

# HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38(8) OF THE NHRA (No. 25 OF 1999))

FOR THE PROPOSED MIDAS BATTERY ENERGY STORAGE (BESS) FACILITY,  
GAUTENG PROVINCE

**Type of development:**

Battery Energy Storage (BESS) Facility

**Applicant:**

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## APPROVAL PAGE

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<b>Report Title</b>	Heritage Impact Assessment for the proposed Midas Battery Energy Storage (BESS) Facility, Gauteng Province
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**Amendments on Document**

Date	Report Reference Number	Description of Amendment

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## REPORT OUTLINE

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the Environmental Authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

**Table 1. Specialist Report Requirements.**

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae.	Section a
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority.	<i>Declaration of Independence</i>
(c) Indication of the scope of, and the purpose for which, the report was prepared.	Section 1
(cA) An indication of the quality and age of base data used for the specialist report.	Section 3.4.
(cB) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 9
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 3.4
(e) 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 site plan identifying site alternatives.	Section 7, 8 and 9
(g) Identification of any areas to be avoided, including buffers.	Section 7,8 and 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers.	Section 8
(l) Description of any assumptions made and any uncertainties or gaps in knowledge.	Section 3.7
(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 or activities.	Section 1.3
(k) Mitigation measures for inclusion in the EMPr.	Section 9.1 and 9.5
(l) Conditions for inclusion in the environmental authorisation.	Section 9. 1 and 9.5
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation.	Section 9.6
(n) Reasoned opinion - (i) As to whether the proposed activity, activities or portions thereof should be authorised; (iA) Regarding the acceptability of the proposed activity or activities; and (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.	Section 9.3
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 5
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	Refer to the EIA report
(q) Any other information requested by the competent authority.	No other information requested at this time

## Executive Summary

Midas BESS (Pty) Ltd, is proposing the construction of the Midas Battery Energy Storage (BESS) Facility, located on Portion 10 of the Farm Uitval No. 280, approximately 18 km east of Carletonville. Midas BESS (Pty) Ltd, is also proposing to upgrade the existing access road on Portion 8 and Portion 10 of the Farm Uitval No. 280; and to construct new 132kV grid connection infrastructure on Portion 10 of the Farm Uitval No. 280, Portion 22 of the Farm Driefontein No. 355, Portion 5 of the Farm Doornkloof No. 350, Portion 71 of the Farm Leeupoort 356, Portion 70 of the Farm Leeupoort 356, Portion 36 of the Farm Leeupoort 356, Portion 35 of the Farm Leeupoort 356, Portion 33 of the Farm Leeupoort 356 and Portion 28 of the Farm Driefontein 355. The Project area is situated within the the Merafong City Local Municipality and the Rand West City Local Municipality within the West Rand District Municipality of the Gauteng Province. Midas BESS (Pty) Ltd. Beyond Heritage was appointed to conduct a Heritage Impact Assessment (HIA) for the Project and the study area was assessed through a desktop assessment and by a non-intrusive pedestrian field survey. Key findings of the assessment include:

- The Project area is situated within an altered landscape of large, agricultural fields and extensive mining in the region including historical mining of gold.
- The project area is largely flat and lacks any topographic features which would have attracted Stone Age or Iron Age occupation;
- During the survey, a cemetery (MDS001) and a blue gum plantation (MDS002) were recorded. Cemetery MDS001 is situated outside of the grid corridor and will not be impacted by the Project. No heritage resources were recorded within the BESS facility area;
- According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study area is of very high and high palaeontological sensitivity and an independent by Prof Marion Bamford concluded that the proposed site lies on the dolomites of the very highly sensitive Malmani Subgroup (Chuniespoort Group, Pretoria Supergroup) that might preserve trace fossils such as stromatolites or microbialites. The site visit and walk through on 24<sup>th</sup> January 2024 by palaeontologists confirmed that the area is open and relatively flat with no rocky outcrops and no trace fossils. Fairly deep soils are covered with thick grassland. Nonetheless a Fossil Chance Find Protocol should be added to the EMPr

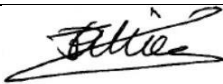
The impact on heritage resources is low, and the Project can be authorised provided that the recommendations in this report are adhered to and based on the SAHRA's approval.

### Recommendations:

The following recommendations for Environmental Authorisation apply and the Project may only proceed after receiving comment from SAHRA:

- The cemetery at MDS001 should be avoided with a 30m buffer zone;
- Development activities must be confined to the approved development footprint only;
- Monitoring of the Project area by the ECO during pre-construction and construction phases for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.

**Declaration of Independence**

<b>Specialist Name</b>	JP Celliers
<b>Declaration of Independence</b>	<p>I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 107 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations (as amended), that I:</p> <ul style="list-style-type: none"> <li>• I act as an independent specialist in this application;</li> <li>• 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;</li> <li>• I declare that there are no circumstances that may compromise my objectivity in performing such work;</li> <li>• 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;</li> <li>• I will comply with the Act, Regulations and all other applicable legislation;</li> <li>• I have no, and will not engage in, conflicting interests in the undertaking of the activity;</li> <li>• 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;</li> <li>• All the particulars furnished by me in this form are true and correct; and</li> <li>• I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 49 A of the Act.</li> </ul>
<b>Signature</b>	
<b>Date</b>	09/02/2024

**a) Expertise of the specialist**

JP Celliers is a seasoned Heritage Specialist who has been involved in Heritage Impact Assessment and archaeological research projects since 2003. He holds an MA Degree with specialisation in Archaeology (UP).

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**ABBREVIATIONS**

ASAPA	Association of South African Professional Archaeologists
BGG	Burial Ground and Graves
CFPs	Chance Find Procedures
CMP	Conservation Management Plan
CoGHSTA	Co-operative Governance, Human Settlements and Traditional Affairs
CRR	Comments and Response Report
CRM	Cultural Resource Management
DFFE	Department of Fisheries, Forestry and Environment,
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment*
EIA	Early Iron Age*
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
ESA	Early Stone Age
ESIA	Environmental and Social Impact Assessment
GIS	Geographical Information System
GPS	Global Positioning System
GRP	Grave Relocation Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MEC	Member of the Executive Council
MIA	Middle Iron Age
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MSA	Middle Stone Age
NCHM	National Cultural History Museum
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID	Notification of Intent to Develop
NoK	Next-of-Kin
PRHA	Provincial Heritage Resource Agency
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

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

**GLOSSARY**

Archaeological site	Remains of human activity over 100 years old
Earlier Stone Age	~ 2.6 million to 250 000 years ago
Middle Stone Age	~ 250 000 to 40-25 000 years ago
Later Stone Age	~ 40-25 000, to the historic period
The Iron Age	~ AD 400 to 1840
Historic	~ AD 1840 to 1950
Historic building	Over 60 years old

## 1 Introduction

Beyond Heritage was appointed to conduct a Heritage Impact Assessment (HIA) for the proposed construction of the Midas Battery Energy Storage (BESS) Facility, located on Portion 10 of the Farm Uitval No. 280, approximately 18 km east of Carltonville. Midas BESS (Pty) Ltd is also proposing to upgrade the existing access road on Portion 8 and Portion 10 of the Farm Uitval No. 280; and to construct new 132kV grid connection infrastructure on Portion 10 of the Farm Uitval No. 280, Portion 22 of the Farm Driefontein No. 355, Portion 5 of the Farm Doornkloof No. 350, Portion 71 of the Farm Leeuwpoot 356, Portion 70 of the Farm Leeuwpoot 356, Portion 36 of the Farm Leeuwpoot 356, Portion 35 of the Farm Leeuwpoot 356, Portion 33 of the Farm Leeuwpoot 356 and Portion 28 of the Farm Driefontein 355. The Project area is situated within the Merafong City Local Municipality and the Rand West City Local Municipality within the West Rand District Municipality of the Gauteng Province of South Africa (Figure 1.1 to 1.3). The report forms part of the Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPr) for the development and informs the EIA phase of this process.

The aim of the study was to survey the proposed development footprint to understand the cultural layering of the area, and if heritage features are found, to assess their importance within local, provincial, and national context. It further served to assess the impact of the proposed Project on non-renewable heritage resources. The study will submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. Recommendations are included to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999) (NHRA).

The report outlines the approach and methodology utilized before and during the survey, which includes:

- Phase 1, review of relevant literature;
- Phase 2, the physical surveying of the area on foot and by vehicle;
- Phase 3, reporting the outcome of the study.

During the survey, a cemetery and blue gum plantation were recorded in the study area. General site conditions and features in the study area were recorded by means of photographs, GPS locations and descriptions. Possible impacts were identified, and mitigation measures are proposed in this report.

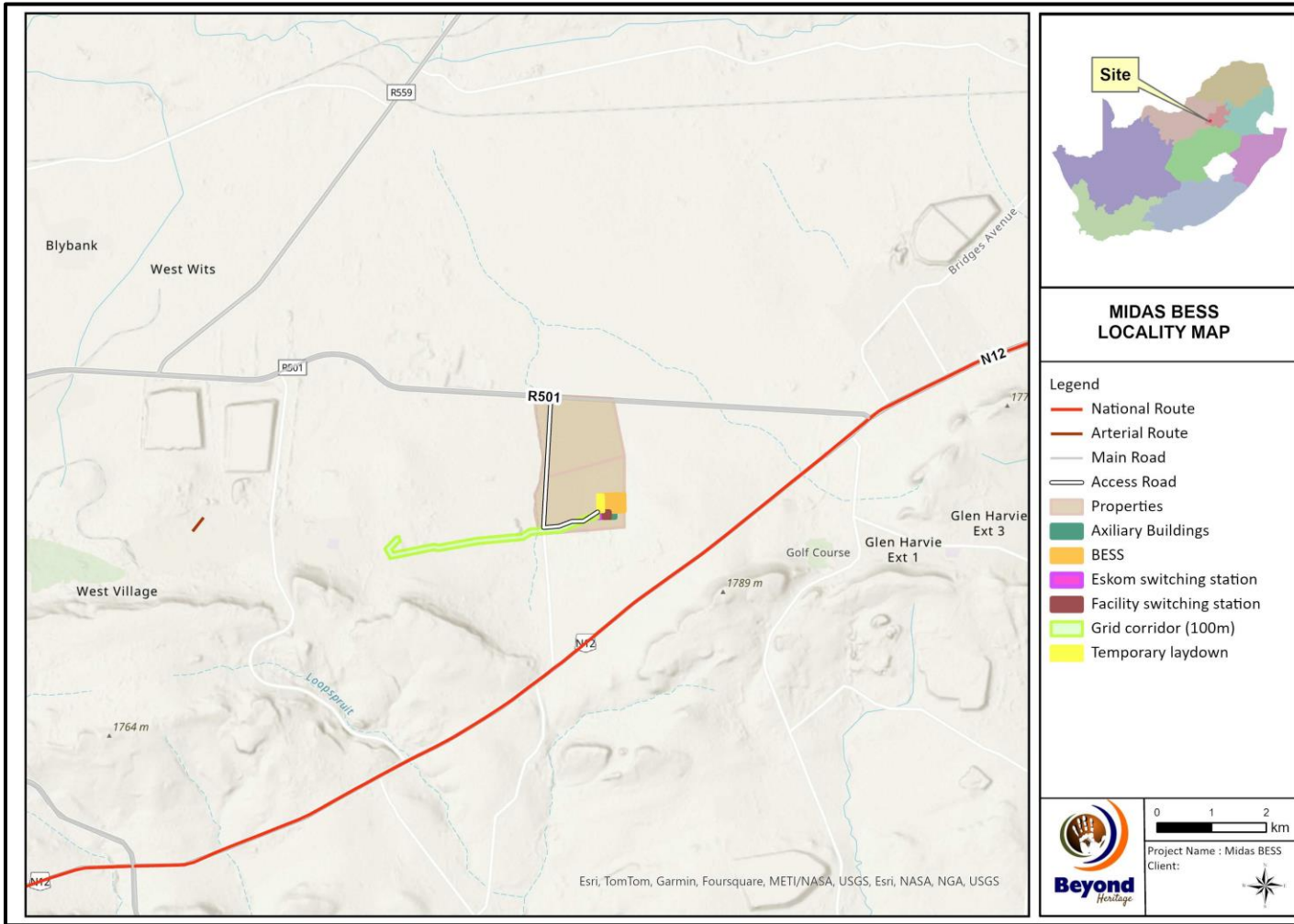


Figure 1.1. Local setting of the Project.

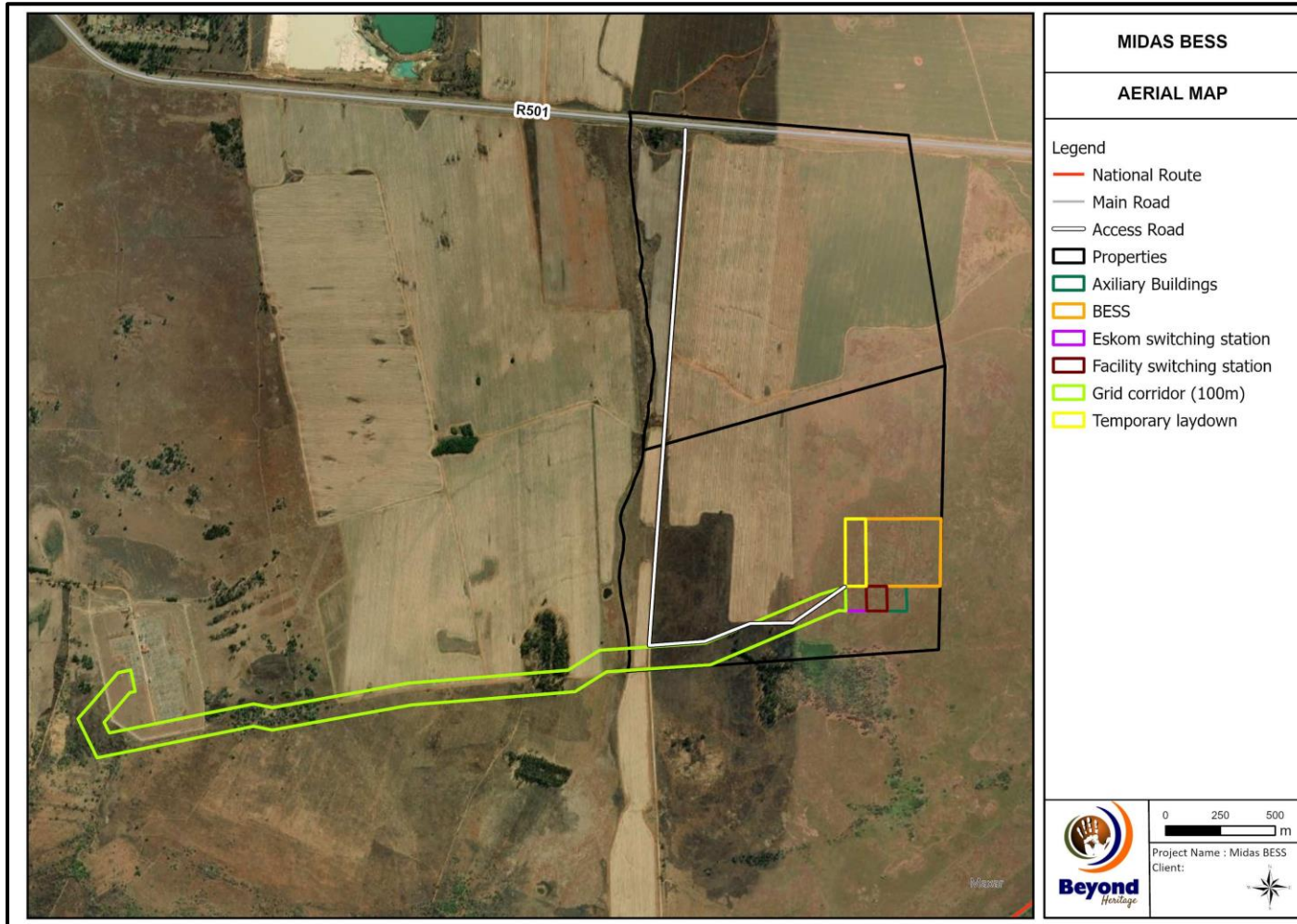


Figure 1.2. Aerial image of the Project area and surrounds.

### 1.1 Terms of Reference

The following Terms of Reference were adhered to in conducting this HIA.

#### **Field study**

Conduct a field study to: (a) survey the development footprint to understand the heritage character of the impact area; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed development.

#### **Reporting**

Report on the identification of anticipated and cumulative impacts the operational units of the proposed Project activity may have on the identified heritage resources for all 3 phases of the project, i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of Association of South African Professional Archaeologists (ASAPA).

Recommendations are provided to assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

## 1.2 Project Description

Project components and the location of the Midas Battery Energy Storage (BESS) Facility are outlined in Tables 2 and 3.

**Table 2: Project Description**

<b>Magisterial District</b>	Merafong City Local Municipality and Rand West City Local Municipality within the West Rand District Municipality
<b>Central co-ordinate of the development</b>	26°22'54.04"S 27°33'43.71"E
<b>1:50 000 Topographic Map Number</b>	2627 BC

**Table 3: Infrastructure and project activities**

<b>Type of development</b>	Battery Energy Storage (BESS) Facility
<b>Maximum export capacity</b>	77MW
<b>Project Details:</b>	
<p>The proposed Midas BESS will cover approximately 15 ha and will include the following infrastructure:</p> <ul style="list-style-type: none"> <li>• Solid State Battery Energy Storage System (BESS) (up to 10 ha).</li> <li>• Inverters and transformers</li> <li>• Site and internal access roads (up to 8m wide).</li> <li>• Operation and Maintenance buildings including a gate house and security building, control centre, offices, warehouses and workshops for storage and maintenance (up to 1 ha).</li> <li>• Laydown areas (3 ha temporary and 1 ha permanent).</li> <li>• A 132 kV facility substation (up to 1 ha).</li> <li>• 33 kV cabling between the project components and the facility substation.</li> </ul> <p>The project will also include Grid connection infrastructure consisting of:</p> <ul style="list-style-type: none"> <li>• A 132 kV Eskom Switching Station (up to 1 ha).</li> <li>• 132 kV powerline (up to 4 km long) connecting the Eskom switching station to the Midas Main Transmission Substation (a grid connection corridor of 100m wide will be assessed to allow for environmental sensitivities and/or micro-siting).</li> </ul> <p>The Grid connection infrastructure, although assessed cumulatively with the BESS, will be subject to a separate environmental application process administered by the provincial authority.</p>	

## 1.3 Alternatives

No alternatives were provided, but the area assessed allows for siting of the development to avoid impacts to heritage resources.



## 2 Legislative Requirements

The HIA, as a specialist study to the EIA, is required under the following legislation:

- National Heritage Resources Act ((NHRA), Act No. 25 of 1999)
- National Environmental Management Act ((NEMA), Act No. 107 of 1998 - Section 23(2)(b))

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;
- Assess the nature and degree of significance of such resources;
- Assess the negative and positive impact of the development on these resources; and
- Make recommendations for the appropriate heritage management (or avoidance) of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMPr, to the Provincial Heritage Resource Agency (PHRA) or to The South African Heritage Resources Agency (SAHRA). SAHRA will ultimately be responsible for the evaluation of Phase 1 HIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 HIA reports and additional development information, as per the impact assessment report and/or EMPr, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 HIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

SAHRA as a commenting authority under section 38(8) of the NHRA require all environmental documents, compiled in support of an EA application as defined by the National Environmental Management Act (NEMA) (Act No 107 of 1998) to be submitted to SAHRA for commenting. Environmental Impact Assessment (EIA) Regulations section 40 (1) and (2). The Environmental Impact Assessment (EIA) Regulations, Government Notice Regulation (GN) R.982 were published on 04 December 2014 and promulgated on 08 December 2014. Together with the EIA Regulations, the Minister also published GN R.983 (Listing Notice No. 1), GN R.984 (Listing Notice No. 2) and GN R.985 (Listing Notice No. 3) in terms of Sections 24(2) and 24D of the NEMA, as amended) Upon submission to SAHRA 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 EMPr, once it's completed by the Environmental Assessment Practitioner (EAP).

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level). Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 HIAs are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance (refer to Section 3.5). Relevant conservation or mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

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

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;

- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa

Conservation or mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision-making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement. After mitigation of a site, a destruction permit must be applied for with SAHRA by the applicant before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36 and GNR 548 as well as the SAHRA BGG Policy 2020. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 of the National Heritage Resources Act (NHRA), as well as the National Health Act of 2003 and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925) re-instituted by Proclamation 109 of 17 June 1994 and implemented by CoGHSTA as well as the National Health Act 2003 and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under the National Health Act of 2003

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**3 METHODOLOGY****3.1 Literature Review and background study**

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS). Findings are included in Section 6.1 and 6.2.

**3.2 Genealogical Society and Google Earth Monuments**

Google Earth and 1:50 000 topographic maps of the area were utilised to identify possible places of heritage sensitivity might be located; these locations were marked and visited during the fieldwork phase. The database of the Genealogical Society of South Africa (GSSA) was consulted to collect data on any known graves in the area. Results are included in Section 6.3.

**3.3 Public Consultation and Stakeholder Engagement:**

Stakeholder engagement is a key component of any BA process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process undertaken by the EAP was to capture and address any issues raised by community members and other stakeholders. Results are included in Section 5 and the final BA report.

### 3.4 Site Investigation

The aim of the site visit was to:

- a) survey the proposed Project area to understand the heritage character of the area and to record, photograph and describe sites of archaeological, historical or cultural interest;
- b) record GPS points of sites/areas identified as significant areas;
- c) determine the levels of significance of the various types of heritage resources recorded in the Project area.

**Table 4: Site Investigation Details**

	Site Investigation
Date	18 January 2024
Season	Summer – The time of year and season had some effect on the results of the survey as the groundcover grasses were dense and taller than hip-level in some areas. The Project area was however sufficiently covered to understand the heritage character of the area (Figure 3.1).

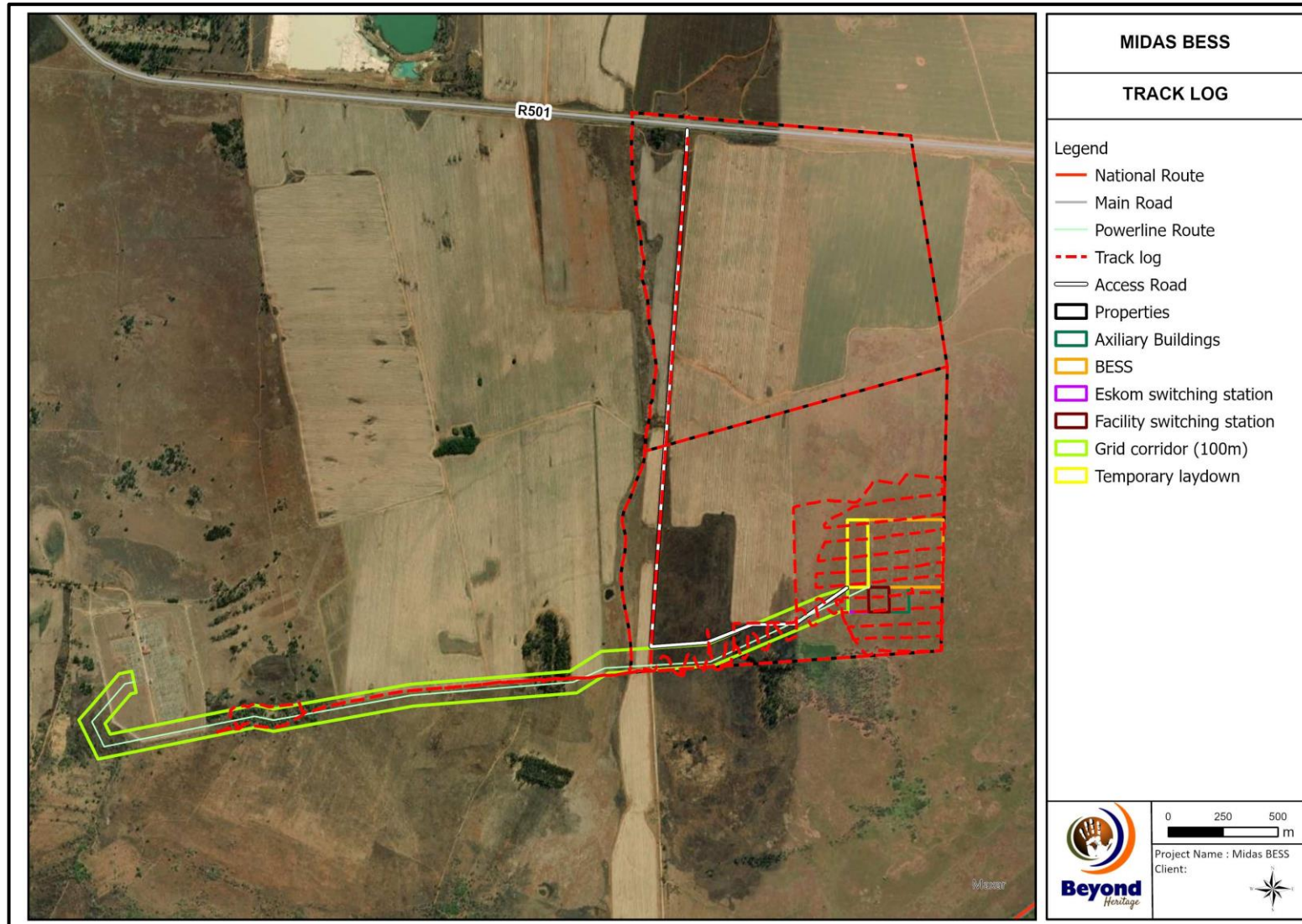


Figure 3.1. Tracklog of the survey path in green.

### 3.5 Site Significance and Field Rating

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire Project area, or a representative sample, depending on the nature of the project. In the case of the proposed Project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

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

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 9 of this report.

**Table 5. Heritage significance and field ratings**

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

### 3.6 Impact Assessment Methodology

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

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

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

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

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

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

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



### 3.7 Assumptions and limitations of the study

- The authors acknowledge that the brief literature review is not exhaustive of the literature of the area.
- Due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered/recorded and the possible occurrence of graves and other cultural material cannot be excluded. This limitation is successfully mitigated with the implementation of a Chance Find Procedure (CFP) and monitoring of the study area by the Environmental Control Officer (ECO).
- This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys.
- Field data were recorded by handheld GPS and Mobile GPS applications. It must be noted that during the process of converting spatial data to final drawings and maps the accuracy of spatial data may be compromised. Printing or other forms of reproduction might also distort the spatial distribution in maps. Due care has been taken to preserve accuracy
- This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components will be highlighted through the public consultation process if relevant. This process is facilitated by the EAP and if not done this can be considered a significant limitation and as a potential Project risk. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

## 4 Description of Socio-Economic Environment

According to Census 2011, Merafong City Local Municipality has a total population of 197 520, of which 86,5 % are black African, 11,8 % are white, 1,1 % are coloured, and 0,3 % are Indian/Asian. Of those aged 20 years and older, 6,1 % have completed primary schooling, 39,8 % have some secondary education, 26,4 % have completed matric, and 7,1% have some form of higher education. 91 521 people are economically active (employed or unemployed but looking for work), and of these, 27,7% are unemployed. Of the 45 142 of the economically active youth (15–35years) in the area (statssa.gov.za).

Rand West City is a newly established local municipality in the Gauteng province. It was established after the August 3, 2016 local government elections by amalgamating Randfontein and the Westonaria local municipalities. The new municipality has a population of 265887 making it the 4th most populous of the Gauteng province. The 2011 census indicates that residents of the area had an unemployment rate of 27%. When discouraged worker seekers are included among the unemployed this figure rise to 32%. Residents of Rand West City have the 2nd highest unemployment rate in the Gauteng (randwestcity.gov.za).

## 5 Results of Public Consultation and Stakeholder Engagement:

In line with the NHRA, stakeholder engagement is a key component of any EA process, it involves stakeholders interested in, or affected by the proposed development. At the time of writing no heritage concerns have been raised.

## 6 Contextualising the study area

### 6.1 Archaeological Background

#### 6.1.1 Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

**Earlier Stone Age:** The period from  $\pm 2.5$  million yrs. -  $\pm 250\,000$  yrs. ago. Acheulean stone tools are dominant. No significant Acheulean sites are on record near the study area, but isolated finds may be possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a site of significance.

**Middle Stone Age:** The Middle Stone Age includes various lithic industries in SA dating from  $\pm 250\,000$  yrs. –  $25\,000$  yrs. before present. This period is first associated with archaic Homo sapiens and later Homo sapiens sapiens. Material culture includes stone tools with prepared platforms and stone tools attached to handles.

**Later Stone Age:** The period from  $\pm 25\,000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with Homo sapiens sapiens. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art. Sites located in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters.

The greater region has not undergone extensive Stone Age research apart from archaeological surveys. There is thus little record of significant sites within the landscape. Stone Age scatters have however been found during a survey conducted by Huffman et al (1994), directly south of the Project area around the Driefontein mines. The MSA tools were made from a red ironstone and the LSA tools were made using fine grained cherts and chalcedonies. This depicts early hominid movement through the landscape however significant Stone Age sites are not prevalent. A few rock engraving sites relating to the LSA have been recorded northeast of Carletonville (Bergh 1999).

#### 6.1.2 Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

- The Early Iron Age: Most of the first millennium AD.
- The Middle Iron Age: 10th to 13th centuries AD
- The Late Iron Age: 14th century to colonial period.

No Early or Middle Iron Age sites have been recorded in the larger region. Iron Age occupation in the region date to the Later Iron Age after climatic conditions became favourable in the region for LIA settlement and agricultural activities. Iron Age communities in the region are associated with Sotho, Tswana, and Nguni speaking ancestors who entered and settled in the region. LIA stone-walling complexes can be found spread across the broader landscape with associated artefacts. These LIA settlements can be widely found on flat-topped ridges and hills throughout the landscape. The stonewalled complexes have been found to have all used variations of a similar spatial organisations. The stone walled settlements within the larger region were later classified as belonging to the Molokwane settlement type which is prevalent across this part of Gauteng (Pistorius 1992; Huffman 2007).

The hills surrounding Fochville, south west of the Project area are well known for the Tlokwe Ruins which are scattered throughout. The region surrounding the project area is known to have been inhabited by the Bakwena baMare-a-Phogole who are known to have settled south of Fochville during the LIA (Vorster 1969). Under the leadership of their chief, Kokosi, the baMare-a-Phogole are believed to have inhabited the region until the 1820s

when Mzilikazi and his Matabele raided the interior of South Africa and killed and drove out many Iron Age communities (Sadr 2020).

### 6.1.3 Historical Background

The Difaqane (Sotho), or Mfekane (“the crushing” in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820’s until the late 1830’s (Bergh 1999: 10). It came about in response to heightened competition for land and trade and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes (Bergh 1999: 14; 116-119). It seems that, in 1827, Mzilikazi’s Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence (Bergh 1999: 11). During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720’s.

It was however only by the late 1820’s that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent (Ross 2002: 39). By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp (Bergh 1999: 15).

The discovery of the gold reef on the Witwatersrand in 1886 resulted in widespread mining developments in and around Johannesburg. During the 1930s, prospecting took place in the region in an attempt to discover the gold fields. This led to the subsequent development of ten gold mines in the region (Pistorius 2019). The town of Carletonville was established on the farm Twyfelvlakte by the West Witwatersrand Areas gold mining company in 1948 and was named after Guy Carleton James who was the director of Consolidated Gold Fields (Raper 2004). Carletonville is home to some of the richest gold mines in South Africa including West Driefontein, East Driefontein, Western Deep Levels and Blyvooruitzicht. The gold fields, known as the West Wits Line is the richest gold among the Witwatersrand fields.

Westonaria was proclaimed in 1938 as a result of all the mining activities that took place in this area since 1910 when the first shaft – Pullinger Shaft was sunk. Venterspost town was proclaimed in 1937; Hillshaven, Glenharvie, Waterpan and Libanon were established as mining residential areas. Bekkersdal was established in 1945 and administered under Westonaria Town Council ([westonaria.gov.za](http://westonaria.gov.za)).

### 6.1.4 Anglo-Boer War

In 1900, Boer military leader Daniel Theron was killed in action near present day Fochville. In present day Hillshaven, east of the Project area, the battle of Modderfontein took place on 31 January 1901 whereby Boer General Smuts defeated General Cunningham.

Further away at the Klipriviersberg ridge, the Battle of Doornkop took place in the area on 29 May 1900. The British were advancing toward Johannesburg led by General John French. De La Rey and his men held the Klipriviersberg Ridge for the first two days but on the third day the Boers were outflanked by French’s cavalry to the West, where General Sarel Oosthuizen’s commando was forced to withdraw. This opened the road to Johannesburg and the British took the city peacefully on 30 May 1900.

Anglo-Boer War structures and ruins have been identified in the larger region as the British were pursuing General De Wet and General De la Rey through the landscape (Huffman et al 1994). Potential sangars were identified near the Driefontein mines which was erected by the British as low windbreaks (Huffman et al 1994).

## 6.2 Literature Review (SAHRIS)

Several Cultural Resource Management (CRM) surveys are on record for the general area and the relevant results of these studies are briefly discussed below and outlined in Table 6.

**Table 6. Studies consulted for the project.**

Author	Year	Project	Findings
Du Piesanie, J.	2016	Environmental Impact Assessment for Sibanye Gold Limited's West Rand Tailings Retreatment Project - Heritage Impact Assessment.	Cemeteries, historic dwellings, multiple werfs, stone structure, stone foundations, stone walled complex, modern structures.
Huffman, T.N., van der Merwe, H.D., Steel, R.	1994	Archaeological Survey of the East and West Driefontein Mines.	MSA and LSA artefacts, two large Iron Age stone-walled complexes, historic stone-walled features, and possible Anglo-Boer War associated structures.
Pelser, A.J.	2018	Report on a Phase 1 Archaeological Impact Assessment for the proposed Development of 2 New Kilns as Part of Corobrik Driefontein's Expansion on Portions 23 & 27 (Portions of Portion 22) of the Farm Driefontein 355IQ, near Carletonville, Gauteng.	No sites were identified.
Fourie, W., van der Walt, J.	2005	Harmony Gold / Simmer & Jack 4 Shaft - Waterpan 292 IQ. Heritage Assessment	Three cemeteries, Historic structures, ritual site, LIA sites.
Van der Walt, J.	2017	Heritage Impact Assessment for the Proposed South Deep Solar PV Project, Westonaria, Gauteng Province.	Grave, historic ruins, isolated MSA lithics.
Schoeman, M.H., Barrie, L.	2004	Archaeological Reconnaissance for the Proposed New South Deep Tailings Dam. A phase-1 report prepared for Metago Environmental Engineers.	ESA, MSA, LSA artefacts, Historical stone walling, remains of an old homestead.
Hardwick, S.	2018	Environmental Impact Assessment for the Blyvoor Gold Mining Project near Carletonville, Gauteng Province.	No sites were identified.
Küsel, U.	2008	Cultural Heritage Resources Impact Assessment of Portion 11 of the Farm Leeuspruit 184 IQ, Fochville, North West Province.	No sites were identified.

## 6.3 Google Earth and the Genealogical Society of South Africa (Graves and Burial Sites)

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. The database of the Genealogical Society of South Africa indicated no known grave sites within the study area.

## 7 Heritage Baseline

### 7.1 Description of the Physical Environment

The vegetation of the Project area belongs to the Carletonville Dolomite Grassland the Grassland Biome. It is described as slightly undulating plains dissected by prominent rocky chert ridges. Species-rich grasslands forming a complex mosaic pattern dominated by many species (Mucina and Rutherford 2006).

The project area is situated approximately 18km east of Carletonville and the site is accessed through gravel roads from the R502 and N12. The study area is mostly flat but does fluctuate between 1590 and 1640 metres above sea level. No rocky outcrops are present in the study area. Sections of the 132 kV powerline run along existing gravel roads and passes adjacent to large, agricultural fields. General site conditions are indicated in (Figure 7.1 to 7.2).



Figure 7.1. General site conditions of the Project area.



Figure 7.2. General site conditions of the Project area showing vegetation found in the Project area.

### 7.2 Heritage Resources

Heritage observations within the study area included a cemetery and blue gum plantation and were recorded as waypoints. General site distribution of the recorded observations in relation to the Project layout is spatially illustrated in Figure 7.3 and briefly described in Table 7. Selected features are illustrated in Figure 7.4. to 7.7.

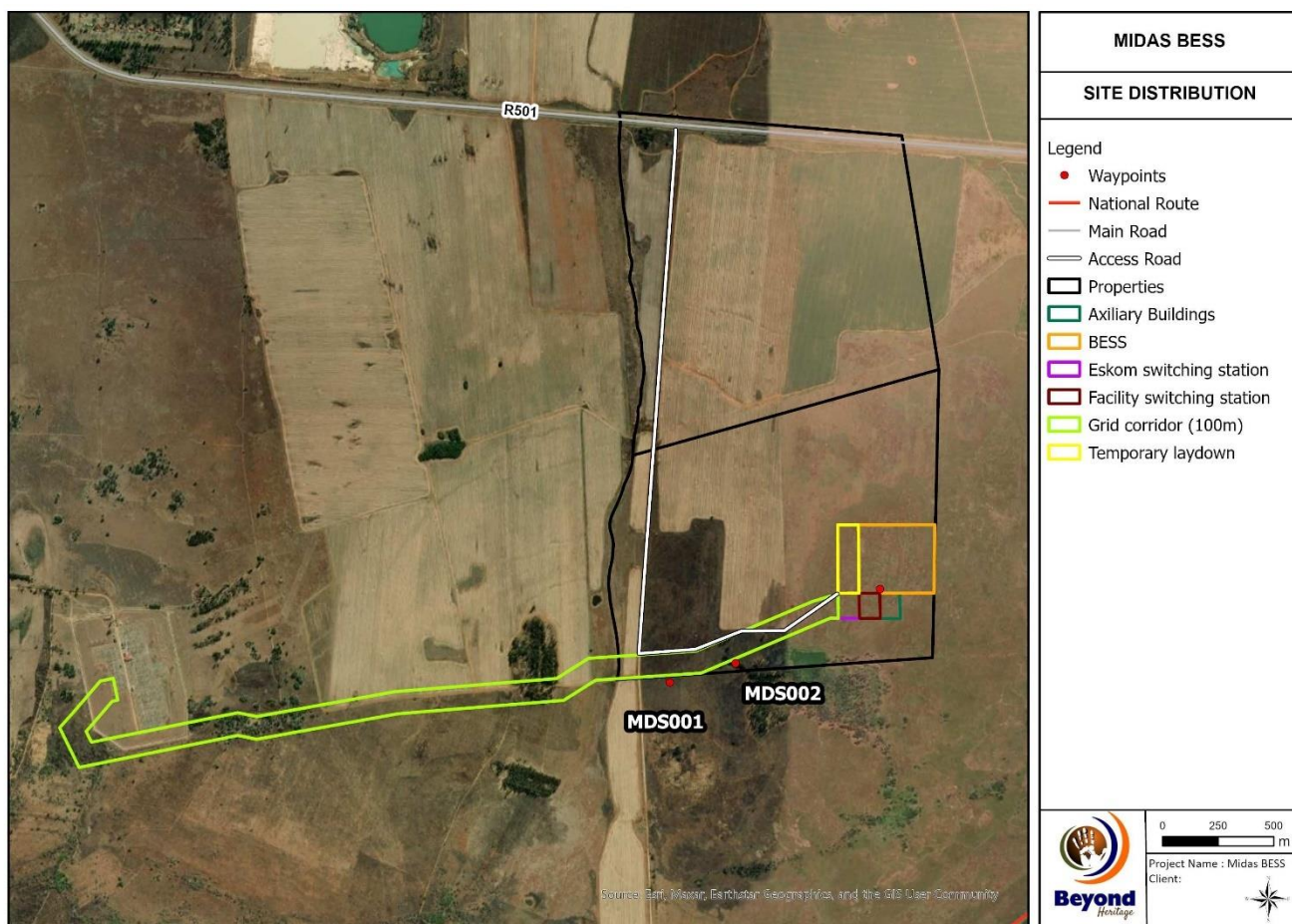


Figure 7.3. Site distribution map

Table 7. Sites recorded in the study area

Label	Longitude	Latitude	Description	Significance
<b>MDS001</b>	27° 33' 09.4"E	26° 23' 12.5"S	The site consists of a cemetery with ±45 graves. Most graves are stone cairns while some are made from cement and granite. Most of the graves with dates date to 1975 and 1976 while one granite grave dates to 1968. The cemetery is 20x40m in size and is located next to a dirt track that is almost completely rehabilitated.	Local Significance 3A
<b>MDS002</b>	27° 33' 20.0"E	26° 23' 09.5"S	The observation consists of a Bluegum plantation. The plantation is 170 metres long and does not bare any cultural significance.	Low Significance GP C



Figure 7.4. The earliest known grave (Jack Hlongwane) of the cemetery MDS001 dating to 1968.



Figure 7.5. Example of a Cement grave at MDS001. Date ranging between 1968 and 1975.



Figure 7.6. Example of a stone grave at MDS001, date unknown.



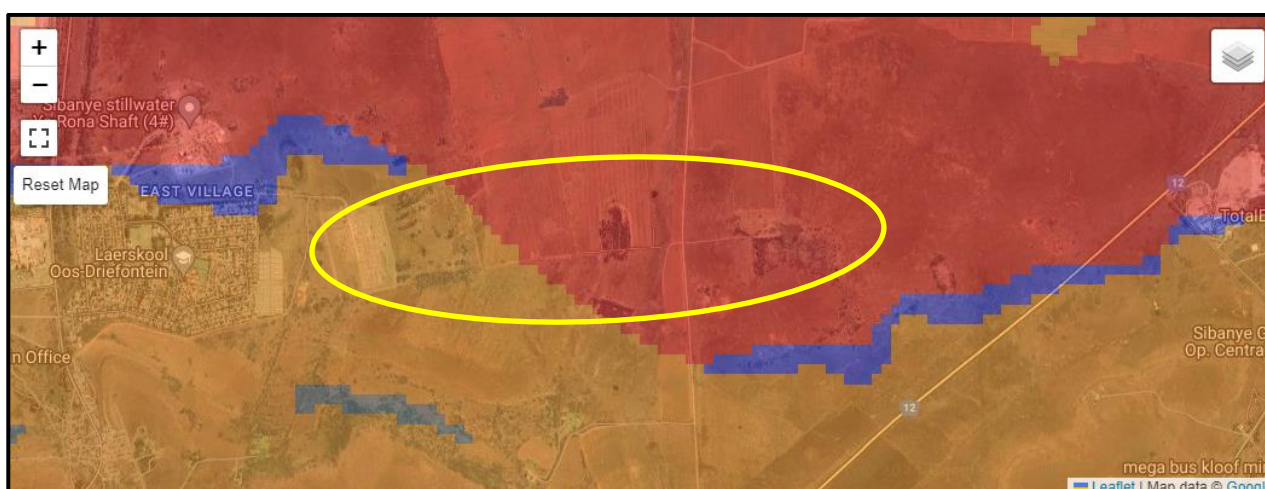
Figure 7.7. Blue gum plantation at MDS002.

### 7.3 Cultural Landscape

The Project area is situated an area which has historically had a predominantly agricultural character with vast open areas. The area has more recently been transformed by extensive mining and associated developments and has consequently adopted a more industrial character.

### 7.4 Paleontological Heritage

According to the SAHRA palaeontological sensitivity map, the study area is indicated as high and very high palaeontological sensitivity (Figure 7.11) and an independent study by Prof Marion Bamford indicated that based on the fossil record but confirmed by the site visit and walk through there are NO FOSSILS such as stromatolites or microbialites in the project area even though fossils have been recorded from rocks of a similar age and type in South Africa. It is extremely unlikely that any fossils would be preserved in the overlying soils and sands of the Quaternary. There is a very small chance that fossils may occur below the ground surface in the dolomites of the Malmani Subgroup (Chuniespoort Group, Transvaal Supergroup) so a Fossil Chance Find Protocol should be added to the EMPr.



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

Figure 7.8. Paleontological sensitivity of the approximate study area (yellow polygon) as indicated on the SAHRA Palaeontological sensitivity map.



## 8 Assessment of impacts

### 8.1 Impacts on tangible heritage resources.

The main cause of impacts to archaeological resources is physical disturbance of the material itself and its context during removal of topsoil and vegetation as well as the excavations associated with the establishment of infrastructure. The cemetery MDS001 is situated outside of the grid corridor and will not be impacted by the project. The cemetery should be avoided with a 30m buffer zone to avoid indirectly impacting the site. A section of the blue gum plantation at MDS002 will be impacted by the grid corridor but due to the lack of cultural significance the impact to the site will be low.

#### 8.1.1 Cumulative impacts

The proposed project will have a low cumulative impact as no known heritage resources will be adversely affected.

### 8.2 Impact Assessment Tables

**Table 8. Impact assessment for MDS001**

<b>Nature:</b> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects.		
	<b>Without mitigation</b>	<b>With mitigation (Preservation/excavation of site)</b>
<b>Extent</b>	Local (1)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Moderate (6)	Moderate (6)
<b>Probability</b>	Probable (3)	Improbable (2)
<b>Significance</b>	<b>36 (Medium)</b>	<b>24 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	NA	NA
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>The site should be avoided with a 30m buffer zone;</li> <li>Implementation of a chance find procedure for the project.</li> </ul>		
<b>Residual Impacts:</b>		
Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted on, but this cannot be quantified.		

## 9 Conclusion and recommendations

The Project area is situated within a disturbed landscape of large, agricultural fields and extensive mining in the region including historical mining of gold. The Project area is also largely flat and lacks any topographic focal points which would have attracted human occupation in antiquity.

During the survey, a cemetery (MDS001) and a blue gum plantation (MDS002) were recorded. Cemetery MDS001 is situated outside of the grid corridor and will not be impacted by the Project. A section of MDS002 is situated within the grid corridor and could be impacted, but due to the lack of cultural significance the impact to the site will be low. No heritage resources were recorded within the BESS facility area.

According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study area is of very high and high palaeontological sensitivity and an independent study by Prof Marion Bamford concluded that the proposed site lies on the dolomites of the very highly sensitive Malmani Subgroup (Chuniespoort Group, Pretoria Supergroup) that might preserve trace fossils such as stromatolites or microbialites. The site visit and walk through on 24<sup>th</sup> January 2024 by palaeontologists confirmed that the area is open and relatively flat with no rocky outcrops and no trace fossils. Fairly deep soils are covered with thick grassland. Nonetheless a Fossil Chance Find Protocol should be added to the EMPr

The impact to heritage resources is low provided that the recommendations in this report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval.

### 9.1 Recommendations for condition of authorisation

The following recommendations for Environmental Authorisation apply and the Project may only proceed based on approval from SAHRA:

- The cemetery at MDS001 should be avoided with a 30m buffer zone;
- Development activities must be confined to the approved development footprint only;
- Monitoring of the Project area by the ECO during pre-construction and construction phases for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.

## 9.2 Chance Find Procedure

### 9.2.1 Heritage Resources

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find and therefore chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below and monitoring guidelines applicable to the Chance Find procedure is discussed below and monitoring guidelines for this procedure are provided in Section 9.5.

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

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

### 9.2.2 Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (trace fossils, fossils of plants, insects, bone or coalified material) should be put aside in a suitably protected place. This way the Project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones (for example see Bamford 2024). This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this Project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the Project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

### **9.3 Reasoned Opinion**

The overall impact of the Project with the recommended mitigation measures is acceptable and residual impacts can be managed to an acceptable level through implementation of the recommendations made in this report. The socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures are implemented for the Project.

### **9.4 Potential risk**

Potential risks to the proposed Project are the occurrence of intangible features and unrecorded cultural resources (of which graves, and subsurface cultural material are the highest risk). This can cause delays during construction, as well as additional costs involved in mitigation and possible layout changes. The stakeholder engagement process will assess intangible heritage resources further if this is listed as a concern.

**9.5 Monitoring Requirements**

Day to day monitoring can be conducted by the ECO. The ECO or other responsible persons should be trained along the following lines:

- *Induction training:*
  - Responsible staff identified by the developer should attend a short course on heritage management and identification of heritage resources.
  - Staff should also receive training on the CFP.
- *Site monitoring and watching brief:* As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are from pre-construction and construction activities. The ECO should monitor all such activities. If any heritage resources are found, the chance finds procedure must be followed as outlined above.

Table 9. Monitoring requirements for the Project

Heritage Monitoring					
Aspect	Area	Responsible for monitoring and measuring	Frequency	Proactive or reactive measurement	Method
Cultural Heritage Resource Chance Find	Entire Project area	ECO	Weekly (Pre construction and construction phase)	Proactively	<p>If risks are manifested (accidental discovery of heritage resources) the chance find procedure should be implemented:</p> <ol style="list-style-type: none"> <li>1. Cease all works immediately;</li> <li>2. Report incident to the Sustainability Manager;</li> <li>3. Contact an archaeologist to inspect the site;</li> <li>4. Report incident to the competent authority; and</li> <li>5. Employ reasonable mitigation measures in accordance with the requirements of the relevant authorities.</li> </ol> <p>Only recommence operations once impacts have been mitigated.</p>

### 9.6 Management Measures for inclusion in the EMPr

**Table 10. Heritage Management Plan for EMPr implementation**

Area	Mitigation measures	Phase	Timeframe	Responsible party for implementation	Target	Performance indicators (Monitoring tool)
General Project area	Monitoring of the Project area by the ECO during pre-construction and construction phases for chance finds, if chance finds are encountered to implement the Chance Find Procedure for the project	Pre-Construction & Construction	Weekly	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 34, 35, 36 and 38 of NHRA	ECO Checklist/Report
General Project Area	Development activities must be confined to the approved development footprint only.	Construction	Construction	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report
MDS002	The cemetery MDS001 should be avoided with a 30m buffer zone.	Pre-Construction & Construction	Throughout the project	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report

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