

# ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT STUDY FOR THE FOR PROPOSED GILIMBERG SOLAR PHOTOVOLTAIC (PV) FACILITY AND ASSOCIATED INFRASTRUCTURE IN THE LIMPOPO PROVINCE

**2026**

**ABANTU  
ENVIRONMENTAL  
SERVICES**

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## AUTHOR'S CREDENTIALS

A summary of their experience, qualifications, membership numbers and accreditation level

|                         |                                                                                                                                                         |
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## Acknowledgement

Tsimba Archaeological Footprints would like to acknowledge and respect the traditional Chiefs and other Traditional leaders in Limpopo as the cultural custodians and overseers of the lands, culture and customs of the lands we work on.

*"The cultural heritage we have inherited from our ancestors is the foundation upon which we must build our future."*

\_\_\_Thabo Mbeki

*"Heritage conservation safeguards the tangible and intangible expressions of our identity."*

\_\_\_ Amafa aKwaZulu-Natal

All information supplied to Tsimba in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorization. Confidential information has been stored securely and all archaeological ethics have been strictly adhered to during the process of making this report.

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## SPECIALIST DECLARATION OF INDEPENDENCE

I, \_\_\_\_\_ Roy Muroyi \_\_\_\_\_, declare that –

- *I act as the independent specialist in this application;*
- *I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;*
- *I declare that there are no circumstances that may compromise my objectivity in performing such work;*
- *I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;*
- *I will comply with the Act, Regulations and all other applicable legislation;*
- *I have no, and will not engage in, conflicting interests in the undertaking of the activity;*
- *I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;*
- *all the particulars furnished by me in this form are true and correct; and*
- *I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.*

**Signature of the Specialist**

A handwritten signature in black ink. It begins with a large, stylized capital letter 'R' enclosed within a circle. A horizontal line extends from the right side of the circle, followed by a series of loops and a final vertical stroke that ends in a small crossbar, resembling a stylized 'M' or 'Y'.

**DOCUMENT INFORMATION**

| DOCUMENT INFORMATION ITEM                | DESCRIPTION                                                                                                                                                                                                                            |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Proposed development and location</b> | Phase 1 Heritage Impact Assessment for proposed Gilimberg solar photovoltaic (PV) facility and associated infrastructure in the Limpopo Province.                                                                                      |
| <b>Purpose of the study</b>              | To carry out a Phase 1 Heritage Impact Assessment to determine the presence/absence of archaeological assess their archaeological significance in terms of the South African Heritage Resources Act (25 of 1999) and SHARA guidelines. |
| <b>Municipalities</b>                    | Mogalakwena Local Municipality and Waterberg District Municipality                                                                                                                                                                     |
| <b>EAP</b>                               | Abantu Environmental Services (Pty) Ltd                                                                                                                                                                                                |
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## EXECUTIVE SUMMARY

**Heritage Impact Assessments (HIAs) are studies conducted by qualified heritage specialists that aim to identify heritage resources within a proposed development area, assess their significance, assess the impact of the development on the heritage resources and provide relevant mitigation measures to alleviate impacts to the heritage resources.**

**Tsimba Archaeological Footprints (Pty) Ltd** was requested by **Abantu Enironmental Consultants (Pty) Ltd** to conduct a **Phase 1 Heritage Impact Assessment (HIA)** for the proposed Gilimberg solar photovoltaic (PV) facility and associated infrastructure in the Limpopo Province.

The scope of work for this **Heritage Impact Assessment** was to assess the footprint of the proposed development footprint for any cultural heritage resources, assess their significance and propose mitigation measures to be included in the **EMPr**.

The proposed development area is 683.99 ha in total and therefore triggers section **38(1) (a) of the National Heritage Resources Act (NHRA- Act No. 25 of 1999)** (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—any development or other activity which will change the character of a site—(i) exceeding 5 000 m<sup>2</sup> in extent.

The objective of the report is to fulfil the requirements of **SAHRA** in the in terms of **Section 38(1) of the NHRA** as read together with the **National Environmental Management Act, 1998 (Act No. 107 of 1998)**, as amended (**NEMA**).

The development may also impact on **Cultural Heritage Resources** such as graves, structures, archaeological and paleontological resources that are protected in terms of **Sections 34, 35, and 36 of the NHRA**. The field assessment followed systematic accepted archaeological standards. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the proposed project area.

### **The survey aimed to;**

- Examine the proposed site to identify any archaeological and cultural heritage sites, as defined by the **National Heritage Resources Act (NHRA- Act No. 25 of 1999)**.
- Provide a recording of any sites identified to a standard consistent with a site identification level, including significance assessments, details of the locations and extents of each site; and

- Assist in the development of site avoidance and management strategies, where necessary.

During the survey, no heritage resources were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations and site descriptions. Possible impacts were identified and mitigation measures are proposed in this report. The **South African Heritage Resources Agency (SAHRA)** and **National Heritage Resources Act (NHRA- Act No. 25 of 1999)** in Limpopo have vested **Limpopo Provincial Heritage Authority** as a commenting authority under section 38(8) of the NHRA. The **NHRA** require all heritage documents, compiled in support of an **Environmental Authorisation** application as defined by **NEMA EIA Regulations** section 40 (1) and (2), to be submitted to **Limpopo Provincial Heritage Authority** for commenting. Upon submission to the **Limpopo Provincial Heritage Authority** the project will be automatically given a case number as reference. As such the EIA report and its appendices must be submitted to the case as well as the EMP, once it's completed by the **Environmental Assessment Practitioner (EAP)**.

### Site-Location Model

Archaeologists who do research in the region generally accept a site-location model proposed by Maggs (1980). The model suggests that inland sites will be found in locations which bear the following:

- Limited to below an altitude of 1000 m asl;
- Situated on riverside or streamside locations, on deep alkaline colluvial soils; and
- In areas appropriate for dry-farming (with sufficient summer rainfall).

### Fatal Flaws

No fatal flaws are expected as a result of this project.



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**ABBREVIATIONS**

| <b>Acronyms</b> | <b>Description</b>                                       |
|-----------------|----------------------------------------------------------|
| AIA             | Archaeological Impact Assessment                         |
| ASAPA           | Association of South African Professional Archaeologists |
| CRM             | Cultural Resource Management                             |
| EAP             | Environmental Assessment Practitioner                    |
| EIA             | Environmental Impact Assessment                          |
| ESA             | Early Stone Age                                          |
| GIS             | Geographic Information System                            |
| GPS             | Global Positioning System                                |
| HIA             | Heritage Impact Assessment                               |
| LSA             | Late Stone Age                                           |
| LIA             | Late Iron Age                                            |
| MIA             | Middle Iron Age                                          |
| MSA             | Middle Stone Age                                         |
| SAHRA           | South African Heritage Resources Agency                  |

## *GLOSSARY*

|                      |                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Achievement          | ≠ Something accomplished, esp. by valour, boldness, or superior ability                                                              |
| Aesthetic            | ≠ Relating to the sense of the beautiful or the science of aesthetics.                                                               |
| Community            | ≠ All the people of a specific locality or country                                                                                   |
| Culture              | ≠ The sum total of ways of living built up by a group of human beings, which is transmitted from one generation to another.          |
| Cultural             | ≠ Of or relating to culture or cultivation.                                                                                          |
| Diversity            | ≠ The state or fact of being diverse; difference; unlikeness.                                                                        |
| Geological (geology) | ≠ The science which treats of the earth, the rocks of which it is composed, and the changes which it has undergone or is undergoing. |
| High                 | ≠ Intensified; exceeding the common degree or measure; strong; intense, energetic                                                    |
| Importance           | ≠ The quality or fact of being important.                                                                                            |
| influence            | ≠ Power of producing effects by invisible or insensible means.                                                                       |
| Potential            | ≠ Possible as opposed to actual.                                                                                                     |
| Integrity            | ≠ The state of being whole, entire, or undiminished.                                                                                 |
| Religious            | ≠ Of, relating to, or concerned with religion.                                                                                       |
| Significant          | ≠ important; of consequence                                                                                                          |
| Social               | ≠ Living, or disposed to live, in companionship with others or in a community, rather than in isolation.                             |
| Spiritual            | ≠ Of, relating to, or consisting of spirit or incorporeal being.                                                                     |
| Valued               | ≠ Highly regarded or esteemed                                                                                                        |

## 1.0 INTRODUCTION

Summary of project description and why the developer is proposing to construct and/or develop and how it will benefit local economic market needs. Also summarises the application for approvals process, the name of the local heritage authority and the name of the heritage specialist company who were appointed to conduct the survey.

**Abantu Environmental Consultants (Pty) Ltd** an independent **Environmental Assessment Practitioner (EAP)** is conducting an **Environmental Impact Assessment process** for the proposed Gilimberg solar photovoltaic (PV) facility and associated infrastructure in the Limpopo Province.

As part of the EIA process, **Tsimba Archaeological Footprints (Pty) Ltd** was requested to conduct a **Phase 1 Heritage Impact Assessment (HIA)** for the proposed solar photovoltaic (PV) facility and associated infrastructure project.

Historically, land proposed for the solar project was utilised primarily for pastoral farming, with cattle herding forming a central component of both pre-colonial and colonial land-use systems. Prior to formal cadastral survey, indigenous Northern Sotho-speaking communities practised mixed agro-pastoralism, combining crop cultivation with seasonal cattle grazing across open rangelands.

The proposed development area up to measures 683.99 ha in total and therefore triggers section **38(1) (a) of the National Heritage Resources Act (NHRA- Act No. 25 of 1999)** (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—any development or other activity which will change the character of a site—(i) exceeding 5 000 m<sup>2</sup> in extent.

The objective of the report is to fulfil the requirements of **SAHRA** in the in terms of **Section 38(1) of the NHRA** as read together with the National **Environmental Management Act, 1998 (Act No. 107 of 1998)**, as amended (NEMA).

The development may also impact on Cultural Heritage Resources such as graves, structures, archaeological and paleontological resources that are protected in terms of **Sections 34, 35, and 36 of the NHRA**. The field assessment followed systematic accepted archaeological standards. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the proposed project area.

**-Aims of the Study -**

- ✧ Fulfil the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, and section 38.
- ✧ To identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed development project.
- ✧ Identify and describe impacts to archaeological and cultural resources, including intangible heritage resources.
- ✧ Make recommendations on mitigation measures.
- ✧ Identify and describe management measures.

- ✧ Survey the project area to identify and describe sites of archaeological, historical or cultural interest affected by the proposed development.
- ✧ Liaise with the local communities and stakeholders (if applicable) with regards to the impact of the development on the heritage resources.
- ✧ Produce a detailed technical HIA report describing the importance or significance of known heritage resources and whether these resources need to be conserved/protected
- ✧ Describe, in an HIA report, the procedures for mitigation of sites and provide an indication of time required for these management measures to be implemented.

## 2.0 DESCRIPTION OF THE RECEIVING ENVIRONMENT

**Description of soil typology, basic geology and settlement patterns, these may be used as an indicator for heritage sensitivity in specific cases or area**

The proposed development site is located about 60 kilometres Northwest of the city of Polokwane. The site is surrounded by small rural areas of Jupiter, Mars, Ga-Matlapa, Ga-Mashashane, Sekuruwe and Raowele. The surrounding area is characterised by low-density rural settlement patterns, agricultural land use, and communal villages, reflecting a mixed farming and traditional land-use context.

The topography is characterised by low hills, shallow valleys, and occasional rocky outcrops and seasonal drainages, with a network of ephemeral streams and shallow drainage lines. The proposed development site is accessible via a network of regional and local roads connecting the surrounding rural settlements. The nearest major route is the R521, which links Polokwane to Mokopane and passes near several localities in the area. Access to the site itself is likely via smaller gravel or farm roads connecting the settlements of Jupiter, Mars, Ga-Matlapa, and Raowele.

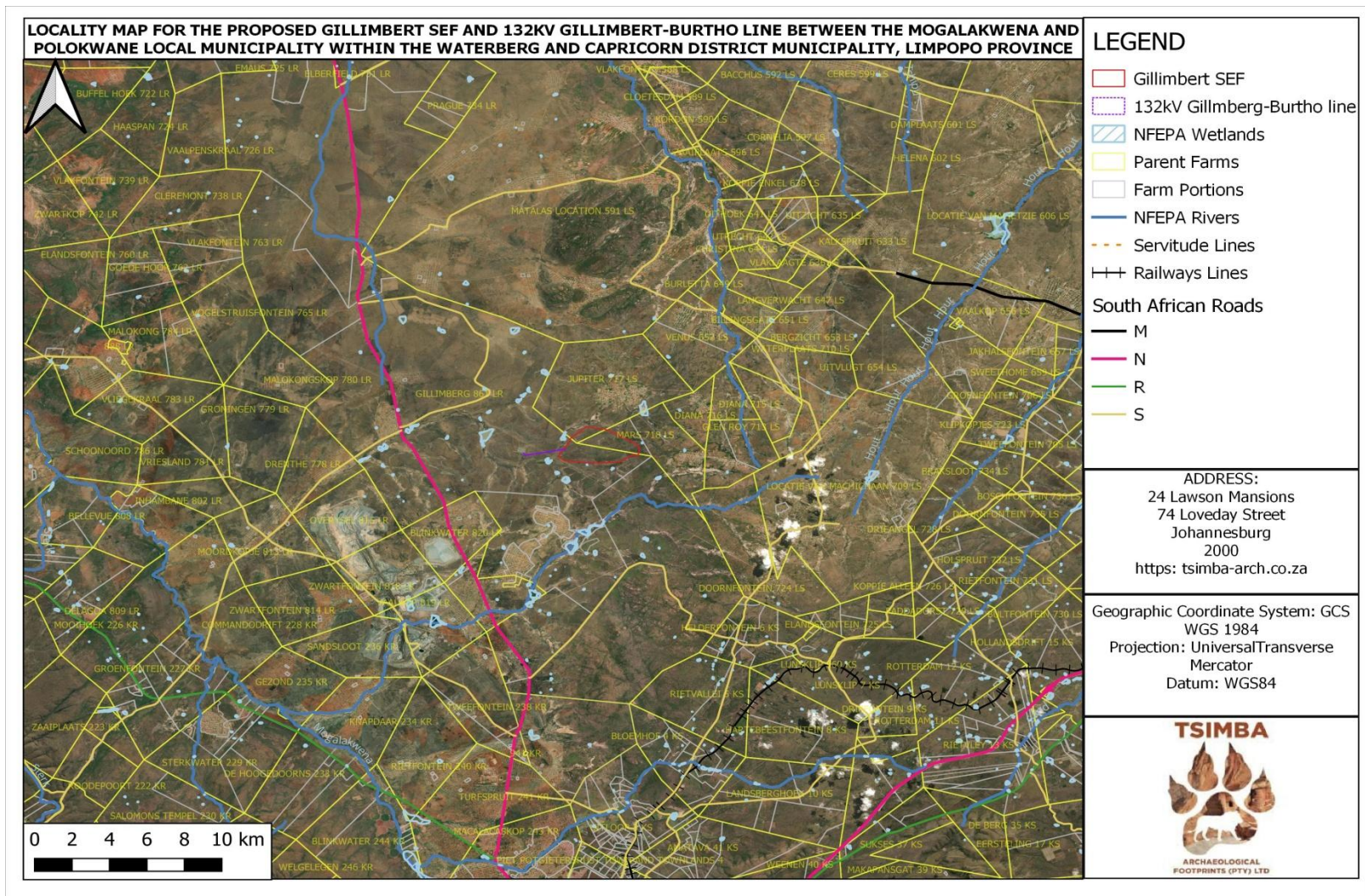


Figure 1: Locality Map of the proposed development site

### 3.0 METHODOLOGY

#### The methodology used to identify potential impacts and risks to heritage resources.

##### -Literature review-

The methodology used in this HIA is based on a comprehensive understanding of the current or baseline situation; the type, distribution and significance of heritage resources as revealed through desk-based study and additional data acquisition, such as archaeological investigations, built heritage surveys, and recording of crafts, skills and intangible heritage. This is systematically integrated using matrices with information on the nature and extent of the proposed engineering and other works to identify potential. The following tasks were also undertaken in relation to the cultural heritage and are described in this report:

The background information search of the proposed development area was conducted following the site maps from the client. Sources used in this study included:

- Published academic papers and HIA and **Palaeontological Impact Assessment (PIA)** studies conducted in and around the region where the proposed infrastructure development will take place;
- Available archaeological literature on the study area was consulted;
- The **South African Heritage Resources Information System (SAHRIS)** website and the National Data Base were consulted to obtain background information on previous heritage surveys and assessments in the area; and other planning documents.
- Map Archives - Historical maps of the proposed area of development and its surrounds were assessed to aid information gathering of the proposed area of development and its surrounds.

##### -Field Survey-

The field survey for the proposed development was conducted by Tsimba Archaeological Footprints through driving and walking in February 2026. A ground survey, following standard and accepted archaeological procedures, was conducted. The survey also paid special attention to disturbed and exposed layers of soils such as eroded surfaces. These areas are likely to exposed or yield archaeological and other heritage resources that may be buried underneath the soil and be brought to the surface by animal and human activities including animal barrow pits and human excavated grounds.

### **-Data Consolidation and Report Writing**

Data captured on the development area (during the field survey) by means of a desktop study and physical survey is used as a basis for this HIA. This data is also used to establish assessment for any possible current and future impacts within the development footprint. This includes the following:

- Assessment of the significance of the cultural resources in terms of their archaeological, built environment and landscape, historical, scientific, social, religious, aesthetic and tourism value;
- A description of possible impacts of the proposed development, especially during the construction phase, in accordance with the standards and conventions for the management of cultural environments;
- Proposal of suitable mitigation measures to minimise possible negative impacts on the cultural environment and resources that may result during construction;
- Review of applicable legislative requirements, that is, the **NEMA (read together with the 2014 EIA Regulations of 2014, as amended)** and the NHRA.
- The consolidation of the data collected using the various sources as described above;
- Acknowledgement of impacts on heritage resources (such as unearthed graves) predicted to occur during construction; and **Geographical Information Systems (GIS)** mapping of known archaeological sites and maps in the region.
- A discussion of the results of this study with conclusions and recommendations based on the available data and study findings.



## 4.0 LEGISLATIVE FRAMEWORK

Summary of which legislation (including the relevant NHRA section) and local by-laws are triggered by the proposed development, and those identified are subsequently outlined and quoted.

**Abantu Environmental Consultants (Pty) Ltd** has been appointed to obtain an **Environmental Authorization (EA)** in terms of the **National Environmental Management Act, 1998** (NEMA, Act No. 107 of 1998) which involves the submission of an Environmental Impact Assessment Report.

As part of the process **Abantu Environmental Consultants (Pty) Ltd** also requested **Tsimba Archaeological Footprints** to conduct a **heritage impact assessment (HIA)** as part of the EA process. As part of the process **Abantu Environmental Consultants** also requested **Tsimba Archaeological Footprints** to conduct a **heritage impact assessment (HIA)** as part of the EA process.

The proposed development area is 683.99 ha in total and therefore triggers **Section 38(1) of the NHRA**. **Section 38 of the NHRA** requires that a **Heritage Impact Assessment (HIA)** is required for certain kinds of development such as rezoning of land greater than 10 000 sq m in extent or exceeding 3 or more sub-divisions, or for any activity that will alter the character of a site greater than **5000 sqm**.

The objective of the report is to fulfil the requirements of **SAHRA** in terms of **Section 38(1) of the NHRA** as read together with the **National Environmental Management Act, 1998 (Act No. 107 of 1998)**, as amended (NEMA).

The development may also impact on Cultural Heritage Resources such as graves, structures, archaeological and paleontological resources that are protected in terms of **Sections 34, 35, and 36 of the NHRA**. The field assessment followed systematic accepted archaeological standards. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the proposed project area.

A **Phase 1 HIA** is a pre-requisite for development in South Africa as prescribed by **SAHRA** and stipulated by legislation.

The overall purpose of heritage specialist input is to:

- Identify any heritage resources, which may be affected;

## CULTURAL HERITAGE IMPACT ASSESSMENT REPORT

- Assess the nature and degree of significance of such resources;
- Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- Assess the negative and positive impact of the development on these resources; and
- Make recommendations for the appropriate heritage management of these impacts.



## 5.0 ARCHEOLOGICAL AND HISTORICAL BACKGROUND OF THE STUDY AREA

**Archaeological background of a place encompasses the intricate interplay of social, geographical, and cultural elements that shape its identity. This background is often reflected in the evolution of place names, which carry archaeological memories of communities, conflicts, beliefs, and policies**

The Limpopo Province, like most provinces in South Africa has a rich Iron Age archaeological sequence which is mostly visible through Stone Walled Structures (SWS) and ceramics. The Pietersburg area (Polokwane) of Limpopo has a multi-layered occupation sequence which features Eiland, Moloko and Letaba ceramic facies spanning the so-called Middle Iron Age and the Later Iron Age (AD1500 – 1900) (van Schalkwyk, 1987; Loubser, 1994; Huffman, 2007). The Moloko and Letaba ceramic facies are associated with Sotho Tswana and Ndebele speaking communities in that order (Pistorius, 1992; Huffman, 2007), while the Eiland ceramics are associated with the 'Eiland people' because their identity has not been archaeologically determined (e.g. Biemont, 2014). The Eiland ceramics were first discovered at Eiland Salt Works in Mpumalanga (Biemont, 2014) but this facies is scattered across South Africa and some parts of Botswana where it was found at Molepolole (Biemont, 2014) and Central Kalahari Game Reserve, and Sekoma Pan (Campbell, 1989). Closer to Pietersburg (Polokwane), this facies were found in the Soutpansberg mountain range (Loubser, 1991), and these communities appeared to have been in touch with Sotho Tswana speakers (Biemont, 2014).

Researchers have combined oral histories, archaeological evidence and ethnography to study the history of the Ndebele in the old Pietersburg area which is now called Polokwane (Loubser, 1994). This Ndebele community is also known the Northern Transvaal Ndebele, following the colonial terminology used in ethnology (Loubser, 1994). Following oral history accounts, it is argued that the Pietersburg area was occupied by at least six groups in the period extending from AD1600 to AD1900. Following this, archaeological prospection of the Pietersburg area has revealed three distinctive typologies of Stone Walled Structures (Loubser, 1994). It follows that these distinctive stone walled structures also had three distinctive ceramic typologies suggesting three distinctive groups to have occupied these sites (Loubser, 1994). Following the classificatory scheme highlighted above, Loubser (1994) associated Group 1 type sites with the Eiland communities because the sites contained Eiland pottery. It is highlighted that these sites are geographically located on hilltops, and in the true tradition of colonial interpretation, this suggests that these sites were built in response to political upheaval (e.g.

Boeyens, 2003). Although no scientific dating was conducted on these sites, they have been tentatively dated to around AD 1000 (Loubser, 1994).

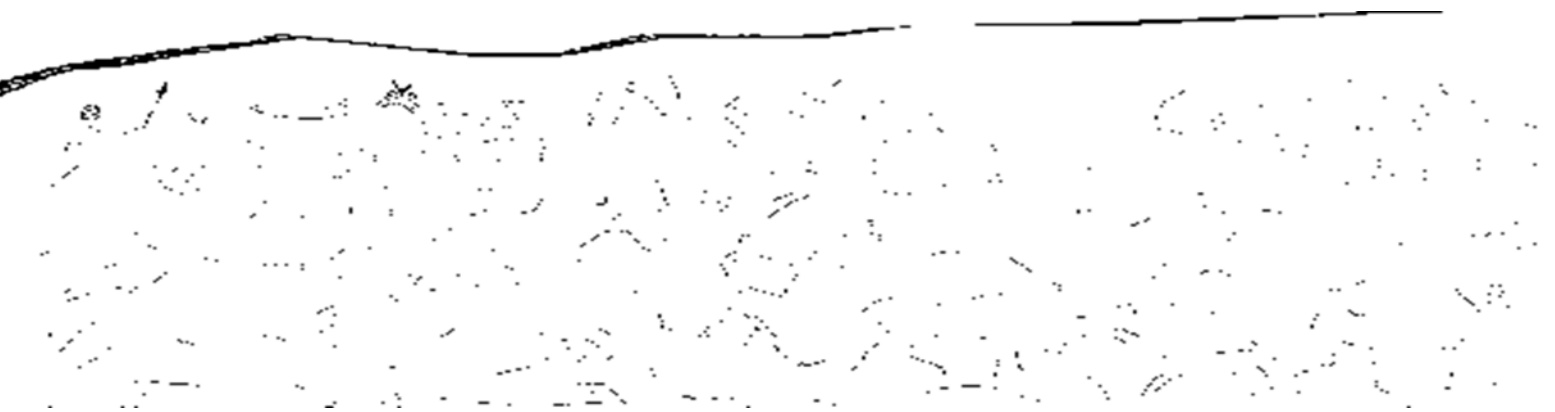
It is argued that the Group II type sites mentioned above were authored by the Ndebele speaking communities, while some of them were built by the Koni communities. One of the sites falling under this group was radio-carbon dated to the 17<sup>th</sup> century (AD1600s). These settlements are located at the base of hills or on the slopes of valleys, and they all curiously face north. Lastly, researchers associate Group III sites with the Ndebele, Koni and Shangaan communities. Two of the sites falling under this group were radio-carbon dated between AD1850 – 1900(Loubser, 1994) suggesting contact with Europeans at some point. These settlements share some characteristics with Group II sites in terms of location and physical attributes. However, these settlements contained scalloped walling common among the Sotho Tswana (Pistorius, 1992; Fredriksen, 2007; Jordan, 2016). Additionally, two of the sites in the class are located on hilltops which could suggest royalty (see Boeyens, 2003; Mangoro, 2018). Loubser (1994) highlights that Group II and Group III sites contain similar pottery assemblages belonging to two distinctive styles namely; Sotho Tswana (Moloko) and Venda and North Eastern Sotho archaeologically known as *Letaba* (Loubser, 1994). Through analysis, the settlements in the three groups follows a chronological sequence of old to recent in the above order revealing successive occupation of the region for about a millennium.

Oral histories of the so-called Northern Ndebele suggest multiple origins of these communities, and the archaeological record of the old Pietersburg area appears to corroborate this. Loubser (1994) argues that the above ceramic styles reflect the distinctive origins of the Ndebele in the oral histories. Oral histories are replete with weaknesses which may render them unreliable. However, when they are corroborated with archaeological evidence such as in this scenario, they can be a formidable source of historical evidence. There is a curious absence of Nguni pottery in this region, yet it is widely believed that the Ndebele are connected to other Nguni speakers in the KwaZulu Natal area and its surrounding areas. Researchers argue that Nguni speaking people moved out of the Hlubi region of the modern KwaZulu Natal province and settled in the Old Transvaal to become archaeologically known as 'Northern Ndebele'. These Ndebele speakers allegedly split so that one group settled in the Mokopane area of Polokwane (Pietersburg) and another. The curious absence of Nguni like pottery assemblages in the region however persuaded researchers to speculate that the Northern Ndebele had a long history with the Venda and Northern Sotho rather than the Nguni speakers in the KwaZulu Natal region (Loubser, 1994).

The decision to occupy the Pietersburg Plateau (Polokwane) by the Ndebele would have been influenced by several reasons. Since agriculture was an integral component of the Ndebele economy in the so called Iron Age period, the choice of location would have been influenced by suitability of the biophysical qualities of the area. According to Loubser (1994), the Pietersburg Plateau is suitable for subsistence agriculture, and to date, the agricultural footprint is still visible on the landscape. In addition, Loubser notes that two ridges to the south of Pietersburg were used as grazing lands by the Ndebele farmers.

Loubser (1994) excavated one site each from the three classes discussed above. The excavations in a Group 1 site produced human remains, hut floors, ceramics, floor smothers, upper grindstones and bone pendants (Loubser, 1994). Group II excavations produced hut floors, floor smothers, stone milk strainers, pottery discs among other material culture. Finally, Group III sites yielded among other things upper grindstones, faunal remains (e.g. of cattle) iron ring, soap-stone slabs etc. In the analysis of these findings, Loubser spotted Eiland pottery which was excavated in the Old Eastern Transvaal (Evers, 1975). He argues that this pottery predates the oral histories of the Pietersburg Ndebele following tentative dating of between AD850 – 1200 (Loubser, 1994: 138). In addition to the Eiland ceramics, Moloko pottery of the Sotho Tswana speakers (Evers, 1981) tentatively dating to the 14<sup>th</sup> century (Loubser, 1991) was also excavated. Interestingly, Moloko pottery appears at the same time as the Letaba pottery in areas south of Pietersburg and discontinues when Mzilikazi ravaged the area during the Mfecane, on his way to modern day Zimbabwe. Although the Letaba pottery has been strongly linked to the Ndebele, Loubser (1991) convincingly linked the same pottery to Venda speaking communities. Loubser argues that the Letaba pottery was a mixture of Moloko pottery of the Sotho Tswana and the Khami pottery of the Shona in the Soutpansberg area. In addition, Loubser (1991) articulated that only the Letaba pottery occurs at Soutpansberg during mid-16<sup>th</sup> century and early 20<sup>th</sup> century, a period in which Venda speaking peoples are known to have occupied the area.

The long Iron Age occupation sequence of the Pietersburg area is further discussed by Roodt (2010) who discovered archaeological resources at the Edupark complex. In their unpublished report, Roodt discovered human remains dating to 991 AD. They also discovered cow dung dating to the late 1600s while a midden dated to 1018AD. These findings fit into the common narrative that the Pietersburg area has an extensive history of occupation by African communities long before the Europeans arrived.



## Historical era

The Jupiter was originally surveyed as a farm under the land allocation system of the former South African Republic (ZAR) during the late nineteenth century. Like many properties in the Waterberg region, it was established through cadastral survey and registered in the Deeds Office rather than formally proclaimed as a township in the Government Gazette. The area developed primarily as an agricultural farming unit, with subsequent subdivision and rural occupation over time. As such, Jupiter constitutes a farm-based rural landscape rather than a planned urban settlement, and its historical development reflects broader patterns of colonial land survey, agricultural expansion, and rural land use in the Waterberg region.

Historically the people in the wider vicinity of the study area include the Pedi people, Shangaan/Tsonga and Lobedu (Krige 1938). The first Europeans arrived in the area around 1838, with the second group arriving in 1844. They were not able to settle permanently due to tsetse fly. During the 1840's and 1850's there was a great explosion in the trading and exploring activity in the area due to the abundance of game in this region ([http://www.kruger2canyons.org/tribal\\_history.html](http://www.kruger2canyons.org/tribal_history.html)).

The wider area is famous for the residence of the Modjadji Rain Queen of the Balobedu people who settled in the area since the 1600s (Krige & Krige 1943; Joubert 2011). Their origin has been traced to the Rozwi states Karanga. During the early 20th Century modern mining of gold and copper began in the area, it was only during early 1950s with the establishment of Foskor; mining for phosphates, that large scale mining became a feature of the area and precipitated the establishment of the modern town of Phalaborwa (Alpers 1970; Mashale 2009; Pistorius 2007). Not far away from the proposed corridors, there is a Tsongo Kraal Museum, located inside the Hans Merensky Nature Reserve. It is built exclusively of traditional materials, showcasing the many traditional building styles of the North Tsonga tribes who originated as refugees from southern Mozambique. No sites, features or objects of any historical nature were recorded in the area where the proposed upgrade will take place.

Table 1: Significance of Cultural Landscape Impacts

|                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                   | Landscape receptor sensitivity                                                                                                                       |                                                                                                                           |                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                   | High                                                                                                                                                 | Medium                                                                                                                    | Low                                                                                                                                                  |
| <b>Assessment of significance of the cultural landscape impacts</b><br>Red cells represent significant adverse impacts<br>Yellow cells represent significant beneficial impacts<br>Blue cells represent impacts that are not significant |                                                                                                                                                                                                                                                                   | Landscape with National heritage significance Status sites and cultural Landscapes with Provincial heritage Significance Status                      | Regional or Local Significance Heritage sites valued characteristics reasonably tolerant of changes of the type proposed. | A relatively unimportant cultural landscape with few features of value or interest, potentially tolerant of substantial change of the type proposed. |
| Major adverse                                                                                                                                                                                                                            | Significant adverse changes, over a significant area, to key characteristics or features or to the landscape's character or distinctiveness for more than 2 years                                                                                                 | High adverse significance                                                                                                                            | High/Medium adverse significance                                                                                          | Medium adverse significance                                                                                                                          |
| Moderate adverse                                                                                                                                                                                                                         | Noticeable but not significant adverse changes for more than 2 years or significant adverse changes for more than 6 months but less than 2 years, over a significant area, to key characteristics or features or to the landscape's character or distinctiveness. | High/Medium adverse significance                                                                                                                     | Medium adverse significance                                                                                               | Low adverse significance                                                                                                                             |
| Slight adverse                                                                                                                                                                                                                           | Noticeable adverse changes for less than 2 years, significant adverse changes for less than 6 months, or barely discernible adverse changes for any length of time.                                                                                               | Medium adverse significance                                                                                                                          | Low adverse significance                                                                                                  | Neutral                                                                                                                                              |
| Neutral                                                                                                                                                                                                                                  | Any change would be negligible, unnoticeable or there are no predicted changes.                                                                                                                                                                                   | Neutral                                                                                                                                              | Neutral                                                                                                                   | Neutral                                                                                                                                              |
| Slight benefit                                                                                                                                                                                                                           | Noticeable beneficial changes for less than 2 years, significant beneficial changes for less than 6 months, or barely discernible beneficial changes for any length of time.                                                                                      | Medium beneficial significance                                                                                                                       | Low beneficial significance                                                                                               | Neutral                                                                                                                                              |
| Survey Area Cultural landscape                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                   | A relatively unimportant cultural landscape with few features of value or interest, potentially tolerant of substantial change of the type proposed. |                                                                                                                           |                                                                                                                                                      |
| Regional Cultural landscape                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   | Regional or Local Significance Heritage sites valued characteristics reasonably tolerant of changes of the type proposed.                            |                                                                                                                           |                                                                                                                                                      |

## 6.0 DISCUSSION OF FINDINGS

**The discussion section is one of the final parts of this Report, in which an author describes, analyses, and interprets their findings.**

The proposed proposed Gilimberg solar photovoltaic (PV) facility and associated infrastructure archaeological field survey was undertaken in February 2026 to verify the presence or absence of heritage resources under differing seasonal conditions. This follow-up survey was conducted after periods of heavy rainfall in Limpopo Province, during which portions of the site were waterlogged, resulting in reduced ground surface visibility.

The survey was undertaken by a suitably qualified heritage practitioner and conducted in accordance with the professional standards and ethical requirements of the Association of Southern African Professional Archaeologists (ASAPA) and established Cultural Resource Management (CRM) methodologies. The combined results of the dry-season and wet-season surveys are considered adequate to satisfy the requirements of professional due diligence, providing a reasonable level of confidence that no significant heritage resources were overlooked within the study area.

Land use in the surrounding area is predominantly agricultural and mining-related, with rural settlements dispersed across farm portions. The land within the Jupiter locality and the broader Waterberg region was utilised primarily for pastoral farming, with cattle herding forming a central component of both pre-colonial and colonial land-use systems. During the survey a number of cattle were seen grazing within the proposed development site.

The study area was investigated for sites of heritage significance that might be affected by the construction of the proposed solar farm. There is no sign of sites of heritage potential, graves and historical structures found in within the study area and the farm at large. Although no remains of Stone/Iron Age sites were noted during site visit, the area could still contain camps and some areas with suitable substrates that could have been used as quarries for material to produce tools.

## PICTOGRAPHIC PRESENTATION OF THE SURVEY AREA



**Figure 2: View of the northern section of the survey area showing a waterway**



**Figure 3: View of a security fence within the study area**



**Figure 4: View of a footpath used mostly by people heading cattle within the survey area**



**Figure 5: View of the southern end of the survey area showing the grass cover within the survey area**



**Figure 6: View of some cattle within the site showing evidence of cattle heading on site**

## 9.0 ASSESSMENT OF SIGNIFICANCE

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 alternatives under study for meeting a project need. The matrices use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the 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 alternatives under study for meeting a project need. The significance of the aspects/impacts of the process will be rated by using a matrix adapted to some extent to fit this process. These matrices use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The significance of the impacts will be determined through a synthesis of the criteria below:

**Table 2: Significance of impacts synthesis criteria**

| 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.                                                                                                                                                                                             |

## CULTURAL HERITAGE IMPACT ASSESSMENT REPORT

|                                      |   |                                                                                                                                                                     |
|--------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.                                                                                                             |
| <b>Duration (D)</b>                  |   |                                                                                                                                                                     |
| 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 because of natural process or by human intervention.                                                   |
| Permanent                            | 5 | Where mitigation there 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. |
| <b>Probability of occurrence (P)</b> |   |                                                                                                                                                                     |
| 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 archaeological 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).

**Table 3: 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 4: Impact Assessment Matrix**

| Impacts and Mitigation measures relating to the proposed project during construction phase |                                                                 |                   |        |           |        |          |             |                                |                                                                                                                                                         |           |        |          |             |                               |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------|--------|-----------|--------|----------|-------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|----------|-------------|-------------------------------|
| Activity/Aspect                                                                            | Impact /                                                        | Aspect            | Nature | Magnitude | Extent | Duration | Probability | Significance before mitigation | Mitigation measures                                                                                                                                     | Magnitude | Extent | Duration | Probability | Significance after mitigation |
| Clearing and Excavations                                                                   | Destruction of archaeological remains                           | Cultural heritage | -      | 6         | 1      | 1        | 2           | 16                             | <ul style="list-style-type: none"> <li>Use chance find procedure to cater for accidental finds</li> </ul>                                               | 2         | 1      | 1        | 1           | 4                             |
|                                                                                            | Disturbance of graves                                           | Cultural heritage | -      | 6         | 1      | 1        | 2           | 16                             | <ul style="list-style-type: none"> <li>Chance finds procedure and heritage induction for workers</li> </ul>                                             | 3         | 2      | 2        | 3           | 21                            |
|                                                                                            | Disturbance of buildings and structures older than 60 years old | Cultural heritage | -      | 6         | 2      | 1        | 2           | 16                             | <ul style="list-style-type: none"> <li>Mitigations are given in the recommendations section</li> </ul>                                                  | 4         | 1      | 1        | 1           | 4                             |
| Operational                                                                                | Destruction living heritage and public monuments                | Cultural heritage | -      | 6         | 2      | 1        | 2           | 16                             | <ul style="list-style-type: none"> <li>Mitigation is not required because there are no public monuments within the proposed development site</li> </ul> | 2         | 1      | 1        | 4           | 4                             |

Table 5: Heritage Management Plan Input Into Proposed Solar Project

|                        |                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                            |                    |                   |                |                      |                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|----------------|----------------------|----------------------------|
| Objective              | <ul style="list-style-type: none"><li>✓ Protection of archaeological sites and land considered to be of cultural value.</li><li>✓ Protection of known physical cultural property sites against vandalism, destruction and theft; and</li><li>✓ The preservation and appropriate management of new archaeological finds should these be discovered during construction.</li></ul> |                                                                                                                                                                                                                                                            |                    |                   |                |                      |                            |
| No.                    | Activity                                                                                                                                                                                                                                                                                                                                                                         | Mitigation Measures                                                                                                                                                                                                                                        | Duration           | Frequency         | Responsibility | Accountable          | 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     | Construction Manager | Environmental Practitioner |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or Amafa research and Institute official must be called to site for inspection.             |                    | Throughout        | Contractor     | Construction Manager | Environmental Practitioner |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;                                                                                                           |                    | Throughout        | Contractor     | Construction Manager | Environmental Practitioner |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | 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 Amafa Research and Institute |                    | When necessary    | Contractor     | Construction Manager | Environmental Practitioner |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | Should any remains be found on site that is potentially human remains, Amafa research and Institute and South African Police Service should be contacted.                                                                                                  |                    | When necessary    | Contractor     | Construction Manager | Environmental Practitioner |
| Rehabilitation Phase   |                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                            |                    |                   |                |                      |                            |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | Same as construction phase.                                                                                                                                                                                                                                |                    |                   |                |                      |                            |
| Operational Phase      |                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                            |                    |                   |                |                      |                            |
|                        |                                                                                                                                                                                                                                                                                                                                                                                  | Same as construction phase.                                                                                                                                                                                                                                |                    |                   |                |                      |                            |

**Table 6: Site significance classification and ratings for heritage resources located in the project area**

| <b>Heritage resource</b> | <b>#Number</b> | <b>Field rating</b> | <b>Grade</b> | <b>Significance</b> | <b>Recommended mitigation</b> |
|--------------------------|----------------|---------------------|--------------|---------------------|-------------------------------|
| Burial Site              | 0              | None                | None         | Low                 | See below                     |
| Built environment        | 0              | None                | None         | Low                 | See below                     |
| Archaeological Site      | 0              | None                | None         | Low                 | See below                     |
| Memorials                | 0              | None                | None         | Low                 | See below                     |
| Living Heritage          | 0              | None                | None         | Low                 | See below                     |
| Rock Art                 | 0              | None                | None         | Low                 | See below                     |
| Midden                   | 0              | None                | None         | Low                 | See below                     |

## 10.0 CONCLUSIONS

**Brief summary of the findings and cultural heritage resources management goals that have been identified to guide the protection and public enjoyment of natural, cultural and recreational resources**

Archaeological sites dating to the Stone, Iron and Historical Age are known to occur in the region of study area, as enunciated under background study above. However, based on the results of the survey, no archaeological heritage resources as defined under Section 2 of the **NHRA** were identified within the proposed development footprint. It is therefore recommended that the proposed **development** may proceed as planned, subject to the following conditions:

This report concludes that there are **no fatal flaws** expected for this project. The impacts of the proposed solar farm development on the cultural landscape will not be significant as no cultural heritage resources were recorded during the field survey. The potential for stratified archaeological deposits was assessed as negligible given the local geology and predictive site patterning.

However archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, according to the **NHRA** Section 36, such activities should be halted, **SHRA** or the **Limpopo Provincial Heritage Authority** must be notified in order for an investigation and evaluation of the find(s) to take place. From a heritage perspective, the proposed development may be allowed to proceed subject to the recommendation given below. Measures for inclusion in the **EMPr** are also given in the recommendations below.

## 11.0 RECOMMENDATIONS

Description and discussion of any no-go areas that have already been identified at this stage and must be further examined during the HIA. These recommendations are based on the current level of ground visibility and access at the time of survey and reflects the reasonable outcomes of a Phase 1 HIA conducted in accordance with ASAPA and CRM professional standards

**RECOMMENDATION 1:** No further archaeological mitigation is required prior to construction, provided that the development footprint remains within the assessed area.

**RECOMMENDATION 2:** Lack of archaeological find on the surface does not mean absence of archaeological find on the subsurface, therefore should chance archaeological materials or human burials remains be exposed during 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.

**RECOMMENDATION 3:** Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the **Limpopo Provincial Heritage Authority**.

**RECOMMENDATION 4:** Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by **Limpopo Provincial Heritage Authority**.

**RECOMMENDATION 5:** A **Chance Finds Procedure (given in Appendix C)** must be implemented during all ground-disturbing activities and should be included in the **EMPr**. Should any archaeological material, human remains, or cultural features be uncovered during construction, work in the affected area must cease immediately, and a suitably qualified archaeologist must be notified in accordance with Sections 35 and 36 of the NHRA.

## 12.0 REFERENCES

**All literature references used in the compilation of this report e.i common academic referencing convention; this must include newspapers, website links and archival documents.**

Bergh, J.S. (red.). 1999. Geskiedenisatlas van Suid-Afrika. Die viernoordelikeprovincies. Pretoria: J.L. van Schaik.

Bradfield, J., Holt, S. & Sadr, K. 2009. The last of the LSA on the Makgabeng Plateau, Limpopo Province. South African Archaeological Bulletin 64 (190), pp. 176- 183.

Coertze, P.J. & Coertze, R.D. 1996. Verklarendevakwoordeboekvir Antropologieen Argeologie.

Pretoria: R.D. Coertze. Daniel, S. 2015. Old kraals and a cave found in the hills on the Waterberg Project. (Unpublished report, Johannesburg, GeoActive Dynamic Geological Services).

De Jong, R.C. 2010. Heritage Impact Assessment Report: Support of the Environmental Impact Assessment for the proposed upgrading of the Bulk Municipal Water Supply Pipeline (12km) on the farms Zeeland 526 LQ, Worcester 520 LQ, and Paarl 522 LQ, Lephalale Local Municipality, Limpopo Province. Unpublished Report for Gudani Consulting Polokwane July 2010.

Eastwood, E., van Schalkwyk, J. & Smith, B. 2002. Archaeological and Rock Art Survey of the Makgabeng Plateau, Central Limpopo Basin. The Digging Stick, 19 (1).

## APPENDIX A: DEFINITION OF TERMS ADOPTED IN THIS HIA

The terminology adopted in this document is mainly influenced by the NHRA of South Africa (1999) and the Burra Charter (1979).

**Adaptation:** Changes made to a place so that it can have different but reconcilable uses.

**Artefact:** Cultural object (made by humans).

**Buffer Zone:** Means an area surrounding a cultural heritage which has restrictions placed on its use or where collaborative projects and programs are undertaken to afford additional protection to the site.

**Co-management:** Managing in such a way as to consider the needs and desires of stakeholders, neighbours and partners, and incorporating these into decision making through, amongst others, the promulgation of a local board.

**Conservation:** In relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects to safeguard their cultural significance as defined. These processes include, but are not necessarily restricted to preservation, restoration, reconstruction and adaptation.

**Contextual Paradigm:** A scientific approach which places importance on the total context as catalyst for cultural change and which specifically studies the symbolic role of the individual and immediate historical context.

**Cultural Resource:** Any place or object of cultural significance

**Cultural Significance:** Means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance of a place or object for past, present and future generations.

**Feature:** A coincidental find of movable cultural objects.

**Grading:** The South African heritage resource management system is based on a grading system, which provides for assigning the appropriate level of management responsibility to a heritage resource.

**Heritage Resources Management:** The utilization of management techniques to protect and develop cultural resources so that these become long term cultural heritage which are of value to the general public.

**Heritage Resources Management Paradigm:** A scientific approach based on the Contextual paradigm but placing the emphasis on the cultural importance of archaeological (and historical) sites for the community.

**Heritage Site Management:** The control of the elements that make up the physical and social environment of a site, its physical condition, land use, human visitors, interpretation etc. Management may be aimed at preservation or, if necessary, at minimizing damage or destruction or at presentation of the site to the public.

**Historic:** Means significant in history, belonging to the past; of what is important or famous in the past.

**Historical:** Means belonging to the past or relating to the study of history.

**Maintenance:** Means the continuous protective care of the fabric, contents and setting of a place. It does not involve physical alteration.

**Object:** Artefact (cultural object)

**Paradigm:** Theories, laws, models, analogies, metaphors and the epistemological and methodological values used by researchers to solve a scientific problem.

**Preservation:** Refers to protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change and may include stabilization where necessary. Preservation is appropriate where the existing state of the fabric itself constitutes evidence of specific cultural significance, or where insufficient evidence is available to allow other conservation processes to be carried out.

**Protection:** With reference to cultural heritage resources this includes the conservation, maintenance, preservation and sustainable utilization of places or objects in order to maintain the cultural significance thereof.

**Place:** Means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.

**Reconstruction:** To bring a place or object as close as possible to a specific known state by using old and new materials.

**Rehabilitation:** The repairing and/ or changing of a structure without necessarily taking the historical correctness thereof into account.

**Restoration:** To bring a place or object back as close as possible to a known state, without using any new materials.

**Site:** A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artefacts, found on a single location.

**Sustainable:** Means the use of such resource in a way and at a rate that would not lead to its long-term decline, would not decrease its historical integrity or cultural significance and would ensure its continued use to meet the needs and aspirations of present and future generations of people.

**APPENDIX B: CHANCE FINDS PROCEDURE****What is a Chance Finds Procedure?**

The purpose of Archaeological Chance Find Procedure (CFP) is to address the possibility of cultural heritage resources and archaeological deposits becoming exposed during ground altering activities within the project area and to provide protocols to follow in the case of a chance archaeological find to ensure that archaeological sites are documented and protected as required. A 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 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. Archaeological sites are protected by The National Heritage Resources Act of 1999. They are non-renewable, very susceptible to disturbance and are finite in number. Archaeological sites are an important resource that is protected for their historical, cultural, scientific and educational value to the general public, local communities.

**What are the objectives of the CFP?**

The objectives of this “Chance Find Procedure” are to promote preservation of archaeological data while minimizing disruption of construction scheduling. It is recommended that due to the moderate to high archaeological potential of some areas within the project area, all on site personnel and contractors be informed of the Archaeological Chance Find Procedure and have access to a copy while on site.

**Where is a CFP applicable?**

Developments that involve excavation, movement, or disturbance of soils have the potential to impact archaeological materials, if present. Activities such as road construction, land clearing, and excavation are all examples of activities that may adversely affect archaeological deposits. 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 construction manager must ensure that all personnel on the proposed construction site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance Find Procedure details the necessary steps to be taken if any culturally significant artefacts are found during mining or construction.

### **What is the CF Procedure?**

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

- ⌘ All construction activity in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the site.
- ⌘ Briefly note the type of archaeological materials you think you've encountered, its location, and if possible, the depth below surface of the find.
- ⌘ Report your discovery to your supervisor or if they are unavailable, report to the project Environmental Control Officer (ECO) who will provide further instructions.
- ⌘ If the supervisor is not available, notify the ECO immediately. The ECO will then report the find to the Manager who will promptly notify the project archaeologist and SAHRA.
- ⌘ Delineate the discovered find/ feature/ site and provide a 25m buffer zone from all sides of the find.
- ⌘ An archaeologist should give recommendations on the cause of action to be taken.

## APPENDIX C: HUMAN REMAINS AND BURIALS IN DEVELOPMENT

Developers, land use planners and professional specialist service providers often encounter difficult situations with regards to burial grounds, cemeteries and graves that may be encountered in development contexts. This may be before or during a development project. There are different procedures that need to be followed when a development is considered on an area that will impact upon or destroy existing burial grounds, cemeteries or individual graves. In contexts where human remains are accidentally found during development work such as road construction or building construction, there are different sets of intervention regulations that should be instigated. This brief is an attempt to highlight the relevant regulations with emphasis on procedures to be followed when burial grounds, cemeteries and graves are found in development planning and development work contexts. The applicable regulations operate within the national heritage and local government legislations and ordinances passed in this regard. These guidelines assist you to follow the legal pathway.

### **First, establish the context of the burial:**

1. Are the remains less than 60 years old? If so, they may be subject to provisions of the Human Tissue Act, Cemeteries Ordinance(s) and to local, regional, or municipal regulations, which vary from place to place. The finding of such remains must be reported to the police but are not automatically protected by the NHRA.
2. Is this the grave of a victim of conflict? If so, it is protected by the NHRA (Section 36(3a)). (Relevant extracts from the Act and Regulations are included below).
3. Is it a grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority? If so, it is protected by the NHRA (Section 36(3b)).
4. Are the human or hominid remains older than 100 years? If so, they are protected by the NHRA (Section 35(4), see also definition of “archaeological” in Section 2).

### **Second, refer to the terms of the NHRA most appropriate to the situation, or to other Acts and Ordinances:**

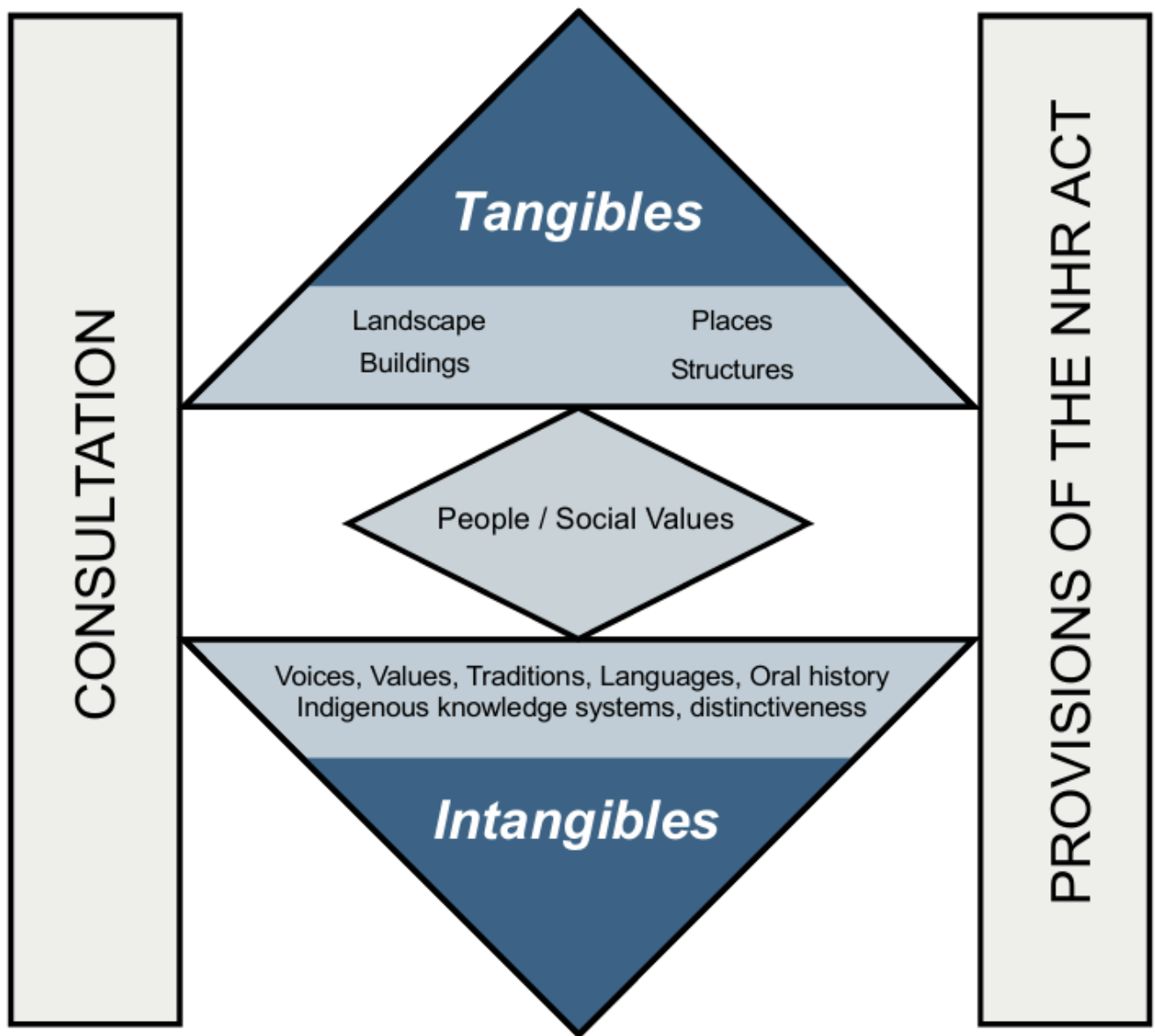
1. Human remains that are NOT protected in terms of the NHRA (i.e. less than 60 years old and not a grave of a victim of conflict or of cultural significance) are subject to provisions of the Human Tissue Act and to local and regional regulations, for example Cemeteries Ordinances applicable in different Provincial and local Authorities.
2. All finds of human remains must be reported to the nearest police station to ascertain whether or not a crime has been committed.
3. If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution

where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities given their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

**In the event that a graveyard is to be moved or developed for another purpose, it is incumbent on the local authority to publish a list of the names of all the persons buried in the graveyard if there are gravestones or simply a notification that graves in the relevant graveyard are to be disturbed. Such a list would have to be compiled from the names on the gravestones or from parish or other records. The published list would call on the relatives of the deceased to react within a certain period to claim the remains for re-interment. If the relatives do not react to the advertisement, the remains may be re-interred at the discretion of the local authority.**

1. However, it is the responsibility of the developer to ensure that none of the affected graves within the cemetery are burials of victims of conflict. The applicant is also required in line with the heritage legislation to verify that the graves have no social significance to the local communities.
2. It is illegal in terms of the Human Tissue Act for individuals to keep human remains, even if they have a permit, and even if the material was found on their own land.
3. The Exhumations Ordinance (Ordinance No. 12 of 1980 and as amended) is also relevant. Its purpose is “To prohibit the desecration, destruction and damaging of graves in cemeteries and receptacles containing bodies; to regulate the exhumation, disturbance, removal and reinterment of bodies, and to provide for matters incidental thereto”. This ordinance is supplemented and support by local authorities regulations, municipality by-laws and ordinances.

## APPENDIX D: THE CONCEPT OF HERITAGE MANAGEMENT



# HERITAGE IMPACT ASSESSMENT REPORTS

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