of Archaeology of the Witwatersrand University in the 1980's. Extensive Stone walled sites are also recorded at Klipriviers Berg Nature reserve belonging to the Late Iron Age period. A large body of research is available on this area. These sites (Taylor's Type N, Mason's Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007). These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites date back to the 18th and 19th centuries and were built by people in the Fokeng cluster.

In this area, the Klipriviersberg walling probably ended around AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi. Prior to the Gauteng region being incorporated into the colonial administration of the Transvaal, the region experienced several episodes of white settler migration and settler settlements as well as the associated colonial wars such as the Anglo-Boer War, which ended in 1902. Today the project area is predominantly mining and commercial farming.

6.1 Historic Culture

The Anglo –Boer wars of 1899-1902 had their footprint in the Randfontein area. For example, the Jameson Raid Site is within the 10km radius of the Power line development area (Van der Walt 2015). This effectively led to complete subjugation of African communities to settler administration starting as part of the ZAR of Transvaal. Most of the mining infrastructure in the Randfontein area is older than 60 years. These appear on the 1944 version of the 1:50 000 topo cadastral map (SAHRIS). Some abandoned mine structures which are semi-circular in shape were recorded in the project area (Van der Walt 2015). There after the region was subsequently annexed by the British and effectively placed the majority of African communities under the Union

of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994.

6.2 Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage remains because no historically known groups occupied the study area and most of the original settler descendants moved away from the area.

6.3 SAHRIS Data Base and Impact Assessment Reports in the project area

Several AIA/HIA studies were conducted in the project area. The studies include powerline, substation and mining projects completed by Pelser (2007), Van Sschalkwyk (2007, 2008, 2013, 2014), Pistorius, J.C.C. & Miller, S. (2011), Tomose (2015), Kusel (2005, 2006, 2008, 2011, 2012), Birkholtz (2007) and Mlilo 2018a, 2018b. The studies confirm the occurrence of several stone walled Late Iron Age sites in the project area. A search on the SAHRIS data base confirmed that several sites have been rescued or destroyed by infrastructure developments residential and agriculture. The reports also mention the existence of structures older than 60 years and traditional burial sites in the project area but none will be affected by the proposed development project.

7 RESULTS OF THE FIELD STUDY

7.1 Archaeology

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried

archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The severe impacts are likely to occur during clearance and digging for foundations, indirect impacts may occur during movement of construction vehicles. The excavation for foundations and fence line posts will result in the relocation or destruction of all existing surface heritage material. Similarly, the clearing of access roads will impact material that lies buried in the surface sand. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to construction. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed pipeline route. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during construction. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be negligible since sections of the site has previously been disturbed by previous construction activities. The following section presents results of the archaeological and heritage survey conducted within the Westgate substation site.

Several LIA stone walled settlements were previously recorded in the general project area. The area north west of Gauteng is known for its archaeological stone walled sites. Although the project area is heavily degraded from previous and current land use such as agriculture, mining, powerlines, road network and from property developments there is an increased likelihood of finding archaeological remains buried beneath the ground. It is the considered opinion of the author that the chances of recovering significant archaeological materials is low to moderate along the proposed pipeline route.

Based on the field study results and field observations, the author concluded that the receiving environment for the proposed development is low to medium potential to yield previously unidentified archaeological sites during subsurface excavations and construction work associated with the proposed development. Literature review also revealed that no Stone Age sites are shown

on a map contained in a historical atlas of this area. This however should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

7.2 Burial grounds and Graves

Human remains and burials are commonly found close to archaeological and historical sites; they may be found in abandoned and neglected burial sites, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually identified when they are exposed through erosion or geotechnical studies as the case with the Westgate Substation suspected grave . In some instances, packed stones or rocks may indicate the presence of informal pre-colonial burials. If any human bones are found during the course of construction work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500).

The field survey did not record any confirmable burial site or graves other than the suspected stones curns which resemble a disturbed traditional grave (see Magoma 2018). Based on the location of the suspected burial, it is unlikely that settler farmers buried their deceased relatives barely a metre from a building. Magoma (2018) also doubted the status of the suspected burial. Burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Therefore, we recommend that the suspected grave be treated as a grave. As such formal procedures must be followed to obtain burial permits. All the people who were consulted during the second visit to the site do not know anything about any graves potentially located at the site. The suspected grave is protected by the NHRA until proven otherwise, therefore the suspected grave must not be disturbed without a permit from SHARA. It is also important to note that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified

burial sites is low at the site, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected.

7.3 Public Monuments and Memorials

No public memorials and monuments were recorded within the Westgate substation site.

7.4 Buildings and Structures

The study confirmed a ruined farmstead previously recorded by Magoma (2018). Remains of house foundations, floors and farm structures were recorded at the substation site. Noted within the study site were remains of a ruined farmstead with derelict farm structures and buildings and are in no state to salvage since only the concrete slab remains and the prized pre- colonial and colonial architecture of the structures has been demolished. The remains of structures and farm buildings are in a poor state of conservation, the majority of structures that made up the farmstead were completely destroyed. The study also noted a structure that had only the foundation left and the intended use/purpose of the structure could not be determined since only the masonry foundation was the only identifiable feature (see Photos 9 & 10). A concrete feeding trough was also noted within the study site, the structure is 12m long and was built using masonry and concrete and the building material is typical of pre-colonial and colonial farming (see Photo 11, 12, 13 &14) also in the vicinity of the concrete trough was also a masonry boundary wall 1.2 m high and 8m in length and could have covered the whole area of the farm but now only a crumbling few metres remains and this is crumbling is due to settlement and the invasion of plant roots within the cracks (see Photos 5, 6, 7&8). Treescapes were also recorded within the project site and these provide the confirmation that the project area was a farmstead (see Photo 15). From a structural and architectural point of view the remains of farm structures and buildings are of low significance and are typical of farm structures found in farmlands across the country. The structures are not unique and the majority of buildings and structures are derelict due to collapse, vegetation overgrowth and years of abandonment. Due to the poor state of conservation and low heritage significance attributed to the structures, the derelict structures were considered as not worth preserving in situ. However, since the derelict buildings were confirmed to be older than 60 years they therefore qualify for protection under Section 34 of the NHRA which stipulates that

buildings and structures older than 60 years must not be destroyed or altered without a permit from PHRA. The ruined buildings and structures were deemed to be of low significance to warrant any further assessment or protection under the said legislation. It is the considered opinion of the author that the structures can be destroyed to give way for Westgate Substation extension subject to obtaining a demolition permit from PHRA-G

7.5 Assessment of construction impacts

An impact can be defined as any change in the physical-chemical, biological, cultural and/or socio-economic environmental system that can be attributed to human activities related to the road upgrade and site under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be determined through a synthesis of the criteria below:

Probability: This describes the likelihood of the impact actually occurring

Improbable: The possibility of the impact occurring is very low, due to the circumstances, design or experience.

Probable: There is a probability that the impact will occur to the extent that provision must be made therefore.

Highly Probable: It is most likely that the impact will occur at some stage of the development.

Definite: The impact will take place regardless of any prevention plans and there can only be relied on mitigatory measures or contingency plans to contain the effect.

Duration: The lifetime of the impact

Short Term: The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.

Medium Term: The impact will last up to the end of the phases, where after it will be negated.

Long Term: The impact will last for the entire operational phase of the mine but will be mitigated by direct human action or by natural processes thereafter.

Permanent: The impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: The physical and spatial size of the impact

Local: The impacted area extends only as far as the activity, e.g. footprint

Site: The impact could affect the whole, or a measurable portion of the above-mentioned properties.

Regional: The impact could affect the area including the neighboring residential areas.

Magnitude/ Severity: Does the impact destroy the environment, or alter its function

Low: The impact alters the affected environment in such a way that natural processes are not affected.

Medium: The affected environment is altered, but functions and processes continue in a modified way.

High: Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This 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.

Negligible: The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

Low: The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.

Moderate: The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.

High: The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

Table 3: The following weights were assigned to each attribute:

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

	Moderate	**>40 ≤60**
	High	**>60**

The significance of each activity should be rated without mitigation measures (WOM) and with mitigation (WM) measures for both construction, operational and closure phases of the proposed development

Table 4: Impact Assessment Matrix

Westgate Substation								
Nature of Impact	**Management Measures**	**Duration**	**Scale**	**Magnitude/ Severity**	**Probability**	**Calculations** **Sum (Duration, Scale, Magnitude) x Probability**	**Proposed Management Measures**	**Significance**
Archaeological Remains	Without management	3	3	6	2	(3+3+6) x 2=**24**	No confirmable archaeological remains were identified within the substation site.	Low to medium
	With management	3	2	2	2	(3+2+2) x 2=**14**	No archaeological remains were recorded within the substation site. However, the chance find procedure applies.	Low to medium
Graves and Burial Grounds	Without management	3	3	1	4	(3+3+1) x 4=**28**	One suspected grave was recorded.	Low
	With management	3	3	1	2	(3+3+1) x 2=**14**	Mitigation is required. A burial permit is required verify the status of the suspected burial	Negligible

Westgate Substation								
Nature of Impact	**Management Measures**	**Duration**	**Scale**	**Magnitude/ Severity**	**Probability**	**Calculations** **Sum (Duration, Scale, Magnitude) x Probability**	**Proposed Management Measures**	**Significance**
Historical buildings and structures	Without management	3	3	6	3	(3+3+6) x 3=36	The is a ruined farmstead with derelict buildings and structures	Negligible
	With management	3	3	2	2	(3+3+2) x 2=16	Mitigation is required. A demolition permit is required to destroy the remaining walls of derelict structures	Negligible
Mining Heritage	Without management	3	3	1	4	(3+3+1) x 4=28	No traces of historical mining in the mining site. Mitigation not required	Negligible
	With management	3	2	1	2	(3+2+1) x 2=12	No traces of historical mining in mining site. Mitigation not required	Negligible
Public Monuments and memorials	Without management	3	3	1	1	(3+3+1) x 1=7	None recorded within the road upgrade and borrow pit site Mitigation not required	Negligible

Westgate Substation								
Nature of Impact	**Management Measures**	**Duration**	**Scale**	**Magnitude/ Severity**	**Probability**	**Calculations** **Sum (Duration, Scale, Magnitude) x Probability**	**Proposed Management Measures**	**Significance**
	With management	1	3	1	1	(1+3+1) x 1=5	Induct construction workers and mark any memorials and plaques	Negligible
Natural Heritage	Without management	3	3	6	2	(3+3+6) x 2=36	None recorded within the site. Mitigation not required	Low
	Without management	3	2	2	2	(3+2+2) x 2=14	Mitigation not required	Negligible

Based on the impact rating, the main impact will be on the recorded buildings and structures as well as heritage resources buried beneath the surface. Although the potential of encountering significant heritage resources during construction, these are covered by the appended Chance Find Procedure. A burial permit is required before construction of the substation. A demolition permit is required to destroy remains of buildings and structures which are on the direct footprint of the substation extension project. The derelict buildings and structures cannot be avoided..

7.6 Cumulative Impacts

The European Union Guidelines define cumulative impacts as: "Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed development is considered the total impact associated with the proposed development when combined with other past, present, and reasonably foreseeable future developments projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this proposed development was undertaken during the preparation of this report. The total impact arising from the proposed project (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated. The impacts of the proposed development were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation, this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments, including residential, road networks, commercial infrastructure where baselines have already been affected, the substation expansion will add to the existing impacts in the project area. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during construction phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the current development and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves and archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. Furthermore, many heritage resources in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when

grass cover is dense. As such, construction workers may not see these resources, which results in increased risk of resource damage and/or loss. Earth moving and extraction of gravel have the potential to interact with archaeology, architectural and cultural heritage.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed development has the potential to impact on possible paleontological resources in the area. sites of archaeological, paleontological, or architectural significance were not specifically identified and cumulative effects are not applicable. the nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of digging foundations, access roads and impacts to buried heritage resources. Allowing the impact of the development to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially construction vehicles during clearance and excavation within the development sites. Movement of heavy construction vehicles must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if construction vehicles are not monitored to avoid driving through undetected heritage resources.

7.7 Mitigation

Heritage mitigation is required for the suspected burial and derelict buildings and structures located within footprint of the substation extension site. The contractors must not destroy the ruined buildings without a demolition permit from PHRA. In addition, the developer must obtain a burial permit from SAHRA to verify the status of the suspected burial.

Table 5: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	One ruined farmstead with several derelict buildings and structures in a poor state of conservation.
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	LIA sites occur in the broader project area
Graves and burial grounds	One suspected grave (Magoma 2018)
Movable objects	None
Overall comment	The surveyed area has no identifiable heritage resources on the surface but sub-surface chance finds are still possible.

8 ASSESSING SIGNIFICANCE

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

Historic Value

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national or other cultural sentiment to a majority or minority group. Social value also extend to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

9 RECOMMENDATIONS

a) The derelict buildings and structures were deemed to be of low significance and therefore may be destroyed to pave way for the substation expansion subject to obtaining a demolition permit from PHRA-G

b) It is recommended that a destruction permit be issued for the site on the undertaking that the following conditions will be met by Eskom within two years after the destruction permit is issued

c) Based on our significance assessment, no further assessment or protection is required for the affected buildings and structures. The buildings and structures are in a poor state of conservation and are not unique or of any historical value to warrant further protection in situ.

d) The derelict buildings and structures must be properly recorded prior to demolition: (a) photographically recorded.

e) The suspected grave must not be destroyed without obtaining a burial permit from SAHRA.

f) Should chance archaeological materials or human remains be exposed during subsurface construction work on any section of the development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.

g) Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the substation extension. The Heritage authority may approve the application for demolition of derelict buildings to allow the project to proceed as planned with special commendations to implement the recommendations here in made

10 CONCLUSION

Kimopax was retained by Eskom to carry out Phase 2 Heritage Mitigation for Westgate Substation Extension project in the Mogale City Municipality of Gauteng Province. The derelict farmstead will be permanently affected by the development; however, the ruined structures must not be destroyed without a permit from PHRA. In addition, the suspected traditional grave must not be destroyed without a permit from SAHRA. Desktop research revealed that the project area is rich in LIA sites (Kusel 2003) and Pelser (2007). In terms of the archaeology and heritage in respect of the proposed substation expansion, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, still remains, Eskom and contractors are advised to be diligent and observant during construction at the substation site. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the development cannot proceed. No further assessment and mitigation is only required for the identified remains of farm buildings and structures as well as the suspected human burial.

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APPENDIX 1 CHANCE FIND PROCEDURE FOR WESTGATE SUBSTATION PROJECT IN MOGALE CITY MUNICIPALITY IN GAUTENG PROVINCE.

February 2020

ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organisation

CHANCE FIND PROCEDURE

INTRODUCTION

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction. The main purpose of a CFP is to raise awareness of all construction workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of construction monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel at the substation construction site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during construction.

DEFINITIONS

In short the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

BACKGROUND

The substation expansion project in Gauteng Province is subject to heritage survey and assessment at planning stage in accordance with the NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are often accidentally exposed in the course of construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by Magoma (2018) on the substation site. The HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2020) did not record any significant archaeological remains at the site. The study confirmed the previously identified buildings and structures as well as the suspected grave site.

PURPOSE

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the substation site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during digging of foundations and movement of construction vehicles. The proposed construction activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Kimopax developed this Chance Find Procedure to define the process which govern the management of Chance Finds during construction. This ensures that appropriate treatment of chance finds while also minimizing disruption of the construction schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of

archaeological remains while minimizing disruption of construction scheduling. It is recommended that due to the low to moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during construction.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

CHANCE FIND PROCEDURE

General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 25m buffer zone from all sides of the find.

- Record the find GPS location, if able.
- All remains are to be stabilised *in situ.*
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.

- **Finds rescue strategy**: All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a Museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeological will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the permit application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when construction activities can resume.

MANAGEMENT OF CHANCE FINDS

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Sativa will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this

may include rescue excavations, for which Sativa will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidently exposed, SAHRA Burial Ground Unit or Kimopax Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:

b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.

c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.

d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.

e. The project archaeologist will consult with the traditional authorities, local municipality and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42;

f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to SAHRA Burial Ground and Graves Unit.

g. As soon as the project archaeologist receives the rescue permit from SAHRA he will in collaboration with the company/contractor arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.

h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.

i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the company.

Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

12 APPENDIX 1: HERITAGE MANAGEMENT PLAN INPUT INTO THE WESTGATE SUBSTATION EXPANSION PROJECT EMP

Objective	• Protection of archaeological sites and land considered to be of cultural value; • Protection of known physical cultural property sites against vandalism, destruction and theft; and • The preservation and appropriate management of new archaeological finds should these be discovered during construction.							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site,		Throughout	C CECO	SM	ECO	EA EM

		a registered heritage specialist or PHRA official must be called to site for inspection.						PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed form site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA-G.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA-G and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						
Operational Phase								
		Same as construction phase.						

13 Appendix 2: heritage mitigation measure table

SITE REF	HERITAGE ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	PENALTY	METHOD STATEMENT REQUIRED
Chance Archaeological and Burial Sites	General area where the proposed project is situated is a historic landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work which may disturb previously unidentified chance finds.	Possible damage to previously unidentified archaeological and burial sites during construction phase. • Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites. • Loss of historic cultural landscape;	In situations where unpredicted impacts occur construction activities must be stopped and the heritage authority should be notified immediately. Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate. • Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access	• Contractor / • Project Manager • Archaeologist • Project EO	Fine and or imprisonment under the PHRA-G Act & NHRA	Monitoring measures should be issued as instruction within the project EMP. PM/EO/Archaeologists Monitor construction work on sites where such development projects commences within the farm.

		• Destruction of burial sites and associated graves • Loss of aesthetic value due to construction work • Loss of sense of place Loss of intangible heritage value due to change in land use	thereto by the construction team must be denied. • Accidentally discovered burials in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. The heritage officer responsible should secure relevant heritage and health authorities permits for possible relocation of affected graves accidentally encountered during construction work.			

16 APPENDIX 3: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans;

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed—

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must—

(a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must—

(a) take account of all relevant cultural values and indigenous knowledge systems;

(b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;

(c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;

(d) contribute to social and economic development;

(e) safeguard the options of present and future generations; and

(f) be fully researched, documented and recorded.

Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not

such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the

management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.