

Heritage Impact Assessment (HIA)

PREPARED BY



Office No. 16, First Floor (South Block)
Corridor Hill Crossing, 09 Langa Crescent
Corridor Hill, eMalahleni, 1035.
Tell No.: 013 692 0041
Cell No.: 072-081-6682/078-2727-839
Fax No.: 086-514-4103
E-mail address: kenneth@singoconsulting.co.za



HIA report on Portions 364 Of the Farm Middelburg Town and Townlands
287-JS, Steve Tshwete Local Municipality, Mpumalanga Province.

24 June 2020

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Phase 1 HIA for Proposed mixed developments on Portions 364 of the Farm Middelburg Town and Townlands 287-JS, Steve Tshwete Local Municipality, Mpumalanga Province.
Purpose of the study	The Phase 1 Archaeological Impact Assessment is 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 development.
1:50 000 Topographic Map	2529CD,
Coordinates	
Municipalities	Steve Tshwete Local Municipality.
Predominant land use of surrounding area	Agricultural and residential
Applicant	Steve Tshwete Local Municipality. P.O. Box 14, Middelburg, 1050 Tel: 013 249 7309
Ref	Q29.03.20
Heritage Practitioner	Singo Consulting (Pty) Ltd 1 st Floor Office No: 16 Corridor Hill Crossing (South Block) RT 09 Langa Crescent eMalahleni Cell: 072 081 6682 Email: kenneth@singoconsulting.co.za
Authors	Trust Mlilo
Date of Report	24 June 2020

This report serves to inform and guide the developer and contractors about the possible impacts that the proposed development may have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located in the study area. As required by South African heritage legislation, a development exceeding 5ha such as this require pre-development archaeology and Heritage assessment by a competent heritage practitioner in order to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed development. In compliance with these laws Steve Tshwete Local Municipality appointed Singo Consulting (Pty) Ltd to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) of the proposed mixed development. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks on and around the farms Middelburg Town and Townlands 287-JS earmarked for residential and infrastructure development. The study site is not on pristine ground, having seen significant transformations owing to mainly agriculture, powerlines, and road networks (see Figure 1). The general project area is known for occurrence of LIA sites. In terms of the built environment of the project area, no structures or buildings older than 60 years of age were recorded on all the sites. 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. This report must also be submitted to the SAHRA for review.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed project.
- Most sections of the project area are accessible, and the field survey was effective enough to cover significant sections of the project receiving environs.
- The immediate project area is predominantly commercial and residential.
- Some sections of the proposed development site are severely degraded from previous agriculture, activities overgrazing, and stamping my domestic animals.
- The study did not record any archaeological site within the proposed development sites.

The report sets out the potential impacts of the proposed development on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate.

The Report makes the following recommendations:

- Construction workers must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during subsurface construction prior to commencement of work on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds.
- If archaeological materials are uncovered, work must cease immediately and the SAHRA be notified and activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the legislations.

This report concludes that the impacts of the proposed development of the cultural environmental values are not likely to be significant on the entire development site if the EMP includes recommended safeguard and mitigation measures identified in this report.

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.

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, PhD *cand* (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional 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 Singo Consulting (Pty) Ltd. Singo Consulting (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. Integrated Specialist Services (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 Singo Consulting (Pty) Ltd. 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).

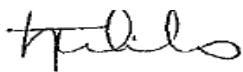
Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

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 Assessment 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 development being proposed by Steve Tshwete Local Municipality.

Signed by



24/ 06/ 2020

ACKNOWLEDGEMENTS

The authors acknowledge Singo Consulting and Steve Tshwete Local Municipality for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project.

TABLE OF CONTENTS

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY).....

TABLE OF CONTENTS 6

ABBREVIATIONS..... 9

KEY CONCEPTS AND TERMS X

 Periodization..... X

 Definitions..... X

 Assumptions and disclaimer.....xii

INTRODUCTION - 13 -

 1.1. Terms of Reference (ToR) - 13 -

 The Singo Consulting (Pty) Ltd was requested by Steve Tswete Local Municipality to conduct an AIA/HIA study addressing the following issues: - 13 -

 1.2. Project Location - 14 -

 1.3. Project Background and Description..... - 18 -

LEGISLATIVE CONTEXT - 19 -

METHODOLOGY - 22 -

 1.4. The Fieldwork survey - 22 -

 1.5. Visibility and Constraints - 22 -

 1.6. Consultations - 23 -

ARCHAEOLOGICAL CONTEXT - 32 -

 1.7. Archaeological Context - 32 -

 1.8. Stone Age Archaeology - 32 -

 1.9. Iron Age Archaeology - 33 -

 1.10. Historical Background - 33 -

 1.11. History of Middleburg - 35 -

 1.12. Intangible Heritage..... - 36 -

2. SAHRIS Data Base and Impact Assessment Reports in the project area - 36 -

RESULTS OF THE FIELD STUDY - 36 -

 2.1. Archaeology - 36 -

 2.2. Burial grounds and Graves - 37 -

 2.3. Public Monuments and Memorials..... - 38 -

 2.4. Buildings and Structures - 38 -

 Table 2: Summary of Findings - 38 -

 2.5. Assessment of development impacts - 39 -

Methodology Adapted in Assessing the Impacts - 39 -

The significance of the impacts will be assessed considering the following descriptors: - 39 -

2..... - 42 -

 2.6. Cumulative Impacts - 44 -

 2.7. Mitigation..... - 45 -

ASSESSING SIGNIFICANCE	46
2.8. Aesthetic Value	46
2.9. Historic Value	46
2.10. Scientific value	46
2.11. Social Value	46
DISCUSSION	47
RECOMMENDATIONS	48
CONCLUSIONS	49
REFERENCES	50
APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED MIXED DEVELOPMENT ON PORTION 364 OF THE FARM MIDDELBURG TOWN AND TOWN LANDS 287 IN STEVE TSHWETE LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.	58
CHANCE FIND PROCEDURE	59
<i>Introduction</i>	59
<i>Definitions</i>	59
<i>Background</i>	59
<i>Purpose</i>	60
CHANCE FIND PROCEDURE	60
<i>Management of chance finds</i>	62
APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED DEVELOPMENT EMP.- 64 -	
APPENDIX 3: HERITAGE MITIGATION MEASURES TABLE-	65 -
APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA .- 66 -	
APPENDIX 4: CV OF THE ARCHAEOLOGIST (Trust Mlilo)	70
<input type="checkbox"/> BRIEF PROFILE	70
<input type="checkbox"/> EDUCATION	72
<input type="checkbox"/> COMPUTER SKILLS:	73
<input type="checkbox"/> WORK & PROFESSIONAL EXPERIENCE	74
<input type="checkbox"/> SPECIALIST POSITIONS AND PROFESSIONAL CONSULTANCY EXPERIENCE	76
<input type="checkbox"/> AUXILIARY PROFESSIONAL EXPERIENCE	77

<input type="checkbox"/>	AUXILLIARY SPECIALIST SKILLS	77
<input type="checkbox"/>	PROFESSIONAL AFFILIATIONS.....	77
<input type="checkbox"/>	REFEREES	77

TABLE OF PLATES [PHOTOGRAPHS]

Plate 2: View of proposed development site adjacent to the mall (see Figure 2).	- 24 -
Plate 3: View of proposed development site (see Figure 2)	- 24 -
Plate 3 View of proposed development site	- 25 -
Plate 4: View of proposed development site	- 25 -
Plate 5: View of proposed development site	- 26 -
Plate 6: View of proposed development site	- 26 -
Plate 7:View of proposed development	- 27 -
Plate 9: View of proposed development site	- 27 -
Plate 10: View of proposed development site	- 28 -
Plate 11: View of proposed development site	- 28 -
Plate 12: View of proposed development site	- 29 -
Plate 13: View of proposed development site	- 29 -
Plate 14: View of proposed development site	- 30 -
Plate 15: View of proposed development site	- 30 -
Plate 16: View of proposed development site	- 31 -

TABLE OF FIGURES

Figure 1 Proposed Layout Plan for the project (Steve Tshwete Local Municipality 2020).....	- 15 -
Figure 1: Location of the proposed project site (Singo Consulting 2020)	- 17 -

LIST OF TABLES

Table 1: Evaluation of the proposed mining development as guided by the criteria in NHRA and NEMA.....	- 21 -
Table 2: Summary of Findings.....	- 38 -
Table 3: Criteria Used for Rating of Impacts.....	- 39 -
Table 4: Criteria for Rating of Classified Impacts	- 41 -
Table 5: Operational Phase.....	- 42 -

ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>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.</i>)
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-NW	Provincial Heritage Resource Agency of North West
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).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

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 proposed development site during construction, such activities should be halted immediately, and a competent heritage practitioner and SAHRA 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 the developer/applicant 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. Singo Consulting (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

INTRODUCTION

Singo Consulting (Pty) Ltd was commissioned by Steve Tshwete Local Municipality to carry out a Phase 1 AIA/ HIA of the proposed residential and commercial development on Portion 364 and 27 of the Farm Middelburg Town and Townlands 287 JS in Middelburg, Mpumalanga Province. The proposed mixed development is gazetted in terms of section 38 (1) of the NHRA (see Figure 1). This HIA study is triggered by mixed developments proposed by Steve Tshwete Municipality to address the residential housing deficit and other infrastructure requirements. The overall purpose of this heritage report is to identify, assess any heritage resources that may be located in the study area and evaluate the positive and negative impacts of the proposed mixed development (mixed uses including various business land uses, commercial uses, high-density residential developments, institutional and recreational uses) on these 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. Desktop studies revealed that the general project area is rich in Late Iron Age (LIA) and historical sites most of which have been affected by massive coal mining in the area. It should be noted that while heritage resources may have been located in the entire study area, subsequent developments such as agriculture and infrastructure development work have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during construction and mining. The proposed residential development may be permitted subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings there is no archaeological and heritage reasons why the development cannot proceed, taking full cognizance of clear procedures to follow in the event of chance findings.

1.1. Terms of Reference (ToR)

The Singo Consulting (Pty) Ltd was requested by Steve Tswete Local Municipality to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the residential development site including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the proposed residential development
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located within the project site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;

- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
- Review applicable legislative requirements.

1.2. Project Location

The proposed mixed development is located on Portion 364 of the farm Middelburg Town and Townlands 287-JS measuring 75,954 hectares in extent. The project is located in the Steve Tshwete Local Municipality, Mpumalanga Province (Figure 1). The GPS coordinates of the farms are illustrated on Table 1. The study area is approximately 4686.7ha (hectares) in extent.

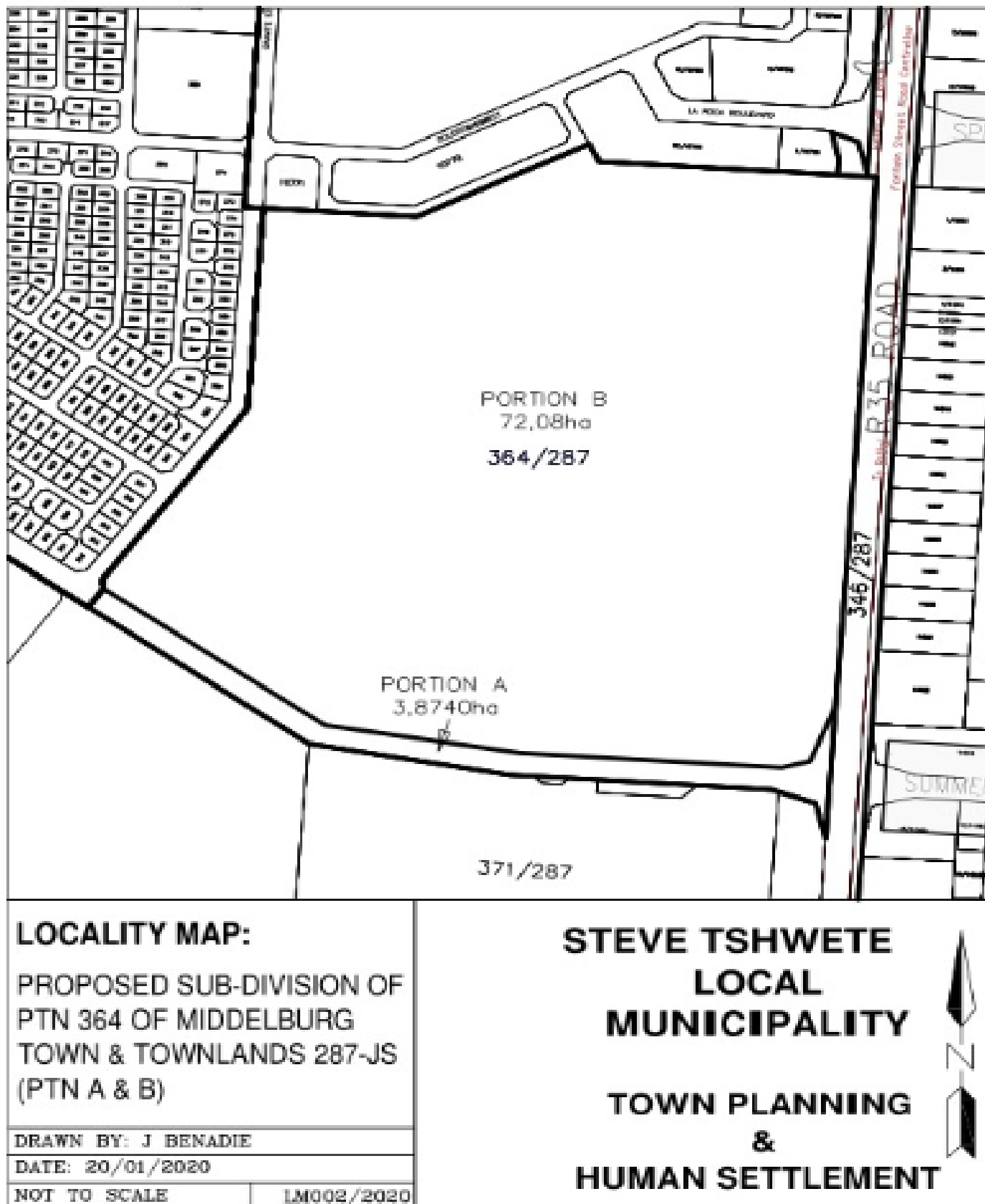


Figure 1 Proposed Layout Plan for the project (Steve Tshwete Local Municipality 2020)



Figure 2: Location of the proposed project site (Singo Consulting 2020)

1.3. Project Background and Description

As a result of the demand for smaller and affordable stands within Mhluzi township, the municipality took a resolution to make available un-serviced informal stands on a lease basis. As time goes by, the lessees requested the municipality to formalize the industrial area and install water, sewer, electricity, paved streets and storm water system. Subsequently, Council took a resolution to formalize the industrial area into a formal industrial township from a spatial planning point of view, the municipality has earmarked Portion 364 of the farm Middelburg Town and Townlands 287-JS for development of mixed uses including various business land uses, commercial uses, high-density residential developments, institutional and recreational uses. Portion 364 of the farm Middelburg Town and Townlands 287-JS measures 75,954 hectares in extent. However, 3,8740 hectares (Portion A) has been allocated for the purpose of constructing a 35 wide road reserve. Therefore, the required environmental impact assessment application form mixed use development is limited on the 72,08 hectares piece of land which is marked as Portion B on the attached Locality Plan. From a spatial planning point of view, the municipality has earmarked Portion 364 of the farm Middelburg Town and Townlands 287-JS for development of mixed uses including various business land uses, commercial uses, high-density residential developments, institutional and recreational uses. Portion 364 of the farm Middelburg Town and Townlands 287-JS measures 75,954 hectares in extent. However, 3,8740 hectares (Portion A) has been allocated for the purpose of constructing a 35 wide road reserve. Therefore, the required environmental impact assessment application form mixed use development is limited on the 72,08 hectares piece of land which is marked as Portion B on the attached Locality Plan. In line with the principles of sustainable development and in the interest of protection of significant heritage resources, competent Archaeologists are hereby invited to submit quotations for conducting heritage impact assessment on the 72,08 hectares piece of land in order to assess the suitability of the site for the purpose of planning and designing mixed use development.

LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study and there are presented here. Under the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA), an AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process.

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 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:

- Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- 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
- 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 proposed development will change the character of a site exceeding 5000 sq m, then an HIA is required according to this section of the 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**. This section may not apply to present study since none were identified. 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, who will assist in investigating the extent and significance of the finds and inform the applicant 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, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant 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 EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment 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 the applicant (Steve Tshwete Municipality), SAHRA/ PHRA 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 1: Evaluation of the proposed mining 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	Yes
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq m	Yes
	Development involving three or more existing erven or subdivisions	Yes
	Development involving three or more erven or divisions that have been consolidated within past five years	Yes
	Rezoning of site exceeding 10 000 sq m	No
	Any other development category, public open space, squares, parks, recreation grounds	Yes
NHRA Section 34	Impacts on buildings and structures older than 60 years	Non recorded
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes

METHODOLOGY

This document falls under the Basic assessment phase of the AIA/HIA and therefore aims at providing an informed heritage-related opinion about the proposed mixed development in Middelburg, Mpumalanga Province. This is usually achieved through a combination of a review of any existing literature 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 proposed development sites 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 handheld 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 proposed residential development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed development.

1.4. The Fieldwork survey

The fieldwork survey was undertaken on the 14th and 15th of June 2020. The main focus of the survey involved a pedestrian survey which was conducted within the proposed residential development 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 than the surrounding grass veld; the presence of exotic trees; evidence for building rubble, existing buildings and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern residential and on-going infrastructure developments; the general area where the proposed 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 is dominated by agricultural infrastructure and developments.

1.5. Visibility and Constraints

Most sections of the proposed development sites are visible because they were previously cleared for agriculture, however, access to some portions of the sites was restricted due to Covid 19 lockdown and personal security issues. It is conceded that 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.

1.6. Consultations

The Basic Assessment (BA) Public Participation process is conducted by the EAP. The study team consulted residents about the heritage character of the proposed development sites. The BA Public Participation Process will also invite and address comments from affected communities and any registered heritage bodies on any matter related to the proposed housing project including heritage concerns that may arise as a result of the residential construction project. The issues raised by the public with respect to the proposed development will also be included in the Final Basic Assessment Report.

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



Plate 1. View of proposed development site adjacent to the mall (see Figure 2).



Plate 2: View of proposed development site (see Figure 2)



Plate 3 View of proposed development site



Plate 4: View of proposed development site

PHASE 1 HIA FOR PROPOSED MIXD DEVELOPMENTS ON PORTION 364 OF THE FARMS MIDDELBURG TOWN AND TOWNLANDS 287-JS, STEVE TSHWETE LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.



Plate 5: View of proposed development site



Plate 6: View of proposed development site



Plate 7:View of proposed development



Plate 8: View of proposed development site



Plate 9: View of proposed development site



Plate 10: View of proposed development site



Plate 11: View of proposed development site



Plate 12: View of proposed development site



Plate 13: View of proposed development site



Plate 14: View of proposed development site



Plate 15: View of proposed development site

ARCHAEOLOGICAL CONTEXT

1.7. Archaeological Context

In order to place the project area (Middleburg) in archaeological and historical context, primary and secondary sources were consulted. Ethnographical and linguistic studies by early researchers such as Theal and Van Warmelo provide insights on the cultural groups who lived in and around the project area since ca 1600. Historic and academic sources by Küsel and Bergh, Makhura, Delius, and Webb were also consulted. There are no museums in the eMalahleni and Middelburg towns which could be consulted, and no historical information was available at the municipalities or information centres (Van Wyk Rowe 2012). Very little contemporary research has been done on prehistoric African settlements in the study area, and according to Bergh, there are no recorded sites that date from the Stone Age, (including Rock paintings or engravings), Early or Later Iron Age.

1.8. Stone Age Archaeology

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (the period from 22 000 years ago to 200 years ago). The Later Stone Age is also associated with rock paintings and engravings which were done by the San, Khoi Khoi and in more recent times by Iron Age farmers. Heritage surveys up to now have recorded few outstanding Stone Age sites, rock paintings and engravings in the Eastern Highveld - primarily as a result of limited extensive archaeological surveys. Stone tools have been recorded around some of the pans which occur on the Eastern Highveld.

In the larger geographical area there is material manifestation of Stone Age people but generally, Highveld area did not attract much of habitation in these early times due to lack of rock-shelters and domination of exposed environments. Thus, it is mostly in the vicinity of large watercourses and lower parts of mountains that some ESA (~ 2.6 million to 250 000 years ago) materials (crude chopper and other unifacial tools of the Oldowan industry and the characteristic Acheulian hand axes and cleavers) and MSA (~ 250 000 to 40-25 000 years ago) materials are generally found. The MSA is a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology. More technological and behavioural changes than those witnessed in the MSA, occurred during the LSA (~ 40-25 000, to recently, 100 years ago), which is also associated with Homo Sapiens (Barham and Mitchell 2008). For the first time we get evidence of people's activities derived from material other than stone tools (ostrich eggshell beads, ground bone arrowheads, small bored stones and wood fragments) (Deacon and Deacon 1999). The LSA people are also credited with the production of rock art (engravings and paintings), which is an expression of their complex social and spiritual beliefs (Parkington *et al.* 2008). However, it is important to note that no Stone Age materials were recorded during the field walking, perhaps

due to the presence of tall grass. Nonetheless, it is possible to encounter isolated finds of these objects in the study area, even though these would most likely be out of context due to the modern disturbances.

1.9. Iron Age Archaeology

The Iron Age of the Mpumalanga region dates back to the 5th Century AD when the Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region which was then occupied by hunter-gatherers. These EIA communities are archaeologically referred to as the Mzonjani facies of the Urewe EIA Tradition (Huffman, 2007: 127-9). They occupied the foothills and valley lands along the general Indian Ocean coastland introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007). Alongside the Urewe Tradition was the Kalundu Tradition whose EIA archaeological sites have been recorded along the Mpumalanga areas. From AD 650 to 750 the EIA sites in the region are classified as the Msuluzi facies which was replaced by the Ndongondwane and Ntsekane facies from AD 750 to 950 and AD 950 to 1050 respectively (Huffman, 2007).

By 1050 AD proto-Nguni Bantu-speaking groups associated with the Late Iron Age (LIA) called the Blackburn sub-branch of the Urewe Tradition had arrived in the eastern regions of South Africa, including modern day Mpumalanga, migrating from the central African region of the Lakes Tanganyika and Victoria (Huffman 2007: 154-5). According to archaeological data available, the Blackburn facies ranged from AD 1050 to 1500 (ibid. p.155). The Mpumalanga and the Natal inland regions saw the development of the LIA Moor Park facies between AD 1350 and 1750. This archaeological facies is interpreted as representing inland migration by LIA Nguni speaking groups (Huffman 2007). Moor Park is associated with settlements marked by stonewalling. The period from AD 1300 to 1750 saw multiple Nguni dispersal from the coastland into the hinterland and eventually across the Drakensberg Escapement into central and eastern South Africa (ibid).

No Iron Age sites are indicated in a historical atlas around the town of Witbank, but this may only indicate a lack of research. The closest known Iron Age occurrences to the surveyed area are Late Iron Age sites that have been identified to the west of Bronkhorstspuit and in the vicinity of Bethal (Bergh 1999: 7-8). The good grazing and access water in the area would have provided a good environment for Iron Age people although building material seem to be reasonably scarce. One would therefore expect that Iron Age people may have utilized the area. This is the same reason why white settlers moved into this environment later on.

1.10. Historical Background

The Late Iron Age Nguni communities engaged in the Indian Ocean Trade exporting ivory and importing consumables such as cloth and glass beads. The exporting point was Delagoa. This brought the Nguni speaking community in touch with the Indo-Asian and first Europeans (Portuguese). It was the arrival of the Dutch and the

English traders that opened up Delagoa Bay to more trade did the Nguni engaged in extensive trade with the international traders (Huffman 2007). From the late 1700s, trade in supply of meat to passing ship had increased substantially to an extent that by 1800 meat trade is estimated to have surpassed ivory trade. At the same time population was booming following the increased food production that came with the introduction of maize that became the staple food. Naturally, there were signs that population groups had to compete for resources especially along the east coastal regions. The KwaZulu Natal coastal region has a special place in the history of the region and country at large. This relates to the most referenced Mfecane (wandering hordes) period of tremendous insecurity and military stress which eventually affected the entire Southern Africa including the modern-day Mpumalanga area. Around the 1830s, the region also witnessed the massive movements associated with the Mfecane. The causes and consequences of the Mfecane are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988). In this context new African kingdoms emerged such as the Zulu Kingdom under Shaka in the second quarter of the 1800s AD. Military pressure from Zululand spilled onto the highveld by at least 1821. Various marauding groups of displaced Sotho-Tswana moved across the plateau in the 1820s. Mzilikazi raided the plateau extensively between 1825 and 1837. For example, at the beginning of the 19th century, the Phuthing, a South Sotho group, stayed to the east of eMalahleni. During the Difaquane they fled to the south from the Ndebele of Mzilikazi who established several settlement complexes in Eastern Bankveld between Pretoria and Witbank (Bergh 1999: 10-11; 109).

At the same time the Boers trekked into this area in the 1830s. And throughout this time settled communities of Tswana people also attacked each other. As a result of this troubled period, Sotho-Tswana people concentrated into large towns for defensive purposes. Their settlements were built of stone because of the lack of trees in the project area. These stone-walled villages were almost always located near cultivatable soil and a source of water. Such sites are known to occur near Kriel (e.g. Pelsler, et al 2006) and to the south (Taylor 179). However stonewalled sites associated with Sotho Tswana clans have not been reported in the Witbank area as yet.

White farmers only settled in the Witbank and Middleburg area after 1850 (Bergh 1999: 16). One may therefore expect to find farm buildings, structures and objects from this period in time in the area. Many graveyards from this period have indeed been identified in surrounding areas during past surveys.

Ethnographical and linguistic studies by early researchers such as Ziervogel, Theal and Van Warmelo shed light on the cultural groups living in the area since ca 1600. Historic and academic sources by Küsel and Bergh, were consulted, as well as historic sources by Makhura and Webb. There are no museums in the eMalahleni and Middleburg towns which could be consulted, and no historical information was available at the municipalities or information centres. The author had to rely on the assistance of farmers and their families who lived in the area since the 1920's, as well as local people documenting history in the area. Very little contemporary research has

been done on prehistoric African settlements in the study area, and according to Bergh, there are no recorded sites that date from the Stone Age, (including Rock paintings or engravings), Early or Later Iron Age.¹ The topographical map 2529CD Middelburg, revealed that this area was highly disturbed with cultivated land, plantations and mining. The area between eMalahleni (Witbank) and Middelburg was sparsely populated in the 19th century, and although Bergh, indicates that only the Ndzundza Ndebele group is situated to the north of Middelburg, ethnographical and linguistic studies by early researchers such as D. Ziervogel and N.J. Van Warmelo, revealed that the study area (i.e between Witbank and Middelburg), was inhabited by the Ndzundza abaga (Ndebele), Nhlapho abakwa, and various tribes of the baSotho (baKôpa, baPedi) (NJ Van Warmelo, 1935 Map: Bantu Tribes of South Africa). Van Warmelo based his 1935 survey of Bantu Tribes of South Africa on the number of taxpayers living in the area. One dot on the map represented 10 taxpayers, which were mainly male. (1 J. Bergh, Geskiedenis Atlas, die vier Noordelike provinsies).

1.11. History of Middleburg

Middelburg was established as Nasareth (meaning root from dry land), in 1864 by the Voortrekkers on the banks of the Klein Olifants river. The name was changed in 1872 to Middelburg to mark its situation halfway between the Transvaal capital of Pretoria and the gold mining town of Lydenburg. A Dutch Reformed Church was built in 1890. The British built a large concentration camp in Middelburg during the Second Boer War. North of Middelburg, the township of Mhluzi developed simultaneously (Botshabelo) and became part of greater Middelburg in 1994. Middelburg is a large farming and industrial town in Mpumalanga. It is known as the “Stainless Steel Capital” of Africa. Middleburg is in the coal mining area with 22 collieries in an area no more that 40km in any direction (Pistorius 2008). There are also a number of power stations as well as a steel mill, Highveld Steel and Vanadium Corporation nearby, which all require coal (Van Warmelo, Preliminary survey of the Bantu Tribes of South Africa, 87-108). The establishment of the NZASM railway line in the 1880s, linking Pretoria with Lourenço Marques and the world at large, brought much infra-structural and administrative development to the area. This railway line also became the scene of many battles during the Anglo-Boer Heritage Impact Assessment Vlakfontein Mine War and after the battle of Bakenlaagte (30 October 1901) the Clewer station served as hospital for the wounded British soldiers. A concentration camp was established near the Balmoral station, northwest of the study area (Cloete 2000). In line with the ‘scorched earth’ policy, most farmsteads were destroyed by the British during the latter part of the hostilities. Coal mining occurred only sporadically in the area. However, with the discovery of the Witwatersrand gold fields, the need for a source of cheap energy became important, and coal mining developed on a large scale in various regions. By 1899, at least four collieries were operating in the Middelburg-Witbank district, supplying the gold mining industry (Praagh 1906).

1.12. 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.

2. SAHRIS Data Base and Impact Assessment Reports in the project area

Several archaeological and heritage studies were conducted within Middleburg and eMalahleni (Witbank) and their vicinity since 2002 and these presents the nature and heritage character of the area. The HIA conducted in the area also provide some predictive evidence regarding the types and ranges of heritage resources to be expected in the proposed project area: (see reference list for HIA reports). The studies include mining, water pipeline and powerline projects completed by Pistorius (2002, 2003, 2004, 2005, 2006a, 2006b, 2007, 2008, 2009, 2010, 2011, 2013, 2014). No sites were recorded, but the reports mention that structures older than 60 years occur in the area, Pelsler and Van Vollenhoven (2011,2013, 2011, 2014, 2015) for mining and infrastructure development survey also recorded no sites. Van Schalkwyk did extensive work in the project area mostly for mining and infrastructure developments for example Van Schalkwyk, (2002, 2004, 2006, 2006, and 2010). Other than burial sites and buildings older than 60 years the studies did not record any significant archaeological sites in the Middleburg area. The following table presents projects conducted in the Middleburg area and its vicinity from 2002. In addition, the Project Area was also studied by means of maps on which it appears (Middleburg) 2529CD, 1: 50 000 topographical map.

RESULTS OF THE FIELD STUDY

2.1. 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 primary impacts are likely to occur during clearance and digging for foundations of building foundations, indirect impacts may occur during movement of heavy construction vehicles. The excavation for foundations for buildings and structures and fence line posts will result in the relocation or destruction of all existing surface heritage material (if any are present).

Similarly, the clearing of access roads, haul roads and powerlines will impact material that lies buried in the topsoil. 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 development site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. 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 the project area has previously been cleared for agriculture. The following section presents results of the archaeological and heritage survey conducted within the proposed project site.

Several LIA sites were previously recorded in the general project area. Although the project site is heavily degraded from previous and current land use such as agriculture there is still a possibility 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 within the proposed development site.

Based on the field study results and field observations, 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 site. 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.

2.2. Burial grounds and Graves

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and concealed by thick vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities and construction. In some instances, packed stones or bricks may indicate the presence of informal 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) or Department of Health for graves younger than 60 years.

The field survey did not identify any burial grounds or individual graves within Portion 364 of the proposed development site. It should be noted that 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. In addition, graves are important in providing evidence for communities seeking land restitution. Wherever they exist or not, they may not be tampered with or interfered with during any development without a permit from SAHRA. It should also be borne in mind 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 within the proposed development site, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protect.

2.3. Public Monuments and Memorials

The study did not record any public memorials and monuments within Portion 364 of the proposed development site.

2.4. Buildings and Structures

Portion 364 of the Farm Middelburg Town and Townlands 287-JS is vacant, no buildings and structures were recorded within the proposed development site. The site does not trigger Section 34 of the NHRA.

Table 2: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None were recorded within Portion 364
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	None recorded
Graves and burial grounds	None recorded
Movable objects	None
Overall comment	The surveyed area has no confirmable archaeological resources on the surface, but sub-surface chance finds are still possible.

2.5. Assessment of development 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 project 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.

Methodology Adapted in Assessing the Impacts

The significance of the impacts will be assessed considering the following descriptors:

Table 3: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		

PHASE 1 HIA FOR PROPOSED MIXD DEVELOPMENTS ON PORTION 364 OF THE FARMS MIDDELBURG TOWN AND TOWNLANDS 287-JS, STEVE TSHWETE LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.

Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.

Table 4: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

Table 5: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Significanc e before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Significanc e after mitigation
Clearing and construction	Destruction of archaeological remains	Cultural heritage	-	4	1	1	3	18	<ul style="list-style-type: none"> Use chance find procedure to cater for accidental finds 	4	1	1	3	18
	Disturbance of graves	Cultural heritage	-	4	1	2	3	21	<ul style="list-style-type: none"> Burial sites must be plotted and clearly marked. Burial sites must be protected/barricaded to avoid accidental damage during mining activities Landowners/custodians must be informed about the potential impacts of the mining development, Custodians must be involved in any mitigation work to their family burial sites. 	4	1	2	3	21
	Disturbance of buildings and structures older than 60 years old	Operational	-	4	2	3	2	18	<ul style="list-style-type: none"> Buildings and structures older than 60 years must not be altered/destroyed without a permit from PHRA Buildings and structures older than 60 years must be mapped and protected. Construction management and workers must be educated about the value of historical buildings and structures. 	4	1	2	2	14

PHASE 1 HIA FOR PROPOSED MIXD DEVELOPMENTS ON PORTION 364 OF THE FARMS MIDDELBURG TOWN AND TOWNLANDS 287-JS, STEVE TSHWETE LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Significanc e before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Significanc e after mitigation
Haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no public monuments within the development site 	2	1	1	4	Low

2.6. 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 mixed 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 proposed development 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 proposed 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, 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 clearances, digging foundations, access roads and impacts to buried heritage resources. Allowing the impact of the proposed 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 site. 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.

2.7. Mitigation

Mitigation for Portion 364 is not required; however, the Chance find procedure applies (see appended Chance Find Procedure).

ASSESSING SIGNIFICANCE

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

2.8. 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.

2.9. Historic Value

Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all 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.

2.10. 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.

2.11. 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 extends to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

DISCUSSION

Various specialists conducted several Phase 1 Archaeological/ Heritage studies for various infrastructure developments in the project area since 2006. The current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the proposed project area. Although these studies recorded sites of significance for example Kruger, (2016), (Kusel (2003, 2008), Van Schalkwyk (2011a, 2011b, 2012) and Pistorius (2011, 2012) the recorded sites are far from the current proposed site. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of two primary interrelated factors:

1. That proposed development is located within a degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical, or burial sites, due to previous disturbances resulting from developments and other land uses in the project area.
2. Limited ground surface visibility on sections of the proposed development that were not cleared at the time of the study may have impeded the detection of other physical cultural heritage site remains or archaeological signatures immediately associated with the construction activities. It should be borne in mind that the absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist within the proposed project site.

Based on the significance assessment criterion employed for this report, the proposed development site was rated **low** from an archaeological perspective, However, it should be noted that significance of the sites of Interest is not limited to presence or absence of physical archaeological sites. Significant archaeological remains may be unearthed during construction. (see appended chance find procedure).

RECOMMENDATIONS

1. From a heritage perspective supported by the findings of this study, the proposed mixed developments on Portion 364 of the Farm Middelburg Town and Townlands 287 JS is feasible. However, the proposed development should be approved to proceed as planned under observation that the development dimensions do not extend beyond the proposed development site.
2. The footprint impact of the proposed development and associated infrastructure should be kept to a minimal to limit the possibility of encountering chance finds.
3. Should chance archaeological materials or human remains be exposed during subsurface construction work on any section of the proposed 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.
4. 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 proposed development. The Heritage authority may approve the proposed development to proceed as planned with special commendations to implement the recommendations here in made.

CONCLUSIONS

Singo Consulting (Pty) Ltd was requested by Steve Tshwete Local Municipality to carry out HIA for the proposed mixed development on the farm Middleburg Town and Townlands 287-JS, Steve Tshwete Local Municipality, Mpumalanga Province. Desktop research revealed that the general project area is rich in LIA sites (Kusel 2003) and Pelser (2007). However, no heritage resources were recorded within Portion 364 earmarked for mixed developments. In terms of the archaeology and heritage in respect of the proposed development sites, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds procedure applies. The developer and contractors are advised to be diligent and observant during construction to ensure that accidental finds are treated appropriately. 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 proposed development cannot proceed as planned.

REFERENCES

- Barham, L. and Mitchell, P. 2008. *The first Africans: African archaeology from the earliest toolmakers to most recent foragers*. Cambridge: Cambridge university press
- Bergh, J.S. (ed.) 1998. *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: J.L. van Schaik.
- Cloete, P.G. 2000. *The Anglo-Boer War: a Chronology*. Pretoria: JP van der Walt
- Deacon, H. J. and Deacon, J. 1999. *Human beginnings in South Africa: Uncovering the secrets of the Stone Age*. Cape Town: David Philip
- Delius, P. 1984. *The land belongs to us*. Raven Press: Johannesburg.
- Delius, P. 2007. *Mpumalanga. History and Heritage*. CTP Book Printers: Cape Town.
- Delius, P. & Hay, M. 2009. *Mpumalanga: an illustrated history*. Johannesburg: The Highveld Press.
- Delius, P & Schoeman, A. *Revisiting Bokoni: Populating the stone ruins of the Mpumalanga Escarpment*. In Swanepoel, N., Esterhuisen, A. & Bonner, P. (eds.) *Five hundred years rediscovered. South African precedents and prospects*, 135-167.
- EMPR. 2006 (a). *Addendum Landau Colliery Project Specific EMPR Addendum for the eMalahleni Water Reclamation Project*. Unpublished report by Golder Associates.
- EMPR. 2006 (b). *Addendum Greenside Colliery Project Specific EMPR Addendum for the eMalahleni Water Reclamation Project*. Unpublished report by Golder Associates
- Erasmus, B.P.J. 1995. *Oppad in Suid Afrika. 'n Gids tot Suid Afrika, Streek vir Streek*. Jonathan Ball Uitgewers Bpk. *Escom Annual Reports 1924-1971*
- Esterhuizen A. & Smith J. 2007. *Stories in Stone*. In Delius, P (ed). *Mpumalanga History and Heritage*. 41-64. Pietermaritzburg Kwa Zulu/Natal University Press.
- Evers, T.M. 1981. *The Iron Age in the Eastern Transvaal, South Africa*. In Voight, E.A. (ed). *Guide to archaeological sites in Northern and Eastern Transvaal*. Pretoria: South African Association of Archaeologists, 64-109. *Golden Jubilee 1923-1973*

<http://www.eskom.co.za/sites/heritage/pages/witbank.aspx>. Accessed 20 May 2016

http://www.mpumalngahappenings.co.za/witbank_homepage.htm>, Accessed, 19 May 2016.

<http://www.shtetlinks.jewishgen.org/witbank/Whistory.htm>>, Accessed, Accessed 19 2016.

<http://www.cleanstreams.co.za/completed%20projects.doc>>. Accessed. 20 May 2016.

SAHRA, Burial sites, <Http://www.sahra.org.za/burial.htm>, Accessed, 20 May 2016.

Inskeep, R.R. 1978. The peopling of Southern Africa. David Philip: Cape Town.

Hartdegen, P. (ed.) 1988. Our building heritage. Halfway House: Ryll's Publishing Co.

Holm, S.E. 1966. Bibliography of South African Pre- and Protohistoric archaeology. Pretoria: J.L. van Schaik.

Huffman, T.N. 2007 Handbook to the Iron Age: The archaeology of pre-colonial farming societies in southern Africa. Scottville: University of KwaZulu Natal Press

Knudson, S.I 1978. Culture in retrospect. Chicago: Rand McNally College Publishing Company.

Küsel, U.S.2009. Survey of Heritage sites in the Olifants Catchment area

Maggs T.M. 2008. The Mpumalanga Escarpment settlements. In (Swanepoel, N., Esterhuisen, A. & Bonner, P. eds.) Five hundred years rediscovered. South African precedents and prospects. 169-182.

Makhura, T. 2007. Early inhabitants. In Delius, P. (ed). Mpumalanga. History and Heritage. University of Kwa Zulu Natal Press: Scottsville.

Makura, T. 2007. The pre-colonial histories of Mpumalanga communities. In Delius, P (ed). Mpumalanga History and Heritage. 91-136. Pietermaritzburg Kwa Zulu/Natal University Press.

Mason, R. 1962. Prehistory of the Transvaal. Johannesburg: Witwatersrand University Press.

Mason, R.J. 1968. Transvaal and Natal Iron Age settlement revealed by aerial photography and excavation. African Studies. 27:167-180.Megawatt Journals

Naude, M. 1993. The use of stone on farmsteads on the eastern Transvaal. Africana Society of Pretoria (11): 49-55.

Naude, M. 2000. Vernacular stone buildings and structures on farmsteads in the southern districts of the Mpumalanga Province. *South African Journal of Cultural History*. 14(2): 31-64

National Archives TAB 496907211, TAB NAB C1122, TAB 496866096

National Environmental Management Act 107 of 1998

National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)

Nkangala District Municipality 2004. Formalization of Cultural and Historical sites. Pretoria: BKS (Pty) Ltd and Cultmatrix cc.

Parkington, J, Morris, D, & Rusch, N. 2008. *Karoo Rock Engravings: Follow the San*. Cape Town: Creda Communications.

Praagh, L.V. (ed.) 1906. *The Transvaal and its mines*. London: Praagh & Lloyd

Pelser, A., Van Schalkwyk, J.A., Teichert, F. & Masiteng, I. 2007. The archaeological investigation of an Iron Age site on the farm Rietfontein 101IS, eMalahleni district, Mpumalanga Province. *NCHM Research Journal* 2:1-24.

Pelser, A.J. 2010. A report on the archaeological investigation of graves on the farm Nooitgedacht 300 JS, impacted on by the Landau colliery mining 11 operations, near Witbank (eMalahleni), Mpumalanga Province. Unpublished Report Archaetnos AE1079. For Anglo-Coal (Landau Colliery).

Pistorius, J.C.C. 2002. A Heritage Impact Assessment (HIA) study for a new power line on the farm Rietvallei 397JS between Middelburg and Arnot in the Mpumalanga Province of South Africa. Unpublished report done for Eskom, Menlyn.

Pistorius, J.C.C. 2003. A Heritage Impact Assessment study for the proposed 22kV Duvha Colliery power line deviation near Middelburg in the Mpumalanga Province of South Africa. Unpublished report done for Eskom, Menlyn.

Pistorius J.C.C. 2004. A Heritage Impact Assessment (HIA) study for the EMP Amendment for Douglas Colliery in the Mpumalanga Province of South Africa. Unpublished report for Pulles, Howard and De Lange.

Pistorius, J.C.C. 2004. A Heritage Impact Assessment (HIA) study for the proposed new Optimum Colliery on the farm Schoonoord 164IS in the Mpumalanga Province of South Africa. Unpublished report done for African EPA.

Pistorius, J.C.C. 2004. A heritage impact assessment (HIA) study for the proposed new Goedgevonden expansion project on the farms Goedgevonden 10IS, Zaaewater 11IS and Kleinzuikerboschkraal 8IS in the eastern Transvaal highveld in the Mpumalanga Province of South Africa. Pretoria: Unpublished report.

Pistorius, J.C.C. 2005. A Phase I Heritage Impact Assessment (HIA) study for a dual underground and open cast mine on the farm Middelkraal 50IS in the Mpumalanga Province of South Africa. Unpublished report done for African EPA.

Pistorius, J.C.C. 2005. A Phase I Heritage Impact Assessment (HIA) study for Portion 10 of the farm Wonderfontein 428JS and the remainder of Kaalplaats 453JS for the proposed new Steelcoal Open Cast Mine in the Mpumalanga Province of South Africa. Unpublished report done for African EPA.35

Pistorius, J.C.C. 2005. A Phase I Heritage Impact Assessment (HIA) study for the proposed new Brakfontein Open cast and underground mine on the farm Brakfontein 264IR in the Mpumalanga Province of South Africa. Unpublished report for EPA Africa.

Pistorius, J.C.C. 2005. Results of a Phase II Heritage Impact Assessment Study: An investigation of a historical sandstone farmstead and outbuildings on the banks of the Olifants River on the farm Kleynkopje 15IS within the boundaries of Douglas Colliery in the Mpumalanga Province of South Africa.

Pistorius, J.C.C. 2006. A scoping report for a Phase I Heritage Impact Assessment study for the proposed new eMalahleni Water Reclamation Project near Witbank in the Mpumalanga Province of South Africa. Unpublished report for Anglo Coal and Ingwe Colliers.

Pistorius, J.C.C. 2006. A Phase I Heritage Impact Assessment study for Portion 22 of the farm Naauwpoort 477JS in eMalahleni in the Mpumalanga Province of South Africa. Unpublished report prepared for Clean Stream Environmental Services. 42

Pistorius, J.C.C. 2006. A Phase I Heritage Impact Assessment (HIA) study for the proposed new eMalahleni Water Reclamation Project near Witbank in the Mpumalanga Province of South Africa. Unpublished report for Anglo Coal and Ingwe Colliers.

Pistorius, J.C.C. 2007. A Phase I Heritage Impact Assessment (HIA) study for the proposed deviation of a tributary of the Riet River in the Matla Colliery mining area on the Eastern Highveld in the Mpumalanga Province of South Africa. Unpublished report for Golder.

Pistorius, J.C.C. 2008. A Phase I Heritage Impact Assessment (HIA) study for the proposed new Calcine waste disposal facility at Vanchem near eMalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report for Golder.

Pistorius, J.C.C. 2010. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Landau Expansion Project Near eMalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report prepared for Clean Stream Environmental Services.

Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) Study for the proposed new Schoongezicht Coal Mine near eMalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report prepared for CleanStream Environmental Services.

Pistorius, J.C.C. 2013. A Phase I Heritage Impact Assessment (HIA) Study for the proposed construction of a clean water pipeline from Middleburg Water reclamation plant to the Middleburg, Mpumalanga Province.

Pistorius, J.C.C. 2013. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Landau Colliery Life Extension Project near eMalahleni (Witbank) on the Eastern Highveld in the Mpumalanga Province. Unpublished report prepared for Clean Stream Environmental Services.

Pistorius, J.C.C. 2014. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Landau Colliery navigation section Umlazi South Block Extension Project near eMalahleni (Witbank) on the Eastern Highveld in the Mpumalanga Province. Unpublished report prepared for Clean Stream Environmental Services

Pistorius, J.C.C. 2015. A Phase I Heritage Impact Assessment (HIA) Study for the proposed South 32 SA Coal Holdings (Pty) Ltd 's South 32 CSA proposed extension of open cast operations and associated closure of a section of the D253 Provincial road at Klipfontein Section of the Middleburg mine on the Eastern Highveld in Mpumalanga

Pretorius, Fransjohan. 1999. Life on commando during the Anglo Boer War 1899-1902. Human & Rousseau: Cape Town.

Republic of South Africa. 1980. Ordinance on Excavations (Ordinance no. 12 of 1980). The Government Printer: Pretoria.

Republic of South Africa. 1983. Human Tissue Act (Act 65 of 1983). The Government Printer: Pretoria.

Republic of South Africa. 1998. National Environmental Management Act (no 107 of 1998). Pretoria: The Government Printer.

Tobias Coetzee and Leane George. 2013. Phase 1 Archaeological Impact Report: for Yoctolux (Pty) Ltd open cast coal mine on Portion 38 of the farm Elandsburg 291 JS, Middleburg, Mpumalanga Province

Roodt, F. 2008. Phase 1 Heritage Impact Scoping Report: Petrolene Liquid Fuel Storage Depot Kendal: Mpumalanga. Polokwane: R & R Cultural Resource Consultants.

Ross, R. 2002. A concise history of South Africa. Cambridge: Cambridge University Press.

Taylor, M.O.V. 1979. Wildebeestfontein: a Late Iron Age site in the southeastern Transvaal. In Van der Merwe, N.J. & Huffman, T.N. (eds.) 1979. Iron Age studies in Southern Africa.

Van Schalkwyk, J.A. 2002a. A survey of cultural resources in the proposed Klipspruit mining area, Witbank district, Mpumalanga. Unpublished report 2002KH07. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2002b. A survey of cultural resources for the Zondagsfontein mining development, Witbank district, Mpumalanga Province. Unpublished report 2002KH28. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2004a. Heritage impact assessment for the Smithfield mining development, Witbank district, Mpumalanga. Unpublished report 2004KH34. Pretoria: National Cultural History Museum. Heritage Impact Assessment Vlakfontein Mine

Van Schalkwyk, J.A. 2004b. Heritage impact assessment for the Weltevreden, New Largo Underground and New Largo Pit 4 mining developments, Witbank district, Mpumalanga. Unpublished report 2004KH34. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2006a. Heritage impact assessment for the proposed new power station, Witbank Area. Unpublished report 2006KH111. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2006b. Heritage impact scoping assessment for the proposed New Largo mining development, Witbank area, Mpumalanga. Unpublished report 2006KH116. Pretoria: National Cultural History Museum.

Van Vollenhoven, A.C. & Pelsler, A.J. 2009. A report on a cultural heritage impact assessment on a portion of portion 27 of the farm Middelburg Town and Townlands 287 JS in Middelburg, Mpumalanga Province. (Unpublished report, Wonderboompoort, Archaetnos).

Van Vollenhoven, A.C. & Pelsler, A.J. 2011. A report on a cultural heritage impact assessment for the proposed Middelburg Eastern Bypass Route, Middelburg, Mpumalanga Province. (Unpublished report, Groenkloof, Archaetnos).

Van Vollenhoven AC 2013. A report on a cultural Heritage Impact Assessment for the proposed open cast mining operation at Elandspruit Portion 31, close to Middleburg, Mpumalanga Province. Archaetnos.

Van Vollenhoven AC and Collins 2014. A report on a cultural Heritage Impact Assessment for the proposed development at Transalloys on Portion 34 and 35 of the farm Elandfontein 309 JS and Portion 20 and 24 of the farm Schoongezicht 308 JS close to eMalahleni, Mpumalanga Province. Archaetnos.

Van Vollenhoven A C and Collins 2015. A report on an Archaeological and built Environment Heritage Impact Assessment for the proposed development chicken houses on the Farm Kopermyn 435 JS and Kwaggafontein 460 JC close to Middleburg in Mpumalanga Province. Archaetnos.

Van Warmelo, N.J., 1935. A Preliminary Survey of the Bantu Tribes of South Africa, Pretoria.

Van Warmelo, N.J., 1937. Grouping and Ethnic History, in Schapera, I., The Bantu-Speaking Tribes of South Africa: An Ethnographical Survey, London.

Van Wyk, Rowe. 2011. Phase 1 Archaeological/ Heritage Impact Assessment for proposed Shanduka Coal rerouting of 2x88kv Traction lines, Middleburg in Mpumalanga Province.

Van Wyk, Rowe. 2012. Revised specialist Report Phase 1 Archaeological/ Heritage Impact Assessment for proposed revised route alignment: 132kv powerlines from Doornpoort to Rockdale in Mpumalanga Province.

Van Wyk, Rowe. 2013. Phase 1 Archaeological/ Heritage Impact Assessment for proposed township establishment on portion 27 of the farm Middleburg Town and Townlands 287 JS Middleburg, Mpumalanga Province.

Voight, E. 1981. Guide to the Archaeological sites in the Northern and Eastern Transvaal. Transvaal Museum.

Wadley, L & Turner, G. 1987. Hope Hill shelter: a Later Stone Age site in southern Transvaal. South African Journal of Science 83(3):98-105.

Whitelaw, G. 1996. Lydenburg revisited. Another look at the Mpumalanga Early Iron Age sequence. South African Archaeological Bulletin. 51

APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED MIXED DEVELOPMENT ON PORTION 364 OF THE FARM MIDDELBURG TOWN AND TOWNLANDS 287 IN STEVE TSHWETE LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.

June 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 and mining. 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 on the proposed development 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 proposed development is located in Middelburg, Mpumalanga Province. The proposed development site 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 T. Mlilo (2020) on the proposed development. The AIA/HIA conducted was very

comprehensive covering the entire site. The current study (Mlilo 2020) did not record any significant archaeological or heritage resources along the proposed project site.

Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources along the proposed project 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 equipment. 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. Singo Consultants 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 and mining.

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 archaeologist 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), ISS 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 Singo Consulting (Pty) Ltd will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or Singo Consulting 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.

APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED DEVELOPMENT EMP

Objective								
<ul style="list-style-type: none"> • 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, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from 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-NW.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA-NW 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.						

APPENDIX 3: HERITAGE MITIGATION MEASURES 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.	<p>Possible damage to previously unidentified archaeological and burial sites during construction phase.</p> <ul style="list-style-type: none"> • Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites. • Loss of historic cultural landscape. • Destruction of burial sites and associated graves • Loss of aesthetic value due to construction work • Loss of sense of place <p>Loss of intangible heritage value due to change in land use</p>	<p>In situations where unpredicted impacts occur construction activities must be stopped, and the heritage authority should be notified immediately.</p> <p>Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate.</p> <ul style="list-style-type: none"> • 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 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. 	<ul style="list-style-type: none"> • Contractor / • Project Manager • Archaeologist • Project EO 	<p>Fine and or imprisonment under the PHRA-G Act & NHRA</p>	<p>Monitoring measures should be issued as instruction within the project EMP.</p> <p>PM/EO/Archaeologists Monitor construction work on sites where such development projects commence within the farm.</p>

APPENDIX 4: 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.

APPENDIX 4: CV OF THE ARCHAEOLOGIST (Trust Miilo)

PERSONAL INFORMATION

ID NUMBER	690710 6184 187				
TITLE	Mr.	SURNAME	Miilo	FIRST NAME	Trust
GENDER	Male			DATE OF BIRTH	10 July 1969
CONTACT	Email: trust.miilo@gmail.com; Tel: +27 (0) 11 037 1565 (Bus) +27 71 685 9247 (Mobile)				
ADDRESSES	Bus. Physical: 65 Naaldehout Avenue, Heuweloord, Centurion, 0157 Cell: Fax: 086 652 9774 Web Site: www.sativatec.co.za				
QUALIFICATION: MA (ARCHAEOLOGY), BA Hons (Archaeology), [Univ. of Pretoria, Pretoria], PDGE, BA (Archaeology) UZ					

- BRIEF PROFILE**

Mr Trust Miilo

Mr Trust Miilo is the Archaeology/Heritage specialist at Sativa Travel and Environmental Consultants (Pty) Ltd. He is professional member of ASAPA and listed as an archaeologist and heritage specialist by Amafa aKwaZulu Natal and Eastern Cape Provincial Heritage Resources Agency (ECPHRA). Prior to joining Sativatec (Pty) Ltd, Trust Miilo served as the Archaeologist and Heritage Manager at Nzumbululo Heritage Solutions (RSA Ltd.) [www.nzumbululo.com]. He has also collaborated in a number of archaeological and Heritage work with Siyathembana 293Trading (Pty) Ltd, Finishing Touch (Pty) Ltd, Vhubvo Archaeo Heritage (Pty) Ltd. And Integrated Specialist Services (Pty) Ltd. He is a professional heritage manager and research consultant with more than 15 years of practice and experience in archaeology, heritage management and education management. He has vast experience in Heritage Impact Assessments, Heritage induction, public consultations, monitoring and pre-construction heritage mitigation. He has worked as a researcher in Heritage development and nomination of heritage sites such as Nelson Mandela Legacy sites, Shembe sites and Delmas Treason Trial just to mention a few. He has attended and participated in several academic and professional symposiums and conferences.

Mr Miilo has undertaken and assisted research teams in several projects in Sustainability, Energy & Environment (SEE); Environmental Health and Safety Solutions; Cultural Heritage Development (CHD) and

Applied Socio-Economic Research and Enterprise Development [RED]. His willingness to learn has seen him participate as a researcher and coordinator in research teams responsible, for example, in developing a Heritage Management Plans for O.R Tambo and Chris Hani memorial sites (2016) as well as the Nelson Mandela sites (2014 -2015), Integrated Development Planning (IDP) Environmental Toolkit (Mpumalanga Province [2011]), the Tourism Development Toolkit (Department of Environment and Tourism [2009]), etc. He is also effective in public engagements and consultations and has facilitated in massive grave relocation projects for several mining and infrastructure developments companies such as BHP Billiton 2013-2015 and Rhino Minerals 2009-2014 as well as Eskom and Road Agency Limpopo. He has conducted hundreds of Heritage Impact Assessment projects for Eskom minor reticulation projects in North West Province, KwaZulu Natal, Eastern Cape, Limpopo Province, Mpumalanga, Gauteng and the Free State Province as well as HIAs for various public and private developers (See SAHRIS website for HIA reports registered under Nzumbululo Heritage Solutions [Murimbika and Mlilo as the authors], Sativa and Integrated Specialist Services. The major highlight of his work was the Heritage Impact Assessment for the 700km, 765KV Gamma Kappa and Kappa Omega powerline in the Western Cape. Under Sativa Travel and Environmental Consultants, Mlilo served high profile companies such as GIBB, Afrimat, Eskom and Trans Africa Projects. Trust Mlilo has sound knowledge of heritage permit application processes and heritage mitigation processes. He is also effective in resource mobilization, team building and coordination. In addition, he has vast experience in project presentation and consultation.

• **EDUCATION**

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
University of Pretoria 2013 - 2015	MA in Archaeology
University of Pretoria 2009 – 2010	BA Honours in Archaeology
University of Zimbabwe, 2000	Post Graduate Diploma in Education (History)
University of Zimbabwe (1991-1993)	BA Gen. (Archaeology, African Languages & Linguistics)

LANGUAGE PROFICIENCY (Good, Fair, Poor)

Language	Reading	Speaking	Writing
English	Good	Good	Good
Shona	Good	Good	Good
Ndebele	Good	Good	Fair
Zulu	Fair	Good	Fair
Tsonga	Good	Good	Good
Tshivenda	Poor	Fair	Poor
Sesotho	Poor	Fair	Poor
Setswana	Poor	Fair	Poor
Xhosa	Poor	Fair	Poor
Afrikaans	Beginner's stage		

SKILLS MATRIX

Current Skills levels:

1 Had appropriate training only

2 Limited practical experience

3 Solid practical experience

4 Well versed, extensive experience

5 Expert, extensive experience

Type of Experience	Experience In months	Date Last used	Skill level
Communication and Marketing	+120	Current	4
Inter-personal and inter-governmental liaison	+120	Current	3
Organizational skills	+120	Current	4
Coordination	+120	Current	5
Facilitation	+120	Current	5
Planning	+120	Current	4
People Management	+120	Current	4
Time Management	+120	Current	5
Computer literacy (MS Office, Project management software, MAC OS)	+120	Current	3
Project management	+120	Current	4

- **COMPUTER SKILLS:**

- MS Operating System
 - Professional Level Competencies in MS Word, MS Excel, MS Power-point, PMS Publisher, and Internet.
- Mac Operating System
- Photoshop

ACADEMIC WORKS

- The challenges of cultural heritage management in South Africa: A focus on the Klasies River main site (Pending).

Title of Post-Graduate University Theses & Dissertations:

- **Master in Archaeology** (2013-2015), University of Pretoria) Management of the Klasies River main site along the Tsitsikamma Coast in the Eastern Cape Province.
- **BA Hons in Archaeology**. (2010, University of Pretoria): Comparison of conservation of archaeological sites under the jurisdiction of museums and sites in rural locations, the case BaKoni Malapa and Mahumane Late Iron Age sites in Limpopo Province.
- **Post Graduate Diploma in Education**. (2000, University of Zimbabwe): An assessment of attitudes towards use of media in the teaching of History in Secondary schools in Gweru, Zimbabwe

Selected Seminars, Lectures & Conference Papers

July 2014: Pan Africanist Archaeologist Conference. Johannesburg, South Africa Paper to be presented:

- *The challenges of heritage management in South Africa: A focus on the Klasies River main site.*

• WORK & PROFESSIONAL EXPERIENCE

PERIOD: 2015 to Present: Archaeologist/Heritage Manager at Integrated Specialist Services (Pty) Ltd [Web Site: www.sativatec.co.za] and emerging consultancy with highly experienced Heritage, Palaeontology and Ecology/Biodiversity Specialists. Sativa (Pty) Ltd 's main focus is to provide quality specialist services in Environmental and Heritage Management. Sativa (Pty) Ltd team has successfully completed a significant number of projects and is looking forward to building its profile in both Environmental and Heritage Management. The major clients are Bigtime Strategic Group Science and Research, Afrimat, Trans Africa Projects, Kimopax, Mawenje Consulting and Road Agency Limpopo. The following is a list of selected projects completed at Sativa (Pty). Ltd

- **ESKOM:** HIA study for the household electrification infrastructure of the proposed 22kv powerline for Norlim-Taung (15km) and Norlim Dikhuting (13km) in the Buxton area (Taung World Heritage Site) Greater Taung Municipality, North West Province.
- **GIBB:** HIA for proposed Assen / Tambotie Mining Right Application for the development of the Assen / Tambotie mine in Madibeng Local Municipality of North West Province
- HIA for proposed Eskom 13,5km, 132kv Randfontein Northern Strategy Power line and associated substations in Mogale City and Rand West City Local Municipalities of Gauteng Province
- HIA for proposed Eskom 132kv Westgate.Tarilton Power line in Mogale City and Rand West City Local Municipalities of Gauteng Province: Archaeological and Heritage Impact Assessment Report
- Phase 1 Heritage Impact Assessment for Eskom's proposed 11.065km 22kV Phase 3 Ngqeleni Electrification in Nyandeni Local Municipality of Eastern Cape Province

- HIA for proposed Eskom Wolvekrans Substation and 132kv Powerline in Mogale City and of Gauteng Province:
- HIA for Proposed Zandrivers Drift Mining Right Application in Madibeng Local Municipality of North West Province
- Phase 1 Heritage Impact Assessment for Eskom's proposed KwaZamoxolo normalization power line development at Noupoot in Umsobomvu Local Municipality, Northern Cape Province.
- Phase 1 Heritage Impact Assessment for Eskom's proposed 0.659km 22kv Murraysburg powerline move in the Pixley Ka Seme District Municipality, Northern Cape Province
- A Phase 1 Heritage Impact Assessment for the proposed, Tubatse Special Economic Zone in Burgersfort, Limpopo, under the jurisdiction of the Greater Tubatse Local Municipality of Limpopo Province.
- A Phase 1 Heritage Impact Assessment for the proposed construction of a new 20ML/D Pump station and bulk water pipeline in Middleburg, Steve Tshwete Local Municipality in Mpumalanga Province.
- A Phase 1 Heritage Impact Assessment for the proposed 5.5km 88kV power line and substation in Johannesburg Metropolitan Municipality, Gauteng Province.

PERIOD: 2008 to 2014: Archaeologist and Heritage Manager – Nzumbululo Holdings Limited [www.nzumbululo.com] (dynamic and market-leading consultancy providing innovative solutions in Applied Social-Economic Research and Enterprise Development services, Cultural Heritage Development, Sustainability, and Energy & Environment, Environmental Health and Safety).

Specialist Responsibilities: Assist in Project Management, fieldwork, community consultation and report compilation.

- Researcher for heritage and cultural landscape management projects that involve cultural resources management, heritage conservation management planning, heritage and environmental impact assessment, basic assessment, project management, public participation coordination, predevelopment planning specialists input coordination and liaison with compliant agencies such as government departments.

CORPORATE RESPONSIBILITIES

None

- **SPECIALIST POSITIONS AND PROFESSIONAL CONSULTANCY EXPERIENCE**

2007 - 2014 Archeological and Heritage Impact Assessment Studies

Have participated in phase 1 (scoping studies) to Phase 2 and 3 heritage and archeological impact assessment studies (mitigation excavations, rescue or salvage excavation and monitoring studies) for infrastructural developments including, powerlines, roads and other developments. The HIA and AIA portfolio during this period amounts to more than 300 projects across all nine provinces of South Africa and neighboring countries with an estimated value in excess of Million Rands in professional specialist's fees and billions in associated project budgets.

January 2008 – 2014: Environmental and Heritage Impact Assessment Study for Eskom SOC Limited 765kV Powerline Development Northern to Western Cape Provinces.

Field Archaeologist and Assistant Heritage Manager: Environmental Authorisation (EIA) and Heritage Impact Assessment (HIA) studies for Eskom SOC Transmission Gamma-Kappa & Kappa-Omega 765kV Powerlines Development in Northern & Western Cape Provinces in South Africa 2012-14. The Field archaeologist and heritage manager responsibilities involve coordinating a team of 4 (Archaeology, Palaeontology, Visual and Cultural Landscapes and Built Environment). This power transmission project is one of the largest and strategic transmission projects Eskom has ever embarked on in the past two decades.

July 2011 – March 2012: Research, Design and Development of the Delmas Treason Trials Commemorative Monument Project at Delmas Magistrate's Court, Mpumalanga Province.

Project Heritage Manager and Research Assistant for archival, oral and historical research on the 1985-1989 Delmas 22 and 1989 Delmas 4 Treason Trials (the last of the infamous apartheid treason trials). The project entails detailed legal history on treason trials, conceptualise, design and develop and commission a public commemorative monument in honour of the treason Trialists. Hundreds of hours of digital recordings of interviews with legal struggle icons such as George Bizos, the late Justice Arthur Chaskalson, Advocate Gcina Malindi, Justice Yacob, former Premier Popo Molefe and all surviving Delmas trialists and their families were collected, project report was generated and South Africa's first monument dedicated to commemoration of treason trials was developed and unveiled in March 2012 at Delmas Court in Delmas Town, Mpumalanga.

2009 – October 2010: eThekweni Metropolitan Shembe Baptist Nazareth Church Cultural Landscape Project

Commissioned by the eThekweni Metro Council as **Assistant Heritage Manager and Research Assistant** for the eThekweni Metropolitan Shembe Baptist Nazareth Church Cultural Landscape Project. The project involved conducting historical research into the evolution of Shembe Church, one of Africa's older and continuous independent churches that were founded by Isaiah Shembe in 1910. The second object was to propose, nominate the Shembe Cultural Landscape as Provincial Heritage Site under the protection of provincial and national heritage laws. The project closed with development of the cultural heritage Conservation Management Plan and nomination of Shembe cultural Landscape as Provincial Heritage Site

(Nomination Approved by the KwaZulu Natal Provincial Heritage Council (Amafa Council) on October. 18 2010).

2008- 2009: Mpumalanga Province Greening, Heritage and Greening Mpumalanga Flagship Program Management Unit [PMU]

Research Assistant (Heritage) for the Mpumalanga Provincial Government commissioned Mpumalanga Province Greeting, Heritage and Greening Mpumalanga Flagship Program Management Unit [PMU]. Mr Mlilo assisted in archaeological and heritage components of the project.

- **AUXILIARY PROFESSIONAL EXPERIENCE**

1996-2006: ‘O’ and “A” Level History Examiner (Ministry of Education in collaboration with Cambridge University, UK).

- **AUXILLIARY SPECIALIST SKILLS**

Key Management skills

- Applied Environment & Heritage Management Research
- Sustainable development programmes assessment.
- Project Management
- Adult Education

Other skills

- Performance management
- Public Finance Management
- School administration and teaching
- Professional Archaeologist.

- **PROFESSIONAL AFFILIATIONS**

- **Member of Association of Southern African Professional Archaeologists (ASAPA) No.396.** Accredited by Amafa akwaZulu Natali and Eastern Cape Provincial Heritage Agency

- **REFEREES**

Professor Sarah Wurz.

Institute for Human Evolution

University of Witwatersrand

Private Bag 3

Wits, 2050

South Africa

Tel: +27 (0) 11 717 1260; **Cell:** +082 449 3362

Email: sarah.wurz@wits.ac.za sarahwurz@gmail.com

Professor. Innocent Pikirayi

Department of Anthropology and Archaeology, Faculty of Humanities
University of Pretoria
Cr Lynnwood and University Roads
Hatfield
Pretoria
0038
SA

Tel: +27 (0) 12 4204661; **Cell:** +27 (0) 797841396; **Email:** innocent.pikirayi@up.ac.za

Mr Chrispen Chauke

Mapungubwe National Park & World Heritage Site,
Box 383, Musina,
0900

E-mail: chrischauke@yahoo.com| **Mobile:** + (27) 760446697 |

Work: 015 5347923