



# PGS HERITAGE

**Mulilo Renewable Project Developments (Pty) Ltd**

**MULILO STRUISBULT PV2 GRID CONNECTION CLOSE TO  
COPPERTON, NORTHERN CAPE PROVINCE**

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## Declaration of Independence

I, Wouter Fourie, declare that –

- General declaration:
- I act as the independent heritage practitioner 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 heritage impact assessments, 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 will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- 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;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

### Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

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**SIGNATURE:**

\_\_\_\_\_

<b>Report Title</b>	<b><i>THE ADDITIONAL INFRASTRUCTURE FOR THE STRUISBULT PV2 SOLCAR FACILITY CLOSE TO COPPERTON, NORTHERN CAPE PROVINCE</i></b>		
<b>Control</b>	<b>Name</b>	<b>Signature</b>	<b>Designation</b>
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<b>Reviewed</b>			EIMS

**DETAILS OF CLIENT:**

**CLIENT:** Environmental Impact Management Services (Pty) Ltd (EIMS)

**CONTACT PERSON:** GP Kriel  
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## EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd (PGS) was appointed by Environmental Impact Management Services Consulting (Pty) Ltd (EIMS) to undertake a Heritage Impact Assessment (HIA), which forms part of the environmental process for the Struisbult PV2 Grid Connection of Mulilo Renewable Project Developments (Pty) Ltd (Mulilo), located on the farms Vogelstruisbult 104, Klipgats Pan 117 and Hoekplaas 146 near Copperton, Siyathemba Local Municipality, Northern Cape.

This HIA aims to evaluate the possible impacts on heritage resources present within the proposed development footprint of the proposed infrastructure. Immediate and direct impacts on archaeological resources were addressed through the HIA.

The HIA has shown that the study area has no heritage resources situated within the proposed development boundaries.

### Heritage sites

The fieldwork component of the study was aimed at identifying tangible remains of archaeological, historical and heritage significance. The fieldwork was undertaken by way of intensive walkthroughs of the proposed footprint areas. The fieldwork was conducted by two archaeologists from PGS (Nicholas Fletcher and Wynand van Zyl) on 11 January 2022. It is important to note that although as intensive a fieldwork coverage as possible was undertaken. **During the field work, no archaeological sites or burial grounds and graves were identified.**

### Impact assessment

Despite an intensive walkthrough of the footprint area for the proposed footprint areas, no evidence for any archaeological or heritage sites could be identified within the environs of the study area. As a result, no impact is expected from the proposed development on heritage.

### Mitigation measures

With no impact expected on heritage, no further mitigation is required. Refer to **Section 8** of this report.

### General

It is the considered opinion of the authors of this report that the overall impact of the proposed Struisbult PV2 additional infrastructure on heritage resources will be Low. Provided that the general recommendations and mitigation measures outlined in this report are implemented, the impact would be acceptably Low or could be totally mitigated to the degree that the project could be approved from a heritage perspective.

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## TERMINOLOGY AND ABBREVIATIONS

### Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency, and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

### Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

### Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil.

### Early Stone Age

The archaeology of the Stone Age between 700 000 and 3 300 000 years ago.

### Fossil



Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

### **Heritage**

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

### **Heritage resources**

This means any place or object of cultural significance and can include (but is not limited to) the following list as outlined under Section 3 of the National Heritage Resources Act (NHRA):

- places, buildings, structures, and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

### **Holocene**

The most recent geological time which commenced 10 000 years ago.

### **Late Stone Age**

The archaeology of the last 30 000 years associated with fully modern people.

### **Late Iron Age (Early Farming Communities)**

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

### **Middle Iron Age**

The archaeology of the period between 900-1300AD, associated with the development of the Zimbabwe culture, defined by class distinction and sacred leadership.

### **Middle Stone Age**

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

### **Palaeontology**

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

### Site

Site in this context refers to a place where a heritage resource is located and not a proclaimed heritage site as contemplated under s27 of the NHRA.

*Table 1 - List of abbreviations used in this report*

<b>Abbreviations</b>	<b>Description</b>
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
BA	Basic Environmental Assessment
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIMS	Environmental Impact Management Services (Pty) Ltd
EMPr	Environmental Management Programme
ESA	Earlier Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
LCTs	Large Cutting Tools
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
PGS	PGS Heritage (Pty) Ltd
PHRA	Provincial Heritage Resources Authority
PIA	Palaeontological Impact Assessment
PSSA	Palaeontological Society of South Africa
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

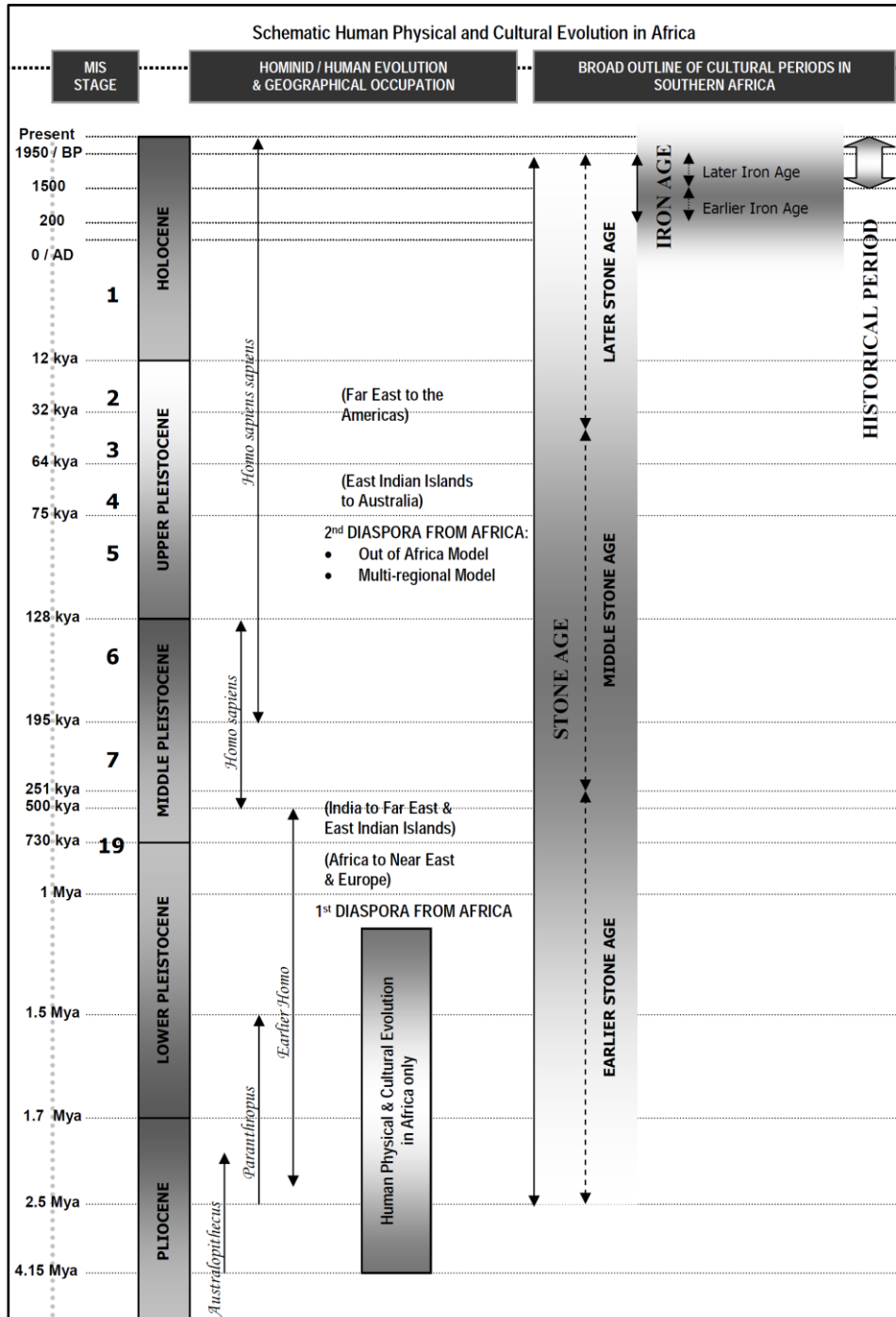


Figure 1 - Human and Cultural Timeline in Africa (Morris, 2008).

# 1 INTRODUCTION

PGS Heritage (Pty) Ltd (PGS) was appointed by Environmental Impact Management Services Consulting (Pty) Ltd (EIMS) to undertake a Heritage Impact Assessment (HIA), which forms part of the environmental process for the Struisbult PV2 Grid Connection of Mulilo Renewable Project Developments (Pty) Ltd (Mulilo), located on the farms Vogelstruisbult 104, Klipgats Pan 117 and Hoekplaas 146 near Copperton, Siyathemba Local Municipality, Northern Cape.

## 1.1 SCOPE OF THE STUDY

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development footprint of the additional infrastructure for the project. The HIA aims to inform the basic Environmental Assessment (BA) in the development of a comprehensive EMP to assist the project applicant in responsibly managing the identified heritage resources in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act (Act 25 of 1999) (NHRA).

## 1.2 SPECIALIST QUALIFICATIONS

This HIA was compiled by PGS.

The staff at PGS has a combined experience of nearly 90 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. And will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

The following individuals were involved with this study:

- Wouter Fourie, the Project Coordinator, is registered with the ASAPA as a Professional Archaeologist and is accredited as a Principal Investigator with is registered as a Professional Archaeologist with the Association of Southern African Professional Archaeologists (ASAPA); he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).
- Nicholas Fletcher, field archaeologist, holds a BA (Hons) in Archaeology and has completed his Masters in Archaeology.

- Wynand van Zyl, field archaeologist who assisted with the fieldwork, holds a BA (Hons) in Archaeology and is registered as a Professional Archaeologist with the ASAPA.

### **1.3 ASSUMPTIONS AND LIMITATIONS**

The following assumptions and limitations regarding this study and report exist:

- Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is important to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites, as well as the dense vegetation cover and disturbance found in some areas. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted. Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. If any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply as set out below.
- The study area boundaries and development footprints depicted in this report were provided by the client. As a result, these were the areas assessed during the fieldwork. Should any additional development footprints located outside of these study area boundaries be required, such additional areas will have to be assessed in the field by an experienced archaeologist/heritage specialist long before construction starts.

### **1.4 IDENTIFICATION OF POLICIES, LEGISLATION, STANDARDS & GUIDELINES**

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

#### **1.4.1 STATUTORY FRAMEWORK: THE NATIONAL HERITAGE RESOURCES (ACT 25 OF 1999)**

The National Heritage Resources Act (NHRA) has applicability as the HIA is done in terms of the provisions of Section 34, 35, 36 and 38 of the NHRA and identifies heritage resources, informants, and issues relating to the palaeontological, archaeological, built environment and cultural landscape.

The NHRA is utilised as the basis for the identification, evaluation and management of heritage resources, and in the case of Cultural Resource Management (CRM), those resources specifically impacted by the development as stipulated in Section 38 of NHRA.

The Art 3 of the NHRA outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

- a) places, buildings structures and equipment of cultural significance;
- b) places to which oral traditions are attached or which are associated with living heritage;
- c) historical settlements and townscapes;
- d) landscapes and natural features of cultural significance;
- e) geological sites of scientific or cultural importance;
- f) archaeological and palaeontological sites;
- g) graves and burial grounds including-
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims of conflict;(iv) graves of individuals designated by the Minister by notice in the Gazette;
  - (iv) (v) historical graves and cemeteries; and
  - (v) (vi) other human remains which are not covered by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
- h) sites of significance relating to the history of slavery in South Africa;
- i) movable objects, including -
- j) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - (i) objects to which oral traditions are attached or which are associated with living heritage;
  - (ii) ethnographic art and objects;
  - (iii) military objects;
  - (iv) objects of decorative or fine art;
  - (v) objects of scientific or technological interest; and
  - (vi) books, records, documents, photographs, positives and negatives, graphic, film or video material
  - (vii) or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

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

3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

- a) its importance in the community, or pattern of South Africa's history;
- b) its possession of uncommon, rare or endangered aspects of South Africa's
- c) natural or cultural heritage;
- d) its potential to yield information that will contribute to an understanding of
- e) South Africa's natural or cultural heritage;
- f) its importance in demonstrating the principal characteristics of a particular
- g) class of South Africa's natural or cultural places or objects;
- h) its importance in exhibiting particular aesthetic characteristics valued by a
- i) community or cultural group;
- j) its importance in demonstrating a high degree of creative or technical
- k) achievement at a particular period;
- l) its strong or special association with a particular community or cultural group
- m) for social, cultural or spiritual reasons;
- n) its strong or special association with the life or work of a person, group or
- o) organisation of importance in the history of South Africa; and
- p) sites of significance relating to the history of slavery in South Africa.

#### 1.4.1.1

#### **SECTION 34 – STRUCTURES**

According to Section 34 of the NHRA, no person may alter, damage or destroy any structure that is older than 60 years, and which forms part of the built environment of the sites, without the necessary permits from the relevant provincial heritage authority.

#### 1.4.1.2

#### **SECTION 35 – ARCHAEOLOGY, PALAEOLOGY AND METEORITES**

According to Section 35 (Archaeology, Palaeontology and Meteorites) and Section 38 (Heritage Resources Management) of the NHRA, PIAs and AIAs are required by law in the case of developments in areas underlain by potentially fossiliferous (fossil-bearing) rocks, especially where substantial bedrock excavations are envisaged, and where human settlement is known to have occurred during prehistory and the historic period.

#### 1.4.1.3

#### **SECTION 36 – BURIAL GROUNDS & GRAVES**

A Section 36 permit application is made to the SAHRA or the competent provincial heritage authority which protects burial grounds and graves that are older than 60 years and must conserve and generally

care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit. SAHRA must also identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with these graves and must maintain such memorials. A permit is required under the following conditions:

Permit applications for burial grounds and graves older than 60 years should be submitted to the South African Heritage Resources Agency:

- destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of the conflict, or any burial ground or part thereof which contains such graves.
- destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant.

#### 1.4.1.4

#### **TERMS OF SECTION 38(8)**

#### **SECTION 38 - HIA AS A SPECIALIST STUDY WITHIN THE EIA IN**

A NHRA Section 38 (Heritage Impact Assessments) application is required when the proposed development triggers one or more of the following activities:

- a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- b) the construction of a bridge or similar structure exceeding 50 m in length;
- c) any development or other activity which will change the character of a site,
  - i. exceeding 5 000 m<sup>2</sup> in extent; or
  - ii. involving three or more existing erven or subdivisions thereof; or
  - iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- d) the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
- e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority



In this instance, the heritage assessment for the property is to be undertaken as a component of the EIA for the project. Provision is made for this in terms of Section 38(8) of the NHRA, which states that:

- An HIA report is required to identify, and assess archaeological resources as defined by the NHR Act, assess the impact of the proposal on the said archaeological resources, review alternatives and recommend mitigation (see methodology above).

Section 38 (3) Impact Assessments are required, in terms of the statutory framework, to conform to basic requirements as laid out in Section 38(3) of the NHRA. These are:

- The identification and mapping of heritage resources in the area affected;
- The assessment of the significance of such resources;
- The assessment of the impact of the development on the heritage resources;
- An evaluation of the impact on the heritage resources relative to sustainable socio/economic benefits;
- Consideration of alternatives if heritage resources are adversely impacted by the proposed development;
- Consideration of alternatives; and
- Plans for mitigation.

#### **1.4.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)**

The cultural environment in South Africa is managed through Section 24 of the National Environmental Management Act (NEMA), No. 107 of 1998. The NEMA creates the legal framework by which cultural heritage can be managed.

Furthermore, under Section 2(4)(a) of the NEMA:

2 (4) (a) Sustainable development requires the consideration of all relevant factors including the following:

- (iii) the disturbance of landscapes and sites that constitute the nation's cultural heritage must be avoided, or where it cannot be altogether avoided, is minimised and remedied.

#### **1.4.3 NOTICE 648 OF THE GOVERNMENT GAZETTE 45421**

Although minimum standards for archaeological (2007) and palaeontological (2012) assessments were published by SAHRA (2016), Government Notice (GN) 648 of 2019 requires sensitivity verification for a site selected on the national web-based environmental screening tool for which no specific

assessment protocol related to any theme has been identified. The requirements for this GN are listed in **Table 2** and the applicable section in this report noted.

*Table 2 - Reporting requirements for GN 648 of 2019*

<b>GN 648</b>	<b>Relevant section in report</b>	<b>Where not applicable</b>
2.2 (a) a desktop analysis, using satellite imagery	Section 5	-
2.2 (b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web-based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.	Section 3	-
2.3(a) confirms or disputes the current use of the land and environmental sensitivity as identified by the national web-based environmental screening tool	Section 1 and 5	-
2.3(b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity	Section 3 provides a description of the current use and confirms the status in the screening report	-

An assessment of the Environmental Screening tool provides the following sensitivity rating for archaeological and heritage resources that fall within the proposed area as Low to High (**Figure 2**), while palaeontological resources are rated as Medium to Very High (**Figure 3**).

*Figure 2 - Environmental screening tool's depiction of the archaeological and heritage sensitivity of the study area and surroundings.*

*Figure 3 - Environmental screening tool's depiction of the palaeontological sensitivity of the study area and surroundings.*

#### 1.4.4 NEMA – APPENDIX 6 REQUIREMENTS

The HIA report has been compiled considering the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and Environmental Impact Assessment (EIA) Regulations (2014, and as amended in 2017) (**Table 3**).

The table below sets out the relevant sections as listed in Appendix 6 of the EIA Regulations (2017), which describes the requirements for specialist reports. For ease of reference, the table provides cross-references to the report sections where these requirements have been addressed. It is important to note that where something is not applicable to this HIA, this has been indicated in the table below.

Table 3 - Reporting requirements as per NEMA Appendix 6 for specialist reports

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Relevant section in report	Comment where not applicable
1.(1) (a) (i) Details of the specialist who prepared the report	Page ii of Report – Contact details and company	-
(ii) The expertise of that person to compile a specialist report including a curriculum vita	Section 1.2 – refer to <b>Appendix A</b>	-
(b) A declaration that the person is independent in a form as may be specified by the competent authority	Page ii of the report	-
(c) An indication of the scope of, and the purpose for which, the report was prepared	Section 1.1	-
(cA) An indication of the quality and age of base data used for the specialist report	Section 3	-
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 6 and 7	-
(d) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3	-
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3	-
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Sections 3, 5	-
(g) An identification of any areas to be avoided, including buffers	NA	-
(h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	NA	-
(i) A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3	-
(j) A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Executive Summary, Sections 6, 7, 8	-
(k) Any mitigation measures for inclusion in the EMPr	Executive Summary, Sections 8	-
(l) Any conditions for inclusion in the environmental authorisation	Executive Summary, Sections 8	-
(m) Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Executive Summary, Sections 8	-
(n)(i) A reasoned opinion as to whether the proposed activity, activities or portions thereof should be authorised and	Executive Summary; Section 9	-
(n)(iA) A reasoned opinion regarding the acceptability of the proposed activity or activities; and		-

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Relevant section in report	Comment where not applicable
(n)(ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Executive summary, Sections 8 and 9	-
(o) A description of any consultation process that was undertaken during the course of carrying out the study		Not applicable. A public consultation process was handled as part of the environmental process.
(p) A summary and copies if any comments that were received during any consultation process		Not applicable. To date no comments regarding heritage resources that require input from a specialist have been raised.
(q) Any other information requested by the competent authority.		Not applicable.
(2) Where a government notice by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	NEMA Appendix 6 and GN648 SAHRA guidelines on HIAs, PIAs and AIAs	

## 2 SITE LOCATION AND DESCRIPTION

### 2.1 PROJECT DESCRIPTION

The following brief project description for the project has been supplied by EIMS.

Mulilo Renewable Project Developments (Pty) Ltd (Mulilo) is in the process of preparing Struisbult PV2 solar facility for a private off-taker. One of the Eskom conditions received for connecting the project to the grid is to build an additional 8.8 km 132 kV line between Kronos and Cuprum substations. The Applicant proposes construction of the required 132 kV line alongside an existing powerline servitude with associated grid connection infrastructure as follows:

1. An access road to the Struisbult PV2 On-site Substation;  
The On-site Substation consists of a 132 kV Switching Station (assessed here) back-to-back with the IPP substation
2. An approximately 1 km LILO;
3. 132 kV Feeder Bay at both Cuprum and Kronos Substations; and
4. An approximately 8.8 km 132 KV Transmission Line along the existing Kronos-Cuprum overhead line (OHL), which will be handed over to Eskom once completed.

The proposed project site is within the following properties: Farm Vogelstruisbult 104, Farm Klipgats Pan 117 and Farm Hoekplaas 146 near Copperton, Siyathemba Local Municipality, Northern Cape (**Figure 4**).

5. The access road to the Struisbult PV2 Substation has the following coordinates:
  1. Start: 29°56'16.91"S and 22°19'20.32"E;
  2. Middle: 29°56'31.73"S and 22°19'20.36"E; and
  3. End: 29°56'31.76"S and 22°19'37.80"E.
6. The LILO Line has the following coordinates:
  1. Start: 29°56'31.94"S and 22°19'38.99"E;
  2. Middle: 29°56'49.14"S and 22°19'39.43"E; and
  3. End: 29°57'9.54"S and 22°19'39.64"E.
7. The new 132 KV Transmission Line has the following coordinates:
  1. Start: 30°01'25.43"S and 22°20'17.36"E;
  2. Middle: 29°59'24.65"S and 22°19'39.06"E; and
  3. End: 29°57'33.45"S and 22°18'02.27"E.

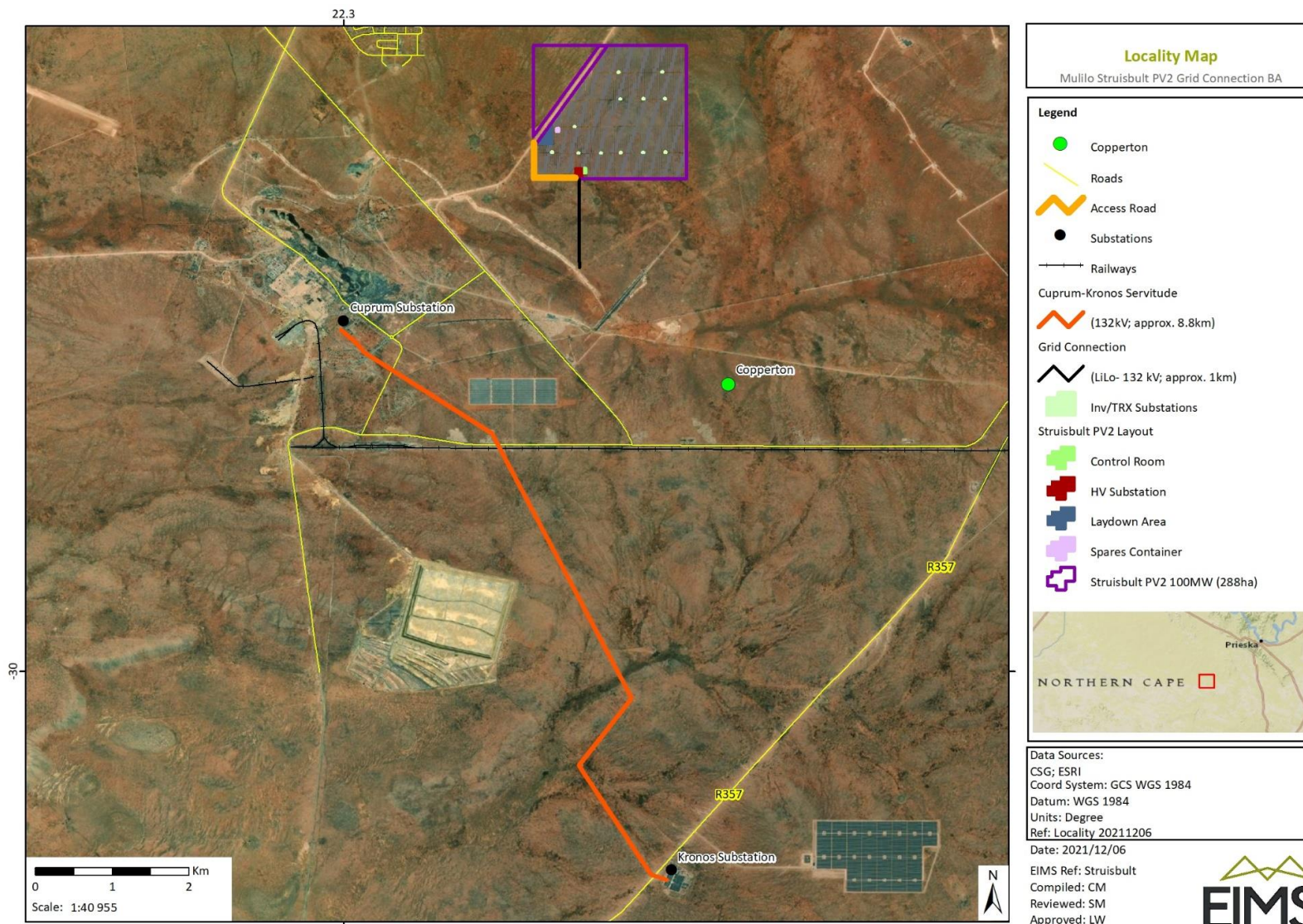


Figure 4 - Project infrastructure as described above.

### 3 CURRENT STATUS QUO

#### 3.1 SITE DESCRIPTION

A site visit was conducted by two archaeologists from PGS on 11 January 2022.

The site is situated southwest of the settlement Copperton in the Northern Cape. On farms Klippgats pan 117 and Vogelstruisbult 104. The landscape is flat with some drainage lines and is generally covered with red aeolian sands with areas of exposed underlying calcrete.



*Figure 5 - Northern view of modern watering station on the farm Vogelstruisbult 104.  
(S29.94471° E22.32826°)*



*Figure 6 - Eastern view of modern dam and watering hole on the farm Vogelstruisbult 104.  
(S29.94243° E22.32825°)*



*Figure 7 - Rocky area with wind farm in the back to the west on the farm Vogelstruisbult 104.*



*Figure 8 - Rocky area with wind farm in the back to the west on the farm Vogelstruisbult 104.*



*Figure 9 - Western view of area where substation will be located on the farm Vogelstruisbult 104.*



*Figure 10 - Western view of power line on the farm Klipgats Pan 117*



*Figure 11 - Eastern view of Substation*



*Figure 12 - Southern view of power line and site dam in the background on the farm Klipgats Pan 117*

There is a low-density stone tool and debitage scatter located throughout the study area. The density of Stone Age material does vary with concentrations being slightly higher within rocky areas where pebbles have been exposed generally on underlying calcrete. The Material consist of artifacts from the Early, Middle and Late Stone Ages. No sites were identified as the low density of the artifact concentrations did not meet the requirements to constitute a site.



## 4 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study. This report was compiled by PGS. The applicable maps, tables and figures, are included as stipulated in the NHRA (no 25 of 1999) and the NEMA (no 107 of 1998). The HIA process consisted of three steps:

Step I – Desktop Study: A detailed archaeological and historical overview of the study area and surroundings was undertaken. This work was augmented by an assessment of reports and data contained on the South African Heritage Resources Information System (SAHRIS). Additionally, an assessment was made of the available historic topographic maps. All these desktop study components were undertaken to support the fieldwork.

Step II – Field Survey: The fieldwork component of the study was aimed at identifying tangible remains of archaeological, historical and heritage significance. The fieldwork was undertaken by way of intensive walkthroughs of the proposed development footprint areas.

The fieldwork was undertaken by two archaeologists (Nicholas Fletcher and Wynand van Zyl) on 11 February 2022. Throughout the fieldwork, hand-held GPS devices were used to record the track logs showing the routes followed by the fieldwork team.

Step III – Report: The final step involved the recording and documentation of relevant archaeological resources, the assessment of resources in terms of the HIA criteria and report writing, as well as mapping and constructive recommendations.

### 4.1 ARCHAEOLOGICAL SPECIFIC METHODOLOGY

Additional to the preceding methodological description the archaeological methodology included fulfilling the requirements of the NHRA (section 35 and 36) that protects the following features in the landscape:

- Material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.
- Rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency, and which is older than 100 years, including any area within 10m of such representation.
- Graves and burial grounds, including ancestral graves, royal graves, graves of traditional leaders, graves of victims of conflict, historical graves and cemeteries, and other human remains not covered by the National Health Act and its regulations.

## 5 HISTORICAL OVERVIEW OF THE STUDY AREA

The high-level archival research focused on available information sources that were used to compile a general background history of the study area and surrounds.

### 5.1 OVERVIEW OF THE STUDY AREA AND SURROUNDING LANDSCAPE

#### 5.1.1 ARCHAEOLOGY

Most archaeological material in the Northern Cape is found near water sources such as rivers, pans and springs, as well as on hills and in rock shelters. Sites usually comprise of open sites where the majority of evidence of human occupation is scatters of stone tools (Parsons 2003). Evaluation of the alignment has identified possible sensitive areas.

Since September 2011 a large number of Heritage and Archaeological Impact Assessments were completed in the vicinity of the proposed infrastructure areas. Most notably the work of Fourie (2012, 2013 and 2015), Orton (2011, 2012 and 2013), Kaplan (2010) and Kaplan and Wiltshire (2011) and Van der Walt (2012), has confirmed the statement by Parsons (2003), as noted earlier.



*Figure 13 - Early Stone Age stone tools found close to Kronos substation, just west of the study area*

Orton (2012) notes that literature has shown that the Bushmanland area is littered by low density lithic scatters, with well weathered Early (ESA) and Middle Stone Age (MSA) artefacts dominating the assemblages. Orton's (2012 and 2013) and Fourie's (2012, 2013, 2015) work on the Klipgats Pan and Hoekplaas, has produced numerous find spots as well as clusters of site located on elevated terraces overlooking pan-like areas, noted by Orton as being of LSA origin.

Fourie (2015) notes that findspots were mostly characterised by three types of setting, deflated red sands, and pebble concentrations associated with a calcrete exposure and non-deflated red sand exposures in between low-density vegetation.

The findspots varied from Later Stone Age (LSA) scatters consisting of flakes, chips and some cores manufactured from fine-grained quartzite, chalcedony, and cryptocrystalline (ccs) material; Middle Stone Age (MSA) lithics consisting of cores, chips and flakes with a low occurrence of formal tools. The majority of the material utilised were either lideanite that occur in the form of medium sized boulders or round washed pebbles in the area or coarse-grained quartzite that occur as sporadic outcrops.

Earlier Stone Age (ESA) lithics found at some of these finds spots consisted of hand axes, cleavers and large flakes. Most of the lithics were either rolled or heavily weathered with patination evident on 95% of the lithics.



*Figure 14 - Close-up view of quartzite flakes and debitage at Kr\_Cu/2012/003 (Debitage and lithics indicate by dots) a site situated some 500 meters to the east of the study area (Fourie, 2013)*

Kaplan and Wiltshire's (2011) work to the north of the study area has confirmed the presence of Stone Age Sites with a high local significance rating with the sites at Modderpan and Saaipan covering ESA, MAS and LSA finds. Several knapping occurrences and find spots were also made during the fieldwork.

Van der Walt (2012) indicates that the fieldwork done for the HIA on Bosjesmansberg, adjacent to the study area has shown a high incidence of low-density scatters all over the study area. Wiltshire (2011) indicates the presence of round stone-built kraals, close or on low rises, which could possibly be associated with herder activity.

## **5.2 ARCHIVAL AND HISTORICAL MAPS**

The examination of historical data and cartographic resources represents a critical tool for locating and identifying heritage resources and in determining the historical and cultural context of the study area. Relevant topographic maps and satellite imagery were studied to identify structures, possible burial grounds or archaeological sites present in the footprint area.

Historical topographic maps (1:50 000) for various years (1944, 1996, 2006) were available for utilisation in the background study. These maps were assessed to observe the development of the area, as well as the location of possible historical structures and burial grounds. The study area was overlain on the map sheets to identify structures or graves situated within or immediately adjacent to the study area that could possibly be older than 60 years and thus protected under Section 34 and 36 of the NHRA.

### **5.2.1 SUD AFRICA, 1866**

(David Rumsey Historical Map Collection: reference cfP6163)

The map depicted in **Figure 15** below is titled "Sud Africa". The full title is: "*Sud Africa. Bearbeitet von Adolf Graf. Terrain v. G. Dietrich. Gest. v. G. Haubold. Weimar: Geographisches Institut. (to accompany) Hand - Atlas Der Erde Und Des Himmels.*". The map dates from 1866 and the author was Adolf Graf (Publisher: Geographisches Institut (*Weimer, Germany*)). The map was colour coded by Europeans and shows the routes followed by the principal explorers from 1831 to 1862. The orange represents the route that explorers would have taken.

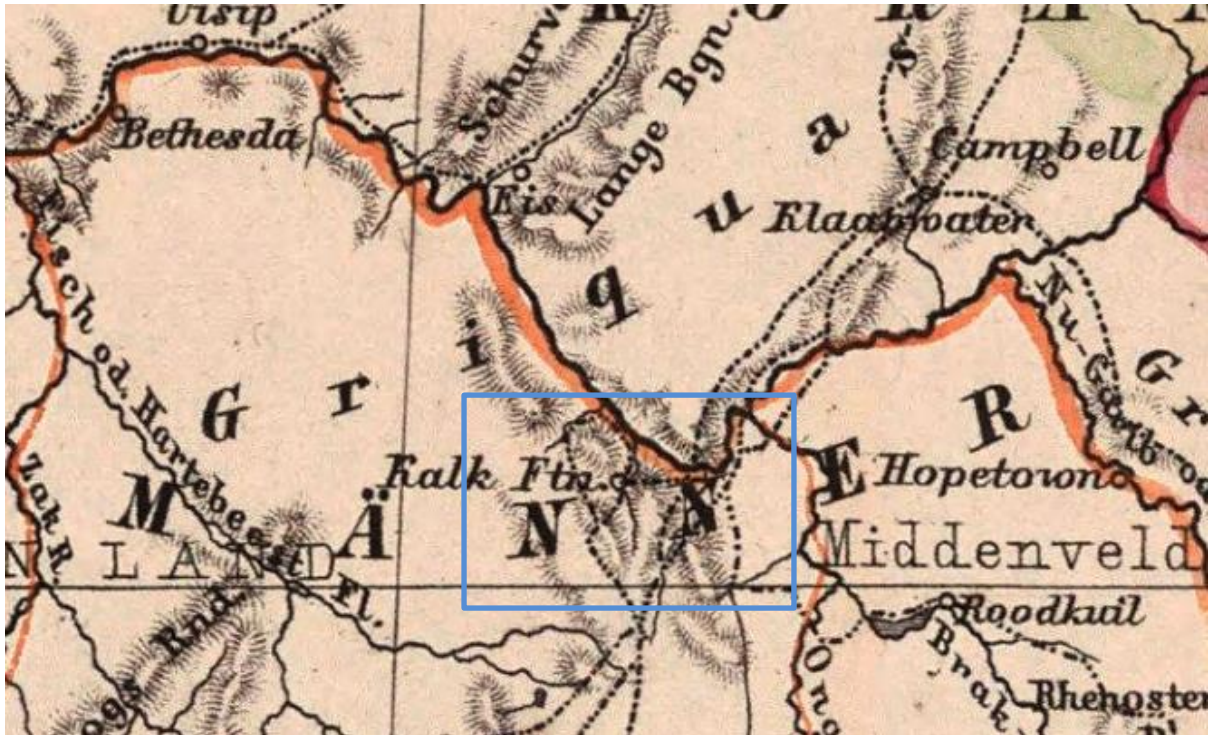


Figure 15 - Section of the 1866 Sud Africa map (blue polygon: approximate location of study area).

### 5.2.2 FIRST EDITION OF THE 2922CD AND 3022AB TOPOGRAPHICAL MAPS DATED TO 1970

The 2922CD Volstruisbult and 3022AB Springboklaagte map sheets was surveyed and drawn between 1964 and 1971. The only structure to be observed is the initial buildings associated with the start of the mining town of Copperton to the north of the Cuprum substation. **Figure 16**

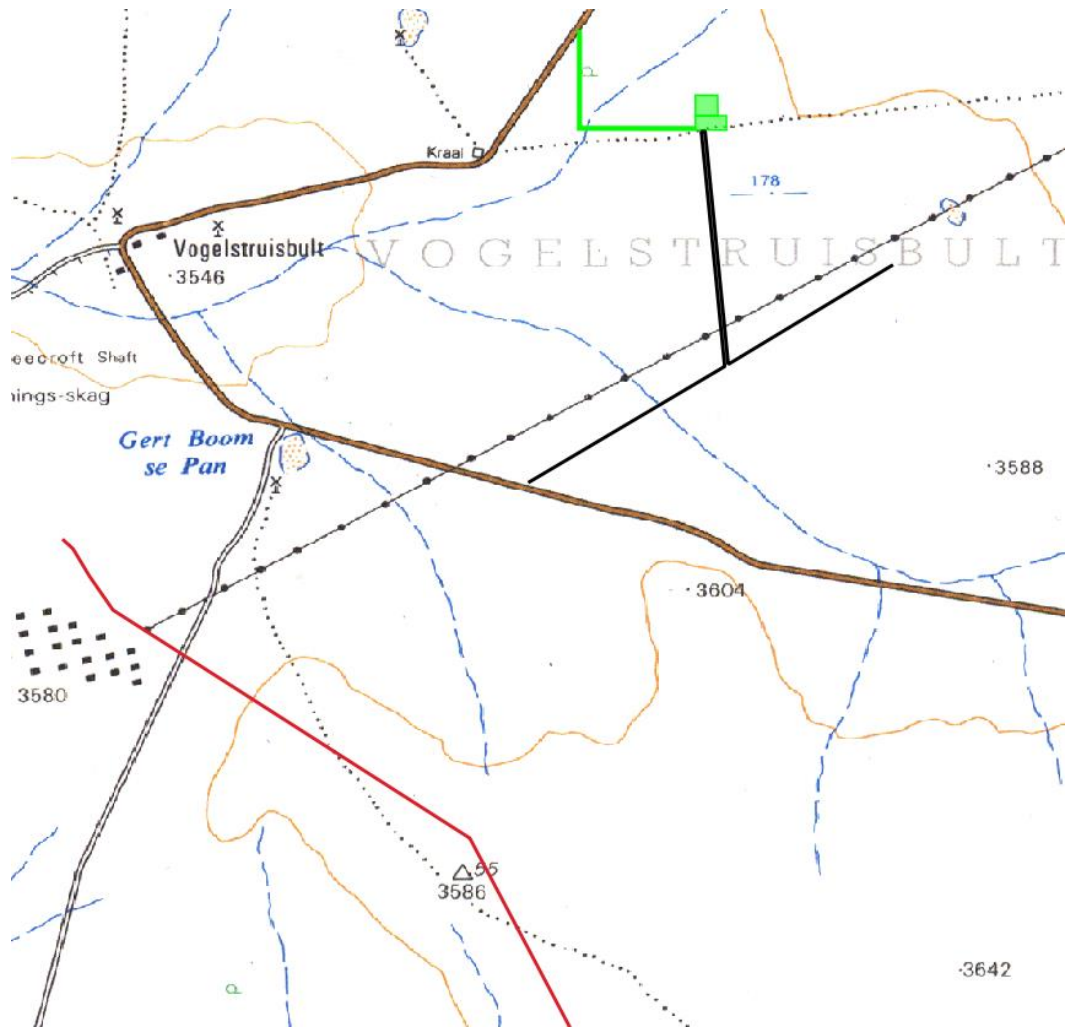


Figure 16 - Section of First Edition of the 2922CD and 3022AB Topographical Map with infrastructure indicated

### 5.2.3 SECOND EDITION OF THE 2922CD AND 3022AB TOPOGRAPHICAL MAPS DATED TO 1991

The 2922CD Volstruisbult and 3022AB Springboklaagte map sheets was published in 1991. The map depicts the infrastructure already establish as part of the Copperton town and mine **Figure 17**.

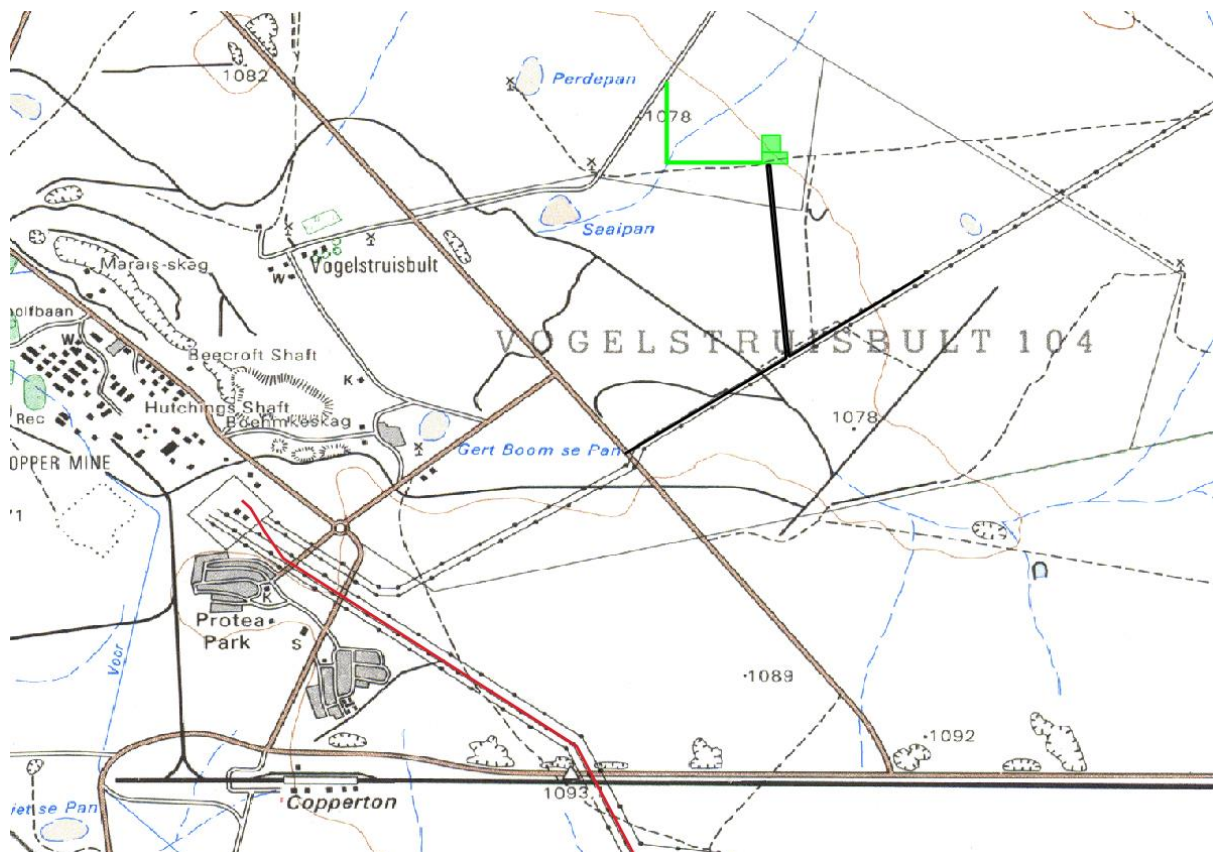


Figure 17 - Section of Second Edition 2922CD and 3022AB Topographical Map with infrastructure indicated

### 5.3 PREVIOUS HERITAGE IMPACT ASSESSMENT REPORTS FROM THE STUDY AREA AND SURROUNDINGS

A search of the South African Heritage Resources Information System (SAHRIS) database revealed that several previous archaeological and heritage impact assessments had been undertaken within the surroundings of the study area. In each case, the results of each study are shown in bold. These previous studies are listed below in ascending chronological order:

VAN RYNEVELD, K. 2006. Phase 1 Archaeological Impact Assessment - Vogelstruisbult 104, Prieska District, Northern Cape, South Africa. National Museum Bloemfontein

KAPLAN, J.M. 2010. Archaeological Scoping Study and Impact assessment of a proposed photovoltaic power generation facility in Copperton Northern Cape. Agency for Cultural Resource Management

KAPLAN, J.M. & WILTSHIRE, N. 2011. Archaeological Impact Assessment of a proposed wind energy facility, power line and landing strip in Copperton, Siyathemba municipality, Northern Cape. Agency for Cultural Resource Management

ATWELL, M. 2011. Heritage Assessment Proposed Wind Energy Facility And Related Infrastructure, Struisbult: (Farm 103, Portions 4 And 7), Copperton, Prieska, Atwell & Associates

ORTON, JAYSON. 2012a. Heritage Impact assessment for a proposed photovoltaic energy plant on the farm Klipgats Pan near Copperton, Northern Cape. Archaeology Contracts Office  
Department of Archaeology. University of Cape Town

ORTON, JAYSON. 2012b. Heritage Impact Assessment for a proposed photovoltaic energy plant on the farm Hoekplaas near Copperton, Northern Cape. Archaeology Contracts Office  
Department of Archaeology. University of Cape Town

ORTON, J & WEBLEY, L. 2013. Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on the Remainder of Farm Klipgats Pan 117, Copperton, Northern Cape

Van der Walt, Jaco. 2012. Archaeological Impact Assessment Report for the proposed Garob Wind Energy Facility Project, located close to Copperton in the Northern Cape. Heritage Contracts and Archaeological Consulting CC (HCAC)

FOURIE, W. 2012. Heritage Impact Assessment for the proposed Eskom Cuprum to Kronos Double Circuit 132kv Power line and Associated Infrastructure, Prieska, Northern Cape.

FOURIE, W. 2015. Heritage Impact Assessment for the proposed Helena 1 PV project, Copperton Northern Cape.

FOURIE, W. 2015. Heritage Impact Assessment for the proposed Helena 2 PV project, Copperton Northern Cape.

FOURIE, W. 2015. Heritage Impact Assessment for the proposed Helena 3 PV project, Copperton Northern Cape.



## 6 FIELDWORK AND FINDINGS

The fieldwork component of the study was aimed at identifying tangible remains of archaeological, historical and heritage significance. The fieldwork was conducted by two archaeologists from PGS (Nicholas Fletcher and Wynand van Zyl) on 12 January 2022. The fieldwork comprised a controlled exclusive survey of the proposed development footprint areas. The fieldwork team recorded track logs with their hand-held GPS devices. These track logs are depicted in yellow in **Figure 18** and show the areas assessed by the archaeologists during the fieldwork.

**No heritage resources were identified in the study area.**



Figure 18 - Map depicting the track logs (yellow lines) recorded during the current fieldwork.

## 7 IMPACT ASSESSMENT

The impact significance rating methodology, as provided by EIMS, is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/likelihood (P) of the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the ER to determine the overall significance (S). The impact assessment will be applied to all identified alternatives. Where possible, mitigation measures will be recommended for the impacts identified.

### 7.1 DETERMINATION OF ENVIRONMENTAL RISK

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER). The environmental risk is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. The consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and reversibility (R) applicable to the specific impact.

For the purpose of this methodology, the consequence of the impact is represented by:

$$C = \frac{(E+D+M+R) \times N}{4}$$

4

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in **Table 4** below.

*Table 4 - Criteria for Determining Impact Consequence*

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),

Aspect	Score	Definition
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
<b>Magnitude/ Intensity</b>	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
<b>Reversibility</b>	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

Once the C has been determined, the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/ scored as per Table 5.

*Table 5 - Probability Scoring*

<b>Probability</b>	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur)

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

$$ER = C \times P$$

*Table 6 - Determination of Environmental Risk*

<b>Consequence</b>	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
	0	1	2	3	4	5
	<b>Probability</b>					

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in **Table 7**.

Table 7 - Significance Classes

Environmental Risk Score	
Value	Description
< 9	Low (i.e. where this impact is unlikely to be a significant environmental risk).
≥9 - <17	Medium (i.e. where the impact could have a significant environmental risk),
≥17	High (i.e. where the impact will have a significant environmental risk).

The impact ER will be determined for each impact without relevant management and mitigation measures (pre-mitigation), as well as post-implementation of relevant management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/mitigated.

## 7.2 IMPACT PRIORITISATION

Further to the assessment criteria presented in the section above, it is necessary to assess each potentially significant impact in terms of:

1. Cumulative impacts; and
2. The degree to which the impact may cause irreplaceable loss of resources.

To ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF will be applied to the ER score based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 8 - Criteria for Determining Prioritisation

<b>Cumulative Impact (CI)</b>	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/ definite that the impact will result in spatial and temporal cumulative change.
<b>Irreplaceable Loss of Resources (LR)</b>	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.

	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).
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The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 9. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (Refer to **Table 9**).

*Table 9 - Determination of Prioritisation Factor*

Priority	Ranking	Prioritisation Factor
2	Low	1
3	Medium	1.125
4	Medium	1.25
5	Medium	1.375
6	High	1.5

In order to determine the final impact significance, the PF is multiplied by the ER of the post-mitigation scoring. The ultimate aim of the PF is an attempt to increase the post-mitigation environmental risk rating by a full ranking class if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential and significant potential for irreplaceable loss of resources, then the net result would be too upscale the impact to a high significance).

*Table 10 - Final Environmental Significance Rating*

Environmental Significance Rating	
Value	Description
< -17	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
≥ -17 ≤ -9	Medium negative (i.e. where the impact could influence the decision to develop in the area).
> -9, <0	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
0	No impact
<0, <9	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ 19 ≤ 17	Medium positive (i.e. where the impact could influence the decision to develop in the area).

Environmental Significance Rating	
Value	Description
≥ 217	High positive (i.e. where the impact must have an influence on the decision process to develop in the area).

The significance ratings and additional considerations applied to each impact will be used to provide a quantitative comparative assessment of the alternatives being considered. In addition, professional expertise and opinion of the specialists and the environmental consultants will be applied to provide a qualitative comparison of the alternatives under consideration. This process will identify the best alternative for the proposed project.

### 7.3 HERITAGE IMPACTS

No heritage resources were identified. Despite an intensive walkthrough of the footprint area, no evidence for any archaeological or heritage sites could be identified. As a result, no impact is expected from the proposed development on heritage.

**Table 11** indicates the rating of the possible impacts and the overall impact inclusive of cumulative impact is low. The possibility of chance finds of unidentified heritage resources, can be mitigated through the proposed management measures contained in the next section of this report.

Table 11 - Impact rating for heritage resources

IMPACT DESCRIPTION		Pre-Mitigation							Post Mitigation								Priority Factor Criteria			
Identifier	Impact	Nature	Extent	Duration	Magnitude	Reversibilit	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibilit	Probability	Post-mitigation ER	Confidence	Cumulative Impact	Irreplaceable loss	Priority Factor	Final score
10.1.1	Impact on heritage resources	-1	1	1	1	5	2	-4	-1	1	1	1	2	1	-1,25	High	1	1	1,00	-1,25



## **8 MANAGEMENT RECOMMENDATIONS AND GUIDELINES**

### **8.1 CONSTRUCTION PHASE**

The project will encompass a range of activities during the Construction Phase, including disturbance to the soil surface and small-scale infrastructure development associated with the project.

It is always possible that cultural material may be exposed during construction and may be recoverable, keeping in mind delays can be costly during construction and as such must be minimised. Development surrounding mining and construction results in significant disturbance; however, any excavation work offers a window into the past, and it thus may be possible to rescue some of the data and materials. It is also possible that substantial alterations will be implemented during this phase of the project, and these must be catered for. Temporary infrastructure developments, such as construction camps and laydown areas, are often changed or added to the project as required. In general, these are low impact developments as they are superficial, resulting in little alteration of the land surface, but still need to be catered for.

During the Construction Phase, it is important to recognize any significant material being unearthed, making the correct judgment on which actions should be taken. It is recommended that the following chance find procedure should be implemented.

### **8.2 CHANCE FIND PROCEDURE**

- An appropriately qualified heritage practitioner / archaeologist must be identified to be called upon if any possible heritage resources or artefacts are identified.
- Should an archaeological site or cultural material be discovered during construction (or operation), the area should be demarcated, and construction activities halted.
- The qualified heritage practitioner / archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and the impact on the heritage resource.
- The contractor therefore should have some sort of contingency plan so that operations could move elsewhere temporarily while the materials and data are recovered.
- Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner / archaeologist.

### **8.3 POSSIBLE FINDS DURING CONSTRUCTION PHASES**

The study area occurs within a greater historical and archaeological context as identified during the desktop and fieldwork phase. Soil clearance may uncover the following:

- Unmarked graves.

- High density stone artefact deposits

#### 8.4 TIMEFRAMES

It must be kept in mind that mitigation and monitoring of heritage resources discovered during construction activity will require permitting for collection or excavation of heritage resources and lead times must be worked into the construction time frames. The table below gives guidelines for lead times on permitting.

*Table 12 - Lead times for permitting and mobilisation*

<b>Action</b>	<b>Responsibility</b>	<b>Timeframe</b>
Preparation for field monitoring and finalisation of contracts	The contractor and service provider	1 month
Application for permits to do necessary mitigation work	Service provider – Archaeologist and SAHRA	3 months
Documentation, excavation and archaeological report on the relevant site	Service provider – Archaeologist	3 months
Handling of chance finds – Graves/Human Remains	Service provider – Archaeologist and SAHRA	2 weeks
Relocation of burial grounds or graves in the way of construction	Service provider – Archaeologist, SAHRA, local government and provincial government.	6 months

## 8.5 HERITAGE MANAGEMENT PLAN FOR EMPR IMPLEMENTATION

Table 13 - Heritage Management Plan for EMPr implementation

Area and site no.	Mitigation measures	Phase	Timeframe	The responsible party for implementation	Monitoring Party (frequency)	Target	Performance indicators (monitoring tool)
<b>General project area</b>	<ul style="list-style-type: none"> <li>Implement a chance find procedures in case where possible heritage finds are uncovered.</li> </ul>	Construction	During construction	Applicant ECO Heritage Specialist	ECO (monthly / as or when required)	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 34-36 and 38 of NHRA	ECO Monthly Checklist/Report

## 9 CONCLUSIONS

PGS was appointed by EIMS to undertake a HIA, which forms part of the environmental process for the additional infrastructure associated with the Struisbuilt PV2 solar facility of Mulilo, located on the farms Vogelstruisbult 104, Klipgats Pan 117 and Hoekplaas 146 near Copperton, Siyathemba Local Municipality, Northern Cape.

This HIA aims to evaluate the possible impacts on heritage resources present within the proposed development footprint of the proposed infrastructure. Immediate and direct impacts on archaeological resources were addressed through the HIA.

The HIA has shown that the study area has no heritage resources situated within the proposed development boundaries.

### 9.1 HERITAGE SITES

The fieldwork component of the study was aimed at identifying tangible remains of archaeological, historical and heritage significance. The fieldwork was undertaken by way of intensive walkthroughs of the proposed footprint areas. The fieldwork was conducted by two archaeologists from PGS (Nicholas Fletcher and Wynand van Zyl) on 11 January 2022. It is important to note that although as intensive a fieldwork coverage as possible was undertaken. **During the field work, no archaeological sites or burial grounds and graves were identified.**

### 9.2 IMPACT ASSESSMENT

Despite an intensive walkthrough of the footprint area for the proposed footprint areas, no evidence for any archaeological or heritage sites could be identified within the environs of the study area. As a result, no impact is expected from the proposed development on heritage.

### 9.3 MITIGATION MEASURES

With no impact expected on heritage, no further mitigation is required. Refer to **Section 8** of this report.

## 9.4 GENERAL

It is the considered opinion of the authors of this report that the overall impact of the proposed Struisbult PV2 additional infrastructure on heritage resources will be Low. Provided that the general recommendations and mitigation measures outlined in this report are implemented, the impact would be acceptably Low or could be totally mitigated to the degree that the project could be approved from a heritage perspective.

## 10 REFERENCES

### 10.1 PUBLISHED REFERENCES

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## **10.2 GOOGLE EARTH**

All the aerial depictions and overlays used in this report are from Google Earth.

## WOUTER FOURIE

### Professional Heritage Specialist and Professional Archaeologist and Director PGS Heritage

#### Summary of Experience

Specialised expertise in Archaeological Mitigation and excavations, Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including *inter alia* -

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave “rescue” excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments, within South Africa, including -

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects
- Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring
- Involvement with various Heritage Impact Assessments, outside South Africa, including -
- Archaeological Studies in Democratic Republic of Congo
- Heritage Impact Assessments in Mozambique, Botswana and DRC
- Grave Relocation project in DRC

#### Key Qualifications

BA [Hons] (Cum laude) - Archaeology and Geography - 1997

BA - Archaeology, Geography and Anthropology - 1996

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP) CRM Accreditation (ASAPA) -

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Field Supervisor – Colonial Period and Stone Age
- Accredited with Amafa KZN

#### Key Work Experience

2003- current - Director – Professional Grave Solutions (Pty) Ltd

2007 – 2008 - Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand



2005-2007 - Director – Matakoma Heritage Consultants (Pty) Ltd

2000-2004 - CEO– Matakoma Consultants

1998-2000 - Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998 - Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

Worked on various heritage projects in the SADC region including, Botswana, Mozambique, Malawi, Mauritius, Zimbabwe and the Democratic Republic of the Congo