

# HERITAGE WALK DOWN REPORT

(REQUIRED UNDER SECTION 38 OF THE NHRA (No. 25 OF 1999))

## FOR THE PROPOSED THABAMETSI POWER STATION, LIMPOPO PROVINCE

**Type of development:**

Power Station

**Client:**

Savannah Environmental (Pty) Ltd

**Client info:**

Jo-Anne Thomas

**E – mail:** [joanne@savannahsa.com](mailto:joanne@savannahsa.com)

**Developer:** Thabametsi Power Company Proprietary Limited



**HCAC - Heritage Consultants**

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: [jaco.heritage@gmail.com](mailto:jaco.heritage@gmail.com)

Report Author:

Mr. J. van der Walt

Project Reference:


HCAC Project number 217066

Report date:

June 2017

**APPROVAL PAGE**

<b>Project Name</b>	<b>Thabametsi Power Station</b>
<b>Report Title</b>	Heritage walk down Thabametsi Power Station
<b>Authority Reference Number</b>	SAHRA Case ID 5091
<b>Report Status</b>	Final Report
<b>Applicant Name</b>	Thabametsi Power Company Proprietary Limited

	<b>Name</b>	<b>Signature</b>	<b>Qualifications and Certifications</b>	<b>Date</b>
<b>Document Compilation</b>	Jaco van der Walt		MA Archaeology ASAPA #159	June 2017

## DOCUMENT PROGRESS

### Distribution List

Date	Report Reference Number	Document Distribution	Number of Copies
14 June 2017	217066	Savannah Environmental	Electronic Copy

### Amendments on Document

Date	Report Reference Number	Description of Amendment
2017/06/19	217066 B	Addressed comments from the EAP.
2017/07/19	217066 C	Inclusion of ash dump

### **INDEMNITY AND CONDITIONS RELATING TO THIS REPORT**

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and HCAC reserves the right to modify aspects of the report including the recommendations if and when new information becomes available from ongoing research or further work in this field, or pertaining to this investigation.

Although HCAC exercises due care and diligence in rendering services and preparing documents, HCAC accepts no liability, and the client, by receiving this document, indemnifies HCAC against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by HCAC and by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this 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.

### **COPYRIGHT**

Copyright on all documents, drawings and records, whether manually or electronically produced, which form part of the submission and any subsequent report or project document, shall vest in HCAC.

The client, on acceptance of any submission by HCAC and on condition that the client pays to HCAC the full price for the work as agreed, shall be entitled to use for its own benefit:

- The results of the project;
- The technology described in any report; and
- Recommendations delivered to the client.

Should the applicant wish to utilise any part of, or the entire report, for a project other than the subject project, permission must be obtained from HCAC to do so. This will ensure validation of the suitability and relevance of this report on an alternative project.

## **EXECUTIVE SUMMARY**

An Archaeological Impact Assessment (van der Walt 2014) was conducted for the proposed Thabametsi Power station, Lephalale, Limpopo Province. Due to changes in the layout HCAC was appointed by Savannah Environmental to conduct a Heritage Walk Down of the final footprint in fulfilment of the conditions of the EMPr.

The impact area for the project covers an area of approximately 322.8 ha in extent. Due to the nature of cultural remains, with the majority of artefacts occurring below surface, an intensive foot-survey that covered of the Thabametsi Power Station (43.8 ha) and the 5-year Ashing facility areas (73.4ha) was conducted (Figure 8). A non-intrusive pedestrian survey was conducted over a period of 2 days (4 May & 13 July 2017) by a professional archaeologist. Identified sites are plotted on 1:50 000 maps and their GPS co-ordinates documented. In addition, digital photographs were used to document the area.

Due to the extent of the 25 Year ashing facility (205.6ha) and the lack of significant heritage resources within the study area (as evidenced from the current walk-through survey and other studies in the broader area (including the EIA for this project)). it was not considered necessary to undertake a walk-through survey of this area. The 25 Year ashing facility was therefore subjected to a high-level assessment. It is recommended that if this facility will be used in future, the site should be subjected to a heritage walkthrough survey prior to construction.

During the walkthrough, no heritage sites or artefacts of significance were recorded. The only heritage resource is the cultural landscape which, in the immediate vicinity of the study area, has been compromised by the construction of gravel roads, power lines and mining infrastructure.

Due to the absence of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that a chance finds procedure including paleontological heritage is implemented.

## Abbreviations

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BGG Burial Ground and Graves
BIA: Basic Impact Assessment
CFPs: Chance Find Procedures
CMP: Conservation Management Plan
CRR: Comments and Response Report
CRM: Cultural Resource Management
DEA: Department of Environmental Affairs
EA: Environmental Authorisation
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Programme
ESA: Early Stone Age
ESIA: Environmental and Social Impact Assessment
GIS Geographical Information System
GPS: Global Positioning System
GRP Grave Relocation Plan
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID Notification of Intent to Develop
NoK Next-of-Kin
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

*\*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

## **Glossary**

Archaeological site (remains of human activity over 100 years old)

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)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

## TABLE OF CONTENT

<b>1</b>	<b>INTRODUCTION</b> .....	<b>10</b>
<b>2</b>	<b>PROJECT DESCRIPTION</b> .....	<b>14</b>
2.1	GENERAL DESCRIPTION OF THE AFFECTED LANDSCAPE - AREA SURVEYED .....	14
2.2	METHODOLOGY .....	16
2.3	SPECIALIST QUALIFICATIONS.....	16
2.4	PHYSICAL SURVEYING.....	16
<b>3</b>	<b>LEGISLATIVE REQUIREMENTS</b> .....	<b>18</b>
3.1	SITE SIGNIFICANCE AND FIELD RATING .....	19
3.2.	IMPACT ASSESSMENT METHODOLOGY .....	21
<b>4.</b>	<b>PROJECT HISTORY</b> .....	<b>22</b>
<b>5.</b>	<b>FINDINGS OF THE WALK DOWN SURVEY</b> .....	<b>22</b>
5.1.	BUILT ENVIRONMENT (SECTION 34 OF THE NHRA) .....	22
5.2.	ARCHAEOLOGICAL AND PALAEOLOGICAL RESOURCES (SECTION 35 OF THE NHRA) .....	22
5.3.	BURIAL GROUNDS AND GRAVES (SECTION 36 OF THE NHRA).....	22
5.4.	CULTURAL LANDSCAPES, INTANGIBLE AND LIVING HERITAGE. ....	22
5.5.	BATTLEFIELDS AND CONCENTRATION CAMPS .....	23
<b>6.</b>	<b>ASSUMPTIONS AND LIMITATIONS</b> .....	<b>23</b>
<b>7.</b>	<b>IMPACT ASSESSMENT</b> .....	<b>23</b>
7.1.	POTENTIAL IMPACT.....	23
<b>8.</b>	<b>CONCLUSION AND RECOMMENDATIONS</b> .....	<b>25</b>
8.1.	CHANCE FIND PROCEDURES.....	25
<b>9.</b>	<b>REFERENCES</b> .....	<b>26</b>
<b>10.</b>	<b>APPENDICES:</b> .....	<b>27</b>
	CURRICULUM VITAE OF SPECIALIST .....	27



**LIST OF FIGURES**

FIGURE 1. PROVINCIAL LOCALITY MAP INDICATING THE STUDY AREA IN BLUE. .... 11

FIGURE 2. REGIONAL LOCALITY MAP INDICATING THE STUDY AREA IN BLUE. .... 12

FIGURE 3: GOOGLE IMAGE OF THE STUDY AREA..... 13

FIGURE 4. GENERAL SITE CONDITIONS. .... 15

FIGURE 5. GENERAL SITE CONDITIONS. .... 15

FIGURE 6. GENERAL SITE CONDITIONS. .... 15

FIGURE 7. GENERAL SITE CONDITIONS. .... 15

FIGURE 8. TRACK LOGS OF THE SURVEY CONDUCTED IN BLACK WITH THE STUDY AREA IN BLUE. .... 17

**LIST OF TABLES**

TABLE 1.IMPACT ASSESSMENT TABLE..... 24

## **1 INTRODUCTION**

HCAC was appointed by Savannah Environmental to conduct a Heritage Walk Down for the final layout of the Thabametsi Power station, Lephalale, Limpopo Province (Figure 1 – 3). This is in fulfilment of the requirements of one of the Environmental Authorisation conditions. The aim of the study is to survey the proposed development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of the HIA/AIA for the proposed project; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions.

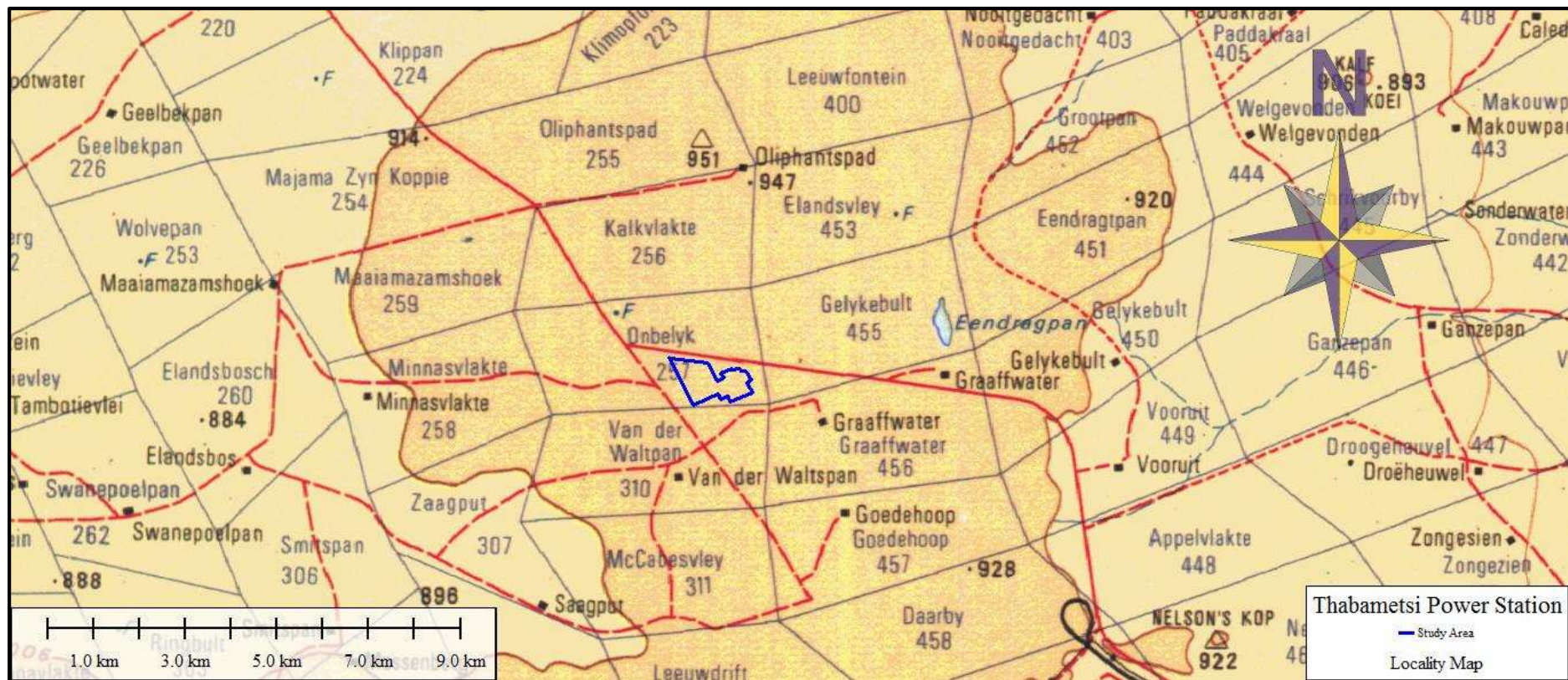


Figure 1. Provincial locality map indicating the study area in blue.

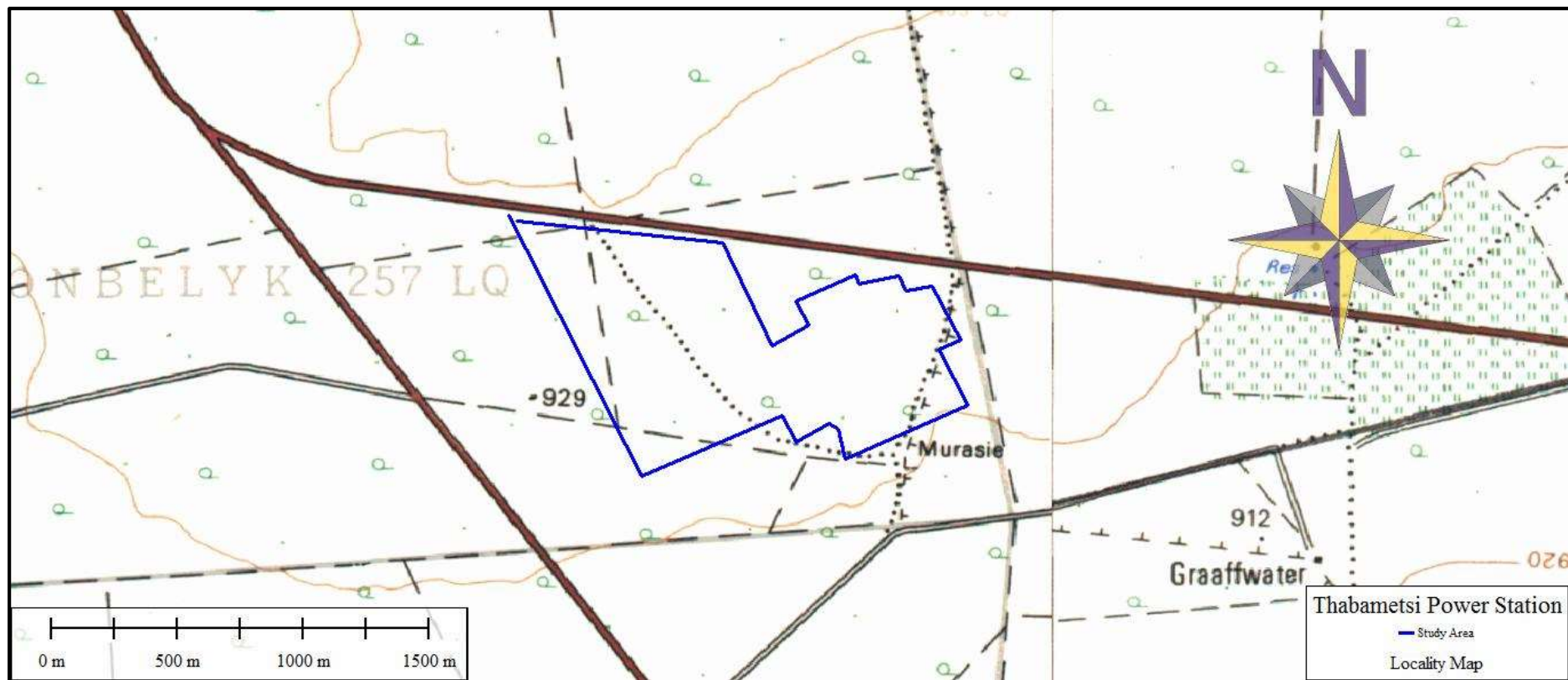


Figure 2. Regional locality map indicating the study area in blue.



Figure 3: Google image of the study area.

## **2 PROJECT DESCRIPTION**

The proposed power plant includes the following associated infrastructure as part of the Thabametsi Coal-Fired Power Station layout proposal:

- » Power Plant
- » Coal Stockpile
- » Raw water dam
- » Ash dump
- » Pollution control dams

### **2.1 General Description of the Affected Landscape - Area Surveyed**

The study area is located approximately 28km to the north west of Lephalale. The site is relatively flat, characterised by sand without any major topographical features like pans or rocky outcrops. The vegetation is predominantly Limpopo Sweet Bushveld vegetation in the Savannah biome (Mucina & Rutherford 2006). Historical imagery on Google earth indicates that the land has been fallow for a number of years and mostly used for cattle and game farming.



Figure 4. General site conditions.



Figure 5. General site conditions.



Figure 6. General site conditions.



Figure 7. General site conditions.

## **2.2 Methodology**

This Heritage Walk Down report was compiled by HCAC for the proposed development and construction of the Thabametsi Power Station based on the requirements of the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (no 107 of 1998).

The process consisted of three phases:

- Phase 1, review of the existing HIA/AIA for the proposed project;
- Phase 2, the physical surveying of the area on foot and by vehicle;
- Phase 3, reporting the outcome of the study.

## **2.3 Specialist Qualifications**

Jaco van der Walt has been practising as a CRM archaeologist for 15 years. He obtained an MA degree in Archaeology from the University of the Witwatersrand focussing on the Iron Age in 2012 and is a PhD candidate at the University of Johannesburg focussing on Stone Age Archaeology with specific interest in the Middle Stone Age (MSA) and Later Stone Age (LSA). Jaco is an accredited member of ASAPA (#159) and have conducted more than 500 impact assessments in Limpopo, Mpumalanga, North West, Free State, Gauteng, KZN as well as he Northern and Eastern Cape Provinces in South Africa.

Jaco has worked on various international projects in Zimbabwe, Botswana, Mozambique, Lesotho, DRC Zambia and Tanzania. Through this he has a sound understanding of the IFC Performance Standard requirements, with specific reference to Performance Standard 8 – Cultural Heritage.

## **2.4 Physical surveying**

The impact area for the project covers an area of approximately 93 ha. Due to the nature of cultural remains, with the majority of artefacts occurring below surface, an intensive foot-survey that covered the study area was conducted (Figure 8). A non-intrusive pedestrian survey was conducted over a period of 2 days (4 May & 13 July 2017) by a professional archaeologist. Identified sites are plotted on 1:50 000 maps and their GPS co-ordinates documented. In addition, digital photographs were used to document the area.



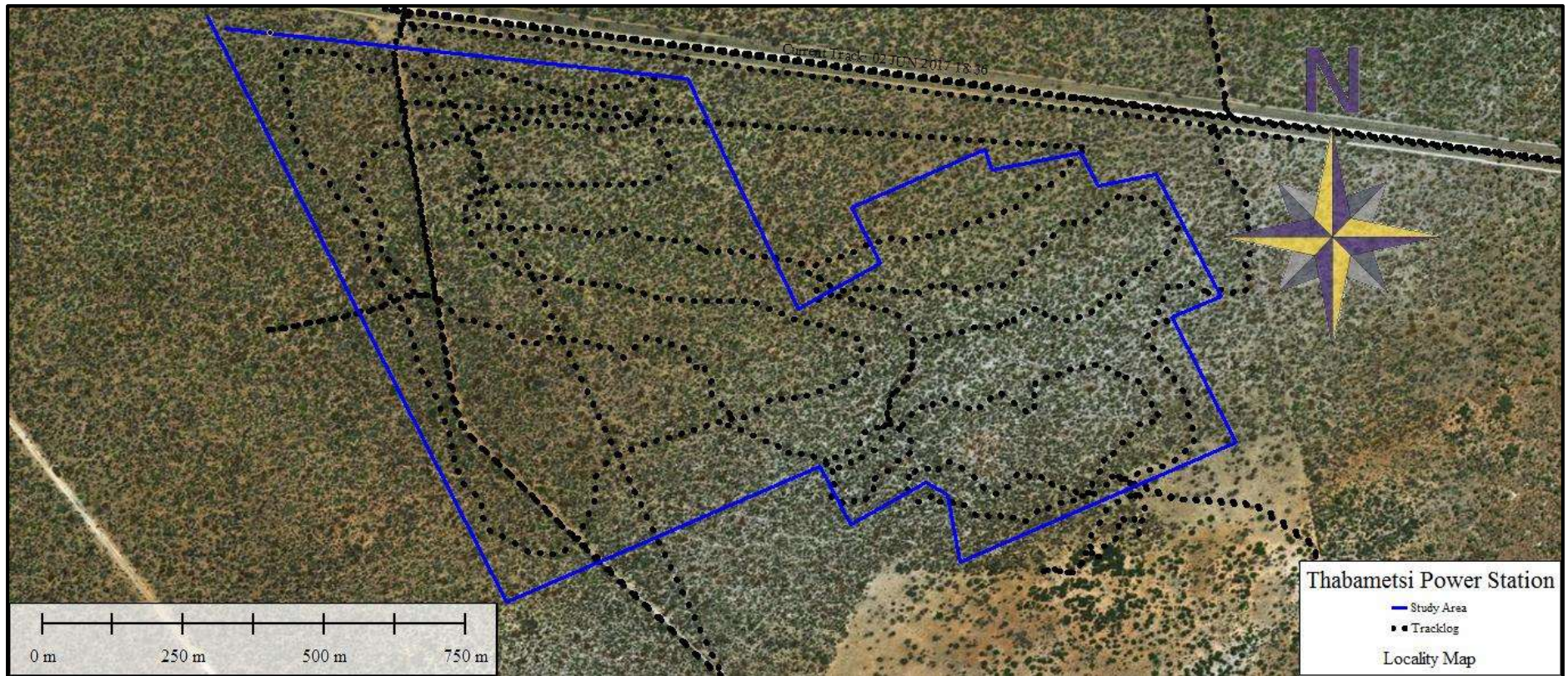


Figure 8. Track logs of the survey conducted in black with the study area in blue.

### **3 LEGISLATIVE REQUIREMENTS**

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- i. National Environmental Management Act (NEMA), Act 107 of 1998
- ii. National Heritage Resources Act (NHRA), Act 25 of 1999
- iii. Mineral and Petroleum Resources Development Act (MPRDA), Act 28 of 2002

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- i. National Environmental Management Act (NEMA) Act 107 of 1998:
  - a. Basic Environmental Assessment (BEA) – Section (23)(2)(d)
  - b. Environmental Scoping Report (ESR) – Section (29)(1)(d)
  - c. Environmental Impact Assessment (EIA) – Section (32)(2)(d)
  - d. Environmental Management Plan (EMP) – Section (34)(b)
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999:
  - a. Protection of Heritage Resources – Sections 34 to 36; and
  - b. Heritage Resources Management – Section 38
- iii. Mineral and Petroleum Resources Development Act (MPRDA) Act 28 of 2002:

### **3.1 Site Significance and Field Rating**

Section 3 of the NHRA distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa.

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites.

The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

- The unique nature of a site;
- The integrity of the archaeological/cultural heritage deposits;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined/is known);
- The preservation condition of the sites; and
- Potential to answer present research questions.

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

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

### 3.2. Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - \* medium-term (5-15 years), assigned a score of 3;
  - \* long term (> 15 years), assigned a score of 4; or
  - \* permanent, assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S=(E+D+M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

#### **4. Project History**

An AIA (van der Walt 2014) was conducted for the project as part of the environmental authorisation process and found the following: "Within the area investigated for the power station (on the farm Onbelyk) the demolished remains of two dwellings (Ruin 1 and 2) were identified. Ruin 2 was associated with a single grave of Hendrik Johannes van Wyk who passed away in 1959, it is therefore assumed that ruin 2 dates to the same period" (Van der Walt 2014 SAHRA Case ID 5091). A field based Palaeontological assessment was also conducted (Millstead 2014). SAHRA commented on the report and approved the project on the condition that regular monitoring by an ECO should be undertaken for the sediments of the Karoo Supergroup and Cenozoic regoliths.

#### **5. FINDINGS OF THE WALK DOWN SURVEY**

##### **5.1. Built Environment (Section 34 of the NHRA)**

No standing structures older than 60 years occur in the study area.

##### **5.2. Archaeological and palaeontological resources (Section 35 of the NHRA)**

No archaeological sites or material was recorded during the survey. Therefore, no further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 of the NHRA for the proposed development to proceed. According to the palaeontological report (Millstead 2014) the power station is underlain by the Clarens Formation of the Karoo Supergroup, which is of high palaeontological significance, and by the Eendragtpan Formation which is not well known from a palaeontological perspective, but could include vertebrate fossils of the transition between the Eodicynodon and the Cyanognathus Assemblage Zones. Any fossils identified in this formation would be of valuable research significance given the scarce information available on it. The author concluded that any negative impact can be mitigated and recommended palaeontological monitoring during the construction phase of the project.

##### **5.3. Burial Grounds and Graves (Section 36 of the NHRA)**

In terms of Section 36 of the Act no burial sites were recorded within the development footprint.

##### **5.4. Cultural Landscapes, Intangible and Living Heritage.**

Long term impact on the cultural landscape is considered to be negligible due to the lack of significant heritage sites in the study area and the immediate vicinity of the study area, has been compromised by the construction of gravel roads, power lines and mining infrastructure.

### **5.5. Battlefields and Concentration Camps**

There are no battlefields or concentration camp sites close to the study area.

## **6. ASSUMPTIONS AND LIMITATIONS**

Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

## **7. IMPACT ASSESSMENT**

### **7.1. Potential Impact**

The chance of impacting on unknown archaeological sites in the study area is considered to be negligible. Any direct impacts that did occur would be during the construction phase only and would be of low significance. Cumulative impacts occur from the combination of effects of various impacts on heritage resources. The importance of identifying and assessing cumulative impacts is that the whole is greater than the sum of its parts. In the case of the development, it will, with the recommended mitigation measures and management actions, not impact any heritage resources directly. However, this and other projects in the area could have an indirect impact on the larger heritage landscape. The lack of any heritage resources in the immediate area and the extensive existing mining activities minimises additional impact on the landscape.

#### **7.1.1. Pre-Construction phase:**

It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

#### **7.1.2. Construction Phase**

During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

#### **7.1.3. Operation Phase:**

No impact is envisaged during this phase.

**Table 1. Impact Assessment table.**

<p><b>Nature:</b> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.</p>		
	<b>Without mitigation</b>	<b>With mitigation (Preservation/ excavation of site)</b>
<b>Extent</b>	Local (1)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Low (2)	Low (2)
<b>Probability</b>	Not probable (2)	Not probable (2)
<b>Significance</b>	<b>16 (Low)</b>	<b>16 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	No resources were recorded	No resources were recorded.
<b>Can impacts be mitigated?</b>	Yes, a chance find procedure should be implemented.	Yes
<p><b>Mitigation:</b>            Due to the lack of apparent significant archaeological resources no further mitigation is required prior to construction.            A Chance Find Procedure should be implemented for the project should any sites be identified during the construction process.</p>		



## **8. CONCLUSION AND RECOMMENDATIONS**

No archaeological sites or material was recorded during the survey. Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study area. In terms of Section 36 of the Act no burial sites were recorded. If any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The study area is surrounded by gravel roads, power lines and mining infrastructure and the proposed development will not impact negatively on significant cultural landscapes or views. During the public participation process conducted for the project no heritage concerns was raised.

The impact area for the project covers an area of approximately 322.8 ha in extent. Due to the nature of cultural remains, with the majority of artefacts occurring below surface, an intensive foot-survey that covered of the Thabametsi Power Station (43.8 ha) and the 5-year Ashing facility areas (73.4ha) was conducted (Figure 8). A non-intrusive pedestrian survey was conducted over a period of 2 days (4 May & 13 July 2017) by a professional archaeologist. Identified sites are plotted on 1:50 000 maps and their GPS co-ordinates documented. In addition, digital photographs were used to document the area.

Due to the lack of significant heritage resources in the study area, the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that the palaeontological recommendations are adhered to (Millstead 2014). The following chance find procedure must be implemented by the environmental officer for the project.

### **8.1. Chance Find Procedures**

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the Environmental Officer and ECO of the chance find and its immediate impact on operations. The Environmental officer will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

## **9. REFERENCES**

- Millstead, B., July 2014. Full palaeontological heritage impact assessment report on the site of the proposed new Thabametsi power station and three associated alternative power line routes, near Lephalale, Limpopo Province.
- Mucina, L. & Rutherford, M.C. 2006. The vegetation map of South Africa, Lesotho and Swaziland. SANBI, Pretoria.
- National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)
- SAHRA Report Mapping Project Version 1.0, 2009
- Van der Walt, J. Archaeological Impact Assessment for The Proposed Thabametsi Coal-Fired Power Station, Lephalale, Limpopo Province

## 10. Appendices:

### Curriculum Vitae of Specialist

Jaco van der Walt  
Archaeologist

jaco.heritage@gmail.com  
+27 82 373 8491  
+27 86 691 6461

---

#### Education:

---

##### Particulars of degrees/diplomas and/or other qualifications:

<b>Name of University or Institution:</b>	University of Pretoria
<b>Degree obtained</b> :	BA Heritage Tourism & Archaeology
<b>Year of graduation</b> :	2001
<b>Name of University or Institution:</b>	University of the Witwatersrand
<b>Degree obtained</b> :	BA Hons Archaeology
<b>Year of graduation</b> :	2002
<b>Name of University or Institution</b> :	University of the Witwatersrand
<b>Degree Obtained</b> :	MA (Archaeology)
<b>Year of Graduation</b> :	2012
<b>Name of University or Institution</b> :	University of Johannesburg
<b>Degree</b> :	PhD
<b>Year</b> :	Currently Enrolled

---

#### EMPLOYMENT HISTORY:

---

2011 - Present: **Owner – HCAC (Heritage Contracts and Archaeological Consulting CC).**

2007 - 2010 : **CRM Archaeologist**, Managed the Heritage Contracts Unit at the University of the Witwatersrand.

2005 - 2007: **CRM Archaeologist**, Director of Matakoma Heritage Consultants

2004: **Technical Assistant**, Department of Anatomy University of Pretoria

2003: **Archaeologist**, Mapungubwe World Heritage Site

2001 - 2002: **CRM Archaeologists**, For R & R Cultural Resource Consultants, Polokwane

2000: **Museum Assistant**, Fort Klapperkop.

**Countries of work experience include:**

Republic of South Africa, Botswana, Zimbabwe, Mozambique, Tanzania, The Democratic Republic of the Congo, Lesotho and Zambia.

---

**SELECTED PROJECTS INCLUDE:**

---

**Archaeological Impact Assessments (Phase 1)**

Heritage Impact Assessment Proposed Discharge Of Treated Mine Water Via The Wonderfontein Spruit Receiving Water Body Specialist as part of team conducting an Archaeological Assessment for the Mmamabula mining project and power supply, Botswana  
Archaeological Impact Assessment Mmamethlake Landfill  
Archaeological Impact Assessment Libangeni Landfill

**Linear Developments**

Archaeological Impact Assessment Link Northern Waterline Project At The Suikerbosrand Nature Reserve  
Archaeological Impact Assessment Medupi – Spitskop Power Line,  
Archaeological Impact Assessment Nelspruit Road Development

**Renewable Energy developments**

Archaeological Impact Assessment Karoshoek Solar Project

**Grave Relocation Projects**

Relocation of graves and site monitoring at Chloorkop as well as permit application and liaison with local authorities and social processes with local stakeholders, Gauteng Province.  
Relocation of the grave of Rifle Man Maritz as well as permit application and liaison with local authorities and social processes with local stakeholders, Ndumo, Kwa Zulu Natal.  
Relocation of the Magolwane graves for the office of the premier, Kwa Zulu Natal  
Relocation of the OSuthu Royal Graves office of the premier, Kwa Zulu Natal

**Phase 2 Mitigation Projects**

Field Director for the Archaeological Mitigation For Booyseindal Platinum Mine, Steelpoort, Limpopo Province. Principle investigator Prof. T. Huffman  
Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline under directorship of Gavin Anderson.  
Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province. Under directorship of Prof T. Huffman.  
Field Director for the Phase 2 surface sampling of Stone Age sites effected by the Medupi – Spitskop Power Line, Limpopo Province

**Heritage management projects**

Platreef Mitigation project – mitigation of heritage sites and compilation of conservation management plan.

---

## MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:

---

- Association of Southern African Professional Archaeologists. Member number 159  
Accreditation:
  - Field Director                      Iron Age Archaeology
  - Field Supervisor                  Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation
- Accredited CRM Archaeologist with SAHRA
- Accredited CRM Archaeologist with AMAFA
- Co-opted council member for the CRM Section of the Association of Southern African Association Professional Archaeologists (2011 – 2012)

---

## PUBLICATIONS AND PRESENTATIONS

---

- A Culture Historical Interpretation, Aimed at Site Visitors, of the Exposed Eastern Profile of K8 on the Southern terrace at Mapungubwe.
  - J van der Walt, A Meyer, WC Nienaber
  - Poster presented at Faculty day, Faculty of Medicine University of Pretoria 2003
- 'n Reddingsondersoek na Anglo-Boereoorlog-ammunisie, gevind by Ifafi, Noordwes-Provinsie. South-African Journal for Cultural History 16(1) June 2002, with A. van Vollenhoven as co-writer.
- Fieldwork Report: Mapungubwe Stabilization Project.
  - WC Nienaber, M Hutten, S Gaigher, J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2004
- A War Uncovered: Human Remains from Thabantšho Hill (South Africa), 10 May 1864.
  - M. Steyn, WS Boshoff, WC Nienaber, J van der Walt
  - Paper read at the 12<sup>th</sup> Congress of the Pan-African Archaeological Association for Prehistory and Related Studies 2005
- Field Report on the mitigation measures conducted on the farm Bokfontein, Brits, North West Province .
  - J van der Walt, P Birkholtz, W. Fourie
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2007
- Field report on the mitigation measures employed at Early Farmer sites threatened by development in the Greater Sekhukhune area, Limpopo Province. J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2008
- Ceramic analysis of an Early Iron Age Site with vitrified dung, Limpopo Province South Africa.
  - J van der Walt. Poster presented at SAFA, Frankfurt Germany 2008

- Bantu Speaker Rock Engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga (*In Prep*)
  - J van der Walt and J.P Celliers
- Sterkspruit: Micro-layout of late Iron Age stone walling, Lydenburg, Mpumalanga. W. Fourie and J van der Walt. A Poster presented at the Southern African Association of Archaeologists Biennial Conference 2011
- Detailed mapping of LIA stone-walled settlements' in Lydenburg, Mpumalanga. J van der Walt and J.P Celliers
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Bantu-Speaker Rock engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga. J.P Celliers and J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Pleistocene hominin land use on the western trans-Vaal Highveld ecoregion, South Africa, Jaco van der Walt.
  - J van der Walt. Poster presented at SAFA, Toulouse, France. Biennial Conference 2016

---

**REFERENCES:**

---

1. Prof Marlize Lombard      Senior Lecturer, University of Johannesburg, South Africa  
E-mail: mlombard@uj.ac.za
2. Prof TN Huffman      Department of Archaeology Tel: (011) 717 6040  
University of the Witwatersrand
3. Alex Schoeman      University of the Witwatersrand  
E-mail: Alex.Schoeman@wits.ac.za