



**Integrated Specialist Services (Pty) Ltd**

**PHASE 1 HIA FOR HIA/ARCHAEOLOGICAL  
IMPACT ASSESSMENT FOR PROSPECTING  
RIGHT APPLICATION WITHIN REMAINING  
EXTENT AND PORTION 1 OF FARM HURLEY  
688 FOR DIAMOND AND REMAINING EXTENT  
OF BRETBY 687 FARM FOR MANGANESE  
AND IRON ORE. IN THE ADMINISTRATIVE  
DISTRICT OF KURUMAN, NORTHERN CAPE  
PROVINCE.**

**T Mliilo**

## DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Prospecting Right Application of manganese ore, iron ore & diamond on the Farms Bretby 687 and Hurley 688, in the Kuruman Magisterial District, Northern Cape Province.
Purpose of the study	The Phase 1 Archaeological Impact Assessment for the Prospecting Right Application in Northern Cape Province
1:50 000 Topographic Map	
Coordinates	See Figure 3
Municipalities	Ga-Segonyana Local Municipality, John Taolo Gaetsewe District Municipality
Predominant land use of surrounding area	Agriculture and disused asbestos mine
Applicant	Raycom Resources
DMRE Reference	NC30/5/1/1/2/12989 PR
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Date of Report	10 September 2022

This report serves to inform and guide the applicant and contractors about the possible impacts that the proposed prospecting may have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located within the Farms Bretby 687 and Hurley 688, earmarked for prospecting. This report is submitted in terms of Section 38 (8) of the National Heritage Resources Act 25 of 1999 as part of the Prospecting Right Application. The purpose of this study is to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed prospecting activities. In compliance with these laws, Singo Consulting (Pty) Ltd engaged Integrated Specialist Services (Pty) Ltd on behalf of Raycom Resources to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for the proposed Prospecting Right Application. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks within the proposed prospecting site. The study site is not on pristine ground, having seen significant transformations owing previous and current land use activities such as agriculture. The general prospecting area is known for occurrence of archaeological and historical sites. The northern boundary of the proposed prospecting area is located approximately 4km from the declared Cave National Heritage Site (9/2/055/0005 <https://sahris.sahra.org.za/sites/920550005>). As such precautions have been undertaken to shift the drilling holes further south of the site to ensure that prospecting activities do not interfere with the site. It is important to note that proposed prospecting activities will be further south and exceeding the threshold for mining buffer zones gazetted in terms of SAHRA Regulations of 2020. In terms of the built environment the study noted historical farm buildings and structures. It should be noted that archaeological material and unmarked graves exist and when encountered during prospecting, work must be stopped forth-with, and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must be submitted to the SAHRA for review in terms of Section 38 (4) of the NHRA.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed prospecting.
- Most sections of the proposed prospecting site are inaccessible; however, the field survey was effective enough to cover significant sections of the project receiving environs.

- The immediate project area is predominantly stock, disused asbestos mine, game farming and military camp.
- Some sections of the proposed Prospecting Right Site are severely degraded from previous and current land use activities.
- The study recorded historical farmhouse and associated burial site as well as disused asbestos mine and associated infrastructure within the proposed prospecting site.

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

The report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed Prospecting Right Application on condition that the Wonderwerk Cave is treated as NO GO Areas.
3. Although SAHRA's concerns are noted, given the  $\pm 4$ km distance of the Wonderwerk Cave from the northern boundary of the site, the proposed prospecting activities are not likely to impact on the site from a noise, visual, Seismic and any other potential impacts during prospecting.
4. From a heritage perspective supported by the findings of this study, the Prospecting Right Application is supported. However, the Prospecting should be approved under observation that prospecting does not extend beyond the 4km boundary from the Wonderwerk Cave.
5. Should chance archaeological materials or human remains be exposed during prospecting on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in Prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
6. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed Prospecting Right Application. The Heritage authority may approve the Prospecting Right

Application as planned with special commendations to implement the recommendations here in made.

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

## NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

## DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Miilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.

### Expertise:

Trust Miilo, PhD *cand* (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Miilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom) and several private companies such as BHP Billiton and Rhino Minerals.

## Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and the survey was carried out under Integrated Specialist Services (Pty) Ltd. The company has no business, personal, financial or other interest in the proposed prospecting apart from fair remuneration for the work performed.

## Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Integrated Specialist Services (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Integrated Specialist Services (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

**Authorship:** This AIA/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).

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

**Maps:** Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

**Disclaimer:** The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the approval of the Prospecting Right Application being submitted by Raycom Resources

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Signed by

A handwritten signature in black ink, appearing to be 'H. P. de V.' or similar, written in a cursive style.

08/ 09/ 2022

## ACKNOWLEDGEMENTS

The author acknowledges Singo Consulting (Pty) Ltd for their assistance with the project details and responding to technical queries related to the project.

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## ABBREVIATIONS

<b>AIA</b>	Archaeological Impact Assessment
<b>ASAPA</b>	Association of South African Professional Archaeologists
<b>EIA</b>	Environmental Impact Assessment
<b>EIA</b>	Early Iron Age ( <i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted.</i> )
<b>EIAR</b>	Environmental Impact Assessment Report
<b>ESA</b>	Early Stone Age
<b>GPS</b>	Global Positioning System
<b>HIA</b>	Heritage Impact Assessment
<b>ICOMOS</b>	International Council of Monuments and Sites
<b>LIA</b>	Late Iron Age
<b>LFC</b>	Late Farming Community
<b>LSA</b>	Late Stone Age
<b>MIA</b>	Middle Iron Age
<b>MSA</b>	Middle Stone Age
<b>NEMA</b>	National Environmental Management Act 107 of 1998
<b>NHRA</b>	National Heritage Resources Act 25 of 1999
<b>PHRA</b>	Provincial Heritage Resource Agency
<b>SAHRA</b>	South African Heritage Resources Agency
<b>ToR</b>	Terms of Reference

## KEY CONCEPTS AND TERMS

### Periodization

**Periodization** Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below.

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

### Definitions

**Definitions** Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

**Cultural (heritage) resources** are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

**Cultural significance** is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

**Value** is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually

exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

**Isolated finds** are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

**In-situ** refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

**Archaeological site/materials** are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

**Historic material** are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

**Chance finds** means archaeological artefacts, features, structures or historical remains accidentally found during development.

**A grave** is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

**A site** is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

**Heritage Impact Assessment (HIA)** refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires authorisation of permission by law, and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

**Impact** is the positive or negative effects on human well-being and / or on the environment.

**Mitigation** is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

**Mining heritage sites** refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

**Study area** or '**project area**' refers to the area where the developer wants to focus its development activities (refer to plan).

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

#### Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be exposed during prospecting activities, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6)). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Integrated Specialist Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

## 1 INTRODUCTION

Integrated Specialist Services (Pty) Ltd was retained by Singo Consulting (Pty) Ltd on behalf of Raycom Resources to carry out a Phase 1 AIA/ HIA for the proposed Prospecting Right Application on the Farms Bretby 687 and Hurley 688, in the Kuruman Magisterial District, Northern Cape Province. This study was conducted to fulfil the requirements of Section 38 (8) of the NHRA. The purpose of this heritage study is to identify, assess any heritage resources that may be located within the proposed prospecting site in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Middle Stone Age (MSA), Late Stone Age (LSA) and Late Iron Age (LIA) as well as historical sites. It is conceded that the area around Wonderwerk Cave has been subjected to systematic archaeological surveys and excavations to determine the extent of the site and any potential sites. To date we can confirm that no other sites were recorded in the proposed prospecting area that require protection during prospecting. The proposed Prospecting Right Application may be approved subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings there is no archaeological and heritage reasons why the Proposed Prospecting Right Application cannot be approved, taking full cognizance of clear procedures to follow in the event of chance findings. The identified burial site can be avoided without compromising the prospecting plan.

### 1.1 Terms of Reference (ToR)

Integrated Specialist Services (Pty) Ltd was requested by Singo Consulting (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the prospecting site including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the Prospecting Right Application
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located within the project site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the prospecting on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources; and
- Review applicable legislative requirements.



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## 1.2 Project Location

The site is located on the Farms Bretby 687 and Hurley 688, in the Kuruman Magisterial District, Northern Cape Province. The project site is located approximately 40 km south of Kuruman Town in the Northern Cape Province.

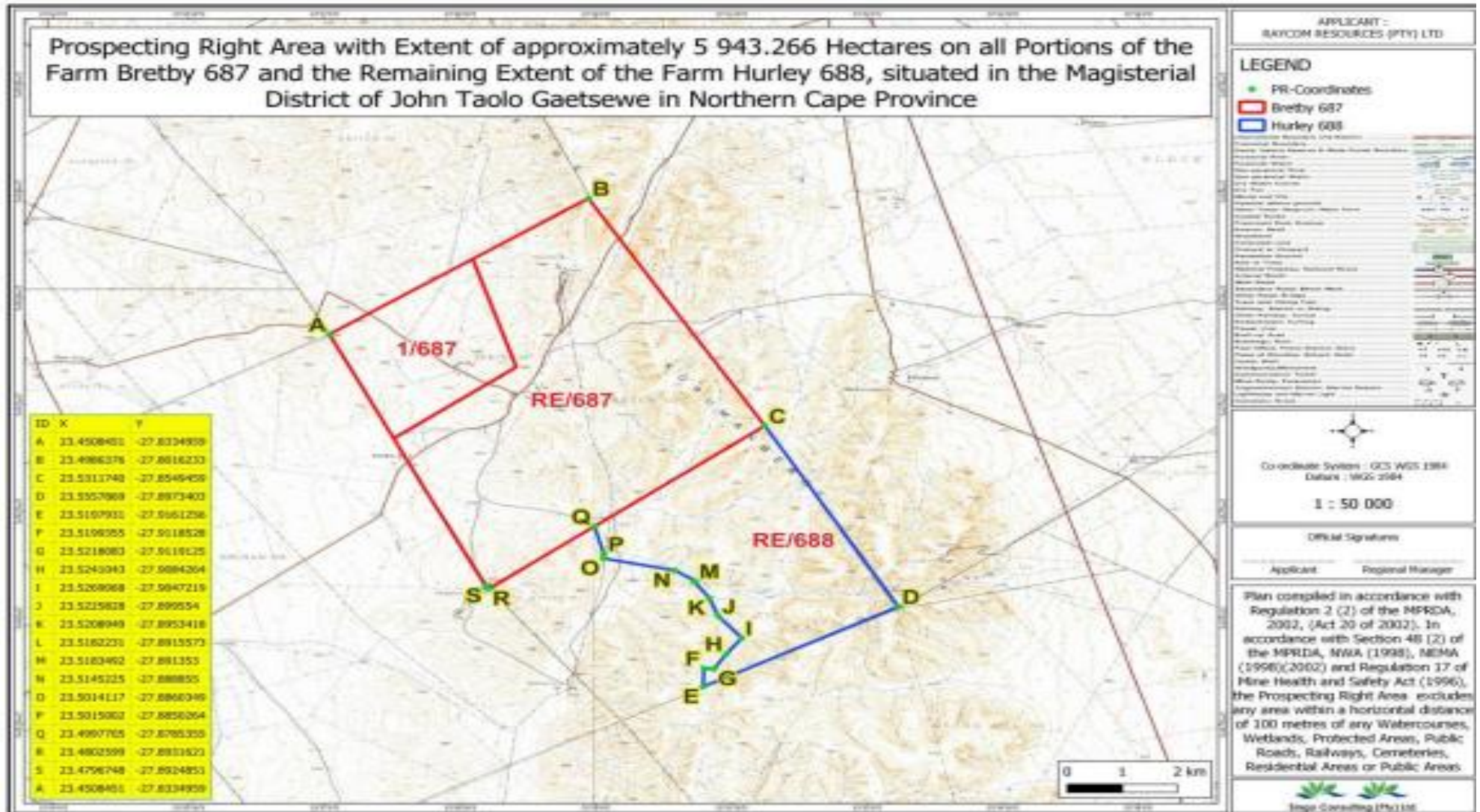


Figure 1: Location of the proposed prospecting site (NDI Geological Services 2022)

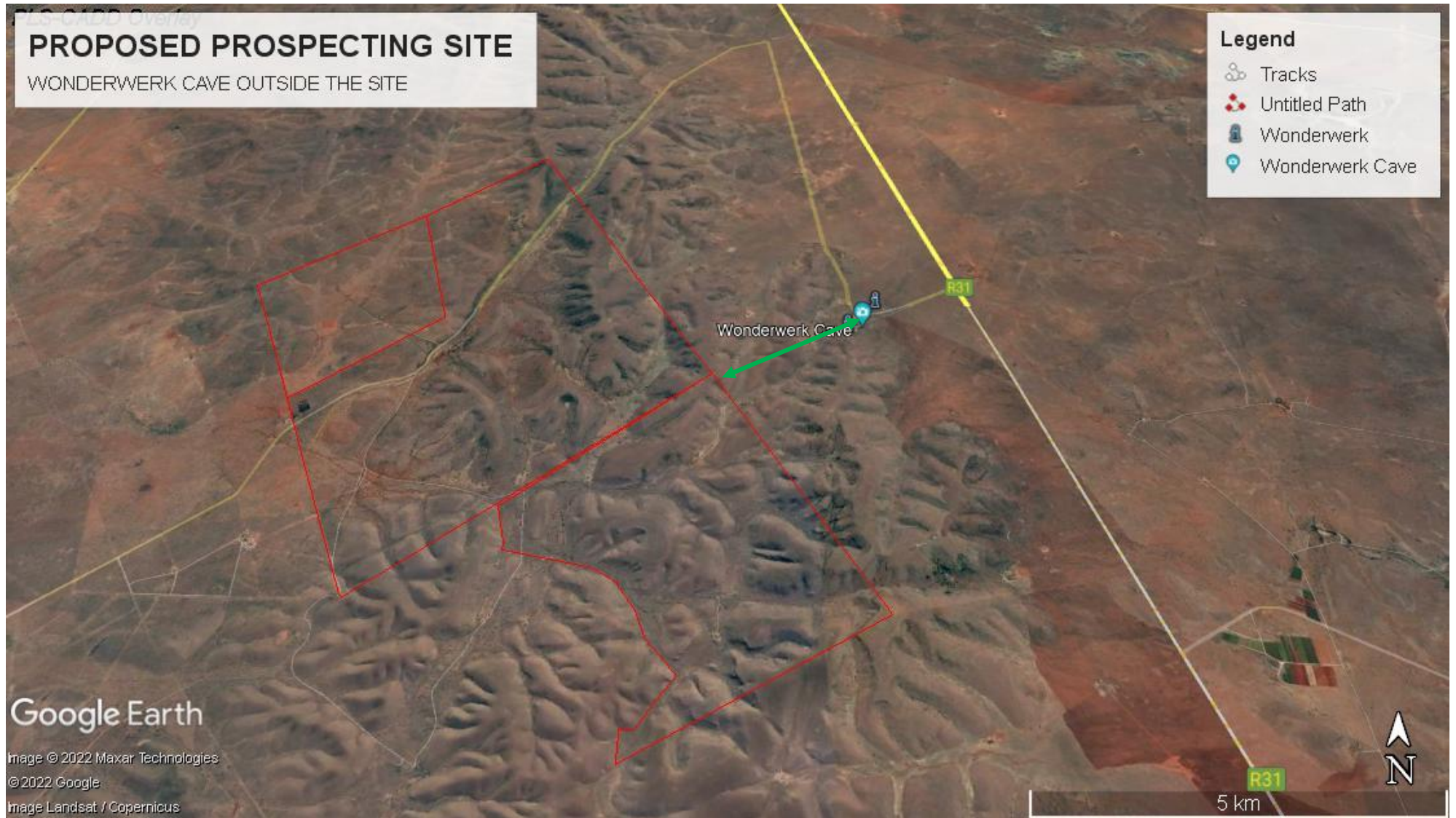


Figure 2: Proposed Location of boreholes (NDI Geological Services 2022)

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

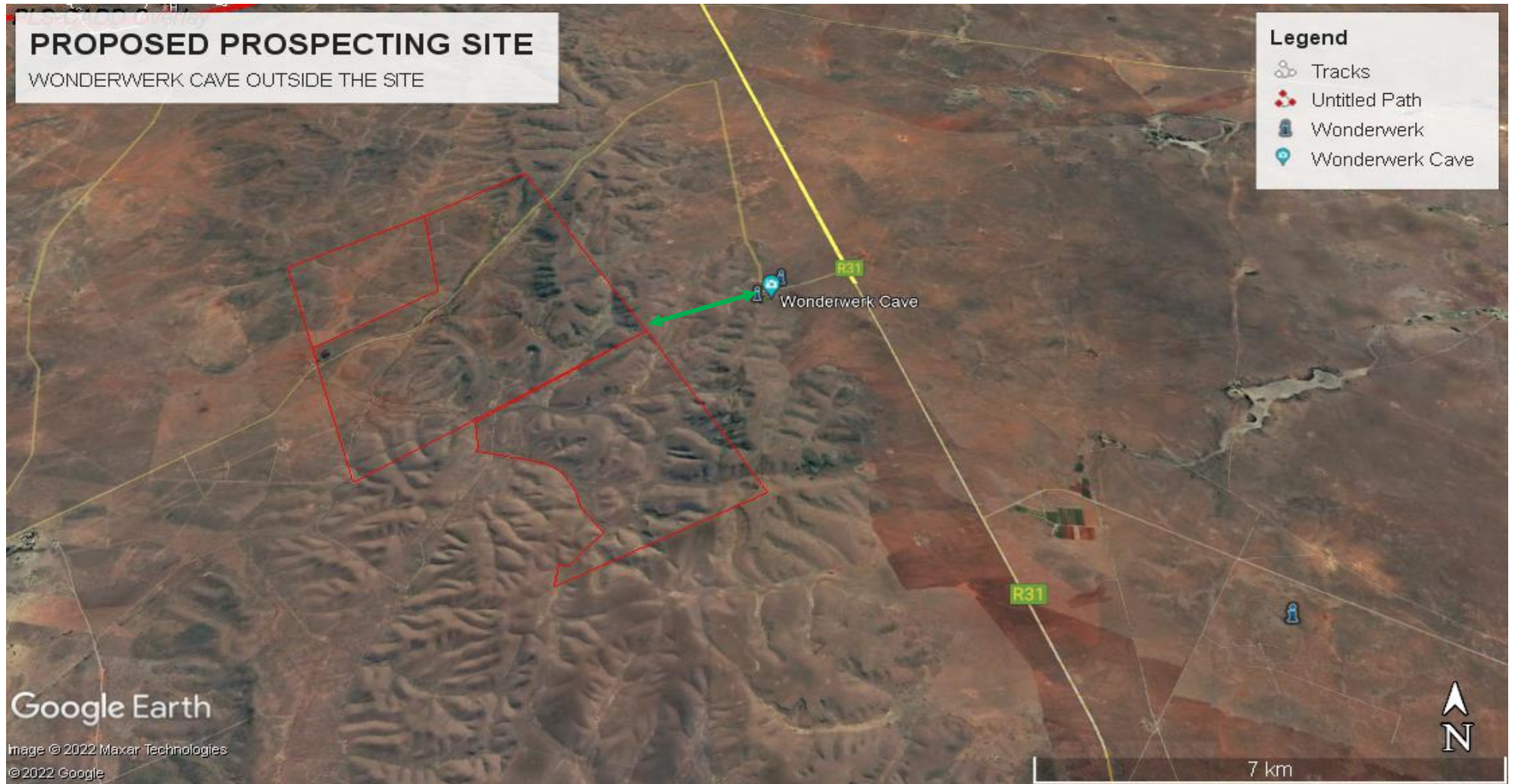


Figure 3: Location of the proposed project site (NDI Geological Services 2022)

### 1.3 Project Background

Raycom Resources intends to prospect for Iron Ore, Manganese and Diamond on the Farms Bretby 687 and Hurley 688, located in the Kuruman Magisterial District, Northern Cape Province. Prospecting activities will be undertaken over a period of two (2) years and are designed in phases, each phase is conditional on the success of the previous phase. Both invasive and non-invasive methods will be implemented. Invasive are those activities which have footprint or cause harm (if not mitigated or managed properly) or those that have a physical impact on the environment, while non-invasive do not cause any harm or effects on the environment.

## 2 LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study. The proposed Prospecting Right Application is submitted in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 EIA Regulations for activities that trigger the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (As amended). Therefore, this is in fulfilment of the assessment of the impact to heritage resources as required by section 24(4)(b)(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). An AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process. This study was conducted in terms of Section 38(8) as part of environmental authorisation. The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

Thus, any person undertaking any development in the above categories, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 m<sup>2</sup>, then an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may **alter damage, destroy and relocate any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority**. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position

or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed prospecting.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant (Raycom Resources), SAHRA/ PHRA and interested and affected parties about existing heritage resources that may be affected by the quarry, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

Table 1: Evaluation of the proposed development as guided by the criteria in NHRA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38(8)	The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent	yes
NHRA Section 34	Impacts on buildings and structures older than 60 years	Subject to identification during Phase 1
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes



### 3 METHODOLOGY

This document aims at providing an informed heritage-related opinion about the proposed Prospecting Right Application in Northern Cape Province. This is usually achieved through a combination of a review of any existing literature and a site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the prospecting footprint. Initially a drive-through was undertaken around the proposed Prospecting Right site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed Prospecting Right Application in order to make recommendations to the competent authority. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed Prospecting Right Application.

#### 3.1 The Fieldwork survey

The fieldwork survey was undertaken on the 26<sup>th</sup> and 30<sup>th</sup> of September 2022. The focus of the survey involved a pedestrian survey which was conducted within the Prospecting Right site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence of building rubble, existing buildings and ecological indicators such as invader weeds. The fieldwork also sought to establish whether or not the proposed prospecting will impact on the Declared Wonderwerk site. The author engaged with the resident archaeologist on a different project to understand the site and its environs, the vital information was then used to assess the potential impacts of the proposed prospecting on the cave.

The literature survey suggests that prior to the 20<sup>th</sup> century modern residential and ongoing quarrying; the general area would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by mining, residential settlements and infrastructure developments (see Figure 1).

### 3.2 Visibility and Constraints

Some sections of the Prospecting right site are inaccessible due to dense vegetation cover. It is conceded that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

### 3.3 Consultations

The Basic Assessment (BA) Public Participation process is conducted by the EAP. The study team consulted the Wonderwek Cave Museum and the archaeologist in charge in order to understand the site and its environs as well as understanding the tourism around the site. The visit confirmed that tourist visits occur beyond the cave site and that visits to the site must be arranged with the archaeologist in charge. The cave is located on the northern side of the mountains while the proposed prospecting site is located on the south western side of the mountain, which in essence the proposed prospecting activities will not interfere with the visual quality of the site since it is not on the viewshed of the site. The BA Public Participation Process will also invite and address comments from the public and any registered heritage bodies on any matter related to the proposed Prospecting Right Application including heritage concerns that may arise relating to the mining activities. The heritage issues and concerns raised by the public will also be included in the Prospecting Right Application to be submitted to DMR.

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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



Plate 1: showing the proposed prospecting site



Plate 2: showing proposed prospecting site

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 3: showing proposed prospecting site



Plate 4: showing access road within the proposed prospecting site

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 5: showing proposed prospecting site.



Plate 6: showing proposed prospecting site.

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 7: showing access road across the proposed prospecting site.



Plate 8: showing the proposed prospecting site.

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 9: showing abandoned asbestos mine within the proposed prospecting site.



Plate 10: showing abandoned asbestos mine within the proposed prospecting site.

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 11: showing abandoned mine dumps within the proposed prospecting site



Plate 12: showing disused mine within the proposed prospecting site



Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Plate 13: showing abandoned mine dumps within the proposed prospecting site



Plate 14: showing access road cutting across proposed prospecting site

## 4 ARCHAEOLOGICAL CONTEXT

The Northern Cape Province is rich in archaeological heritage, mostly dominated by Stone Age occurrences. Numerous sites, bearing Earlier, Middle and Later Stone Age habitation occur across the province, mostly in open air locales or in sediments alongside rivers or pans. In addition, a wealth of Later Stone Age rock art sites, most of which are in the form of rock engravings are found in the region. These LSA sites occur on hilltops, slopes, rock outcrops and occasionally in riverbeds. Sites dating to the Iron Age occur in the northeastern part of the province, but environmental factors delegated that the spread of Iron Age farming westwards from the 17th century was constrained mainly to the area east of the Langeberg Mountains. However, evidence of an Iron Age presence as far as the Upington area in the eighteenth century occurs in this area. The Northern Cape also boast of colonial and mining heritage moving into recent times, the archaeological record reflects the development of a rich colonial influence, characterised by mostly isolated farmsteads, missionary establishments (Kuruman Mission) and mining developments at Kimberley and other smaller towns.

The study area was previously used for livestock and game farming as well as manganese and iron ore mining. Initial mining activities stopped in 1967. The previous manganese and iron ore mining left a trail of open trenches, pits, derelict mine houses and access roads. The previous mining activities also left a scatter of mine dumps and abandoned mining equipment. The previous mining of manganese and iron ore destroyed both cultural and natural heritage resources in the area. Although vegetation has recovered in some sections of the mining area, it was established that the entire landscape was severely altered. It is within this context that the proposed EMP upgrading is seeking authorisation.

### Stone Age Archaeology

In the Northern Cape ESA assemblages, including the Fauresmith, tend to occur as lag deposits on the margins of seasonal rivers, semi-permanent water holes or pans. Such assemblages commonly represent the accumulated remains of numerous reoccupations over possibly many thousands of years. In this region stone tools often occur within calcrete zones underlying the modern surface of unstratified red aeolian sands (Deacon 1988:643-647; Mason 1988:626-30). Previous research in the project area confirmed localised occurrences of low-density Stone Age scatters along the exposed calcrete areas in dry riverbeds (PGS Heritage Unit:2009).

Stone Age archaeology is prevalent in the larger geographical area, especially to the northwest of the study area but generally, elsewhere the Hotazel and Santoy area does not seem to have attracted much of habitation, save for the two Late Stone Age rock shelters that occur north and south of GaMohaam hills and sites along the Gamagara ancient riverbed. Perhaps the lack of large rock-shelters, the domination of exposed environments and the lack of preferred stone raw materials for tools, dissuaded early man (ESA ~ 2.6 million to 250 000 years ago) from

occupying this part of the area. Further to the southwest and southeast of this area, the ESA is very well represented at sites such as Kathu Pan 1, Kathu Townlands, Bestwood 1 (Wilkins and Chazan 2012; Chazan *et al.* 2012; Walker *et al.* 2014) and Wonderwerk Cave (Thackeray *et al.* 1981). All of the above sites produced well-made Acheulean hand axes and cleavers, as well as Fauresmith lithic materials that are transitional between the Acheulean (ESA) and the MSA.

The ESA is generally associated with the earlier Oldowan industry (marked by crude choppers and other unifacial core tools), followed by the still large but better fashioned hand axes and cleavers of the Acheulean techno-complex (Deacon and Deacon 1999). The Fauresmith Industry is characterized by a prepared core technology that produced both blades and points, making it transitional between the ESA and the MSA (~ 250 000 to 40-25 000 years ago) (Porat *et al.* 2010; Wilkins and Chazan 2012; Walter *et al.* 2014). Until recently, the Fauresmith Industry was poorly defined, being mostly identified based on the co-occurrence of Levallois points and hand axes (Beaumont and Vogel 2006: 224), and prepared cores, blades, and 'side-scrapers on flakes' (Beaumont 1990:79).

The MSA is better understood as a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology (Barham and Mitchell 2008). In the area under study, MSA material mostly occur on the same sites with ESA material, suggesting longer sequences of occupation that have allowed researchers to probe into the behavioural changes that influenced these technological developments (Porat *et al.* 2010; Walker *et al.* 2014). Thus, characteristic MSA have been reported at sites such as Kathu Pan 1 (Wilkins and Chazan 2012), Wonderwerk Cave (Beaumont and Vogel 2006), but they also have been reported in isolated clusters (van Vollenhoven and Pelsler 2012). At Wonderwerk Cave, the MSA component was associated with pieces of haematite and several incised stone slabs, most with curved parallel lines that add to the behavioural shifts that went beyond stone tools and ushered in the appreciation of art (Beaumont and Vogel 2006).

More technological and behavioural changes than those witnessed in the MSA, occurred during the LSA (~ 40-25 000, to recently, 100 years ago), which is also associated with *Homo Sapiens* (Barham and Mitchell 2008). For the first time there is evidence of people's activities derived from material other than stone tools (ostrich eggshell beads, ground bone arrowheads, small, bored stones and wood fragments) (Deacon and Deacon 1999). The LSA people are also credited with the production of rock art (engravings and paintings), which is an expression of their complex social and spiritual beliefs (Parkington *et al.* 2008). In the area north of the study area, the two LSA rock shelters to the south and the north of GaMohaani Hill are the only known archaeological remains that are closer to the study area (van der Walt 2013). Not much is known about these rock shelters, save for the fact that they have LSA material that include rock paintings (Morris 2010; van der Walt 2013: 18).

In terms of characterization, the lithic succession at Wonderwerk Cave serves as a benchmark for the Stone Age sequence of the Northern Cape (Beaumont and Vogel 2006; Kusel *et al.* 2009). The sequence comprises an uppermost LSA sequence that contains Ceramic LSA, Wilton and Oakhurst industries. Some researchers have named the earlier LSA industry of the region as the Oakhurst industry (some have labelled this local variant the Kuruman), characterized by rare, retouched artefacts, most of which are large scrapers that are oblong with retouch on the side. However, it is not necessary to belabour the descriptions of these industries, especially because no LSA remains were recovered on the proposed development footprint. All the same, variants of the LSA industries were located at other sites such as Kathu Pan 1 (Porat *et al.* 2013) have been reported. At this site, ostrich eggshell fragments, beads and lithic artifacts attributed to Wilton and Albany industries were found.

The most notable site near the study area is the Kathu Pan site. Kathu Pan archaeological site is located about 5km west of the town of Kathu, along the R380 road to Debeng and Hotazel. The site is located on the boundaries of the farms Marsh 467, Sacha 468, Kathu 465 and Sims 462 come together here. According to Beaumont (1990), the pan covers about 30ha. There is an ancient drainage channel made by the floodwater overflow. Test boreholes reveal a 40m combination of calcrete, sand, clays and gravel layers, below the unstable peaty top sediments.

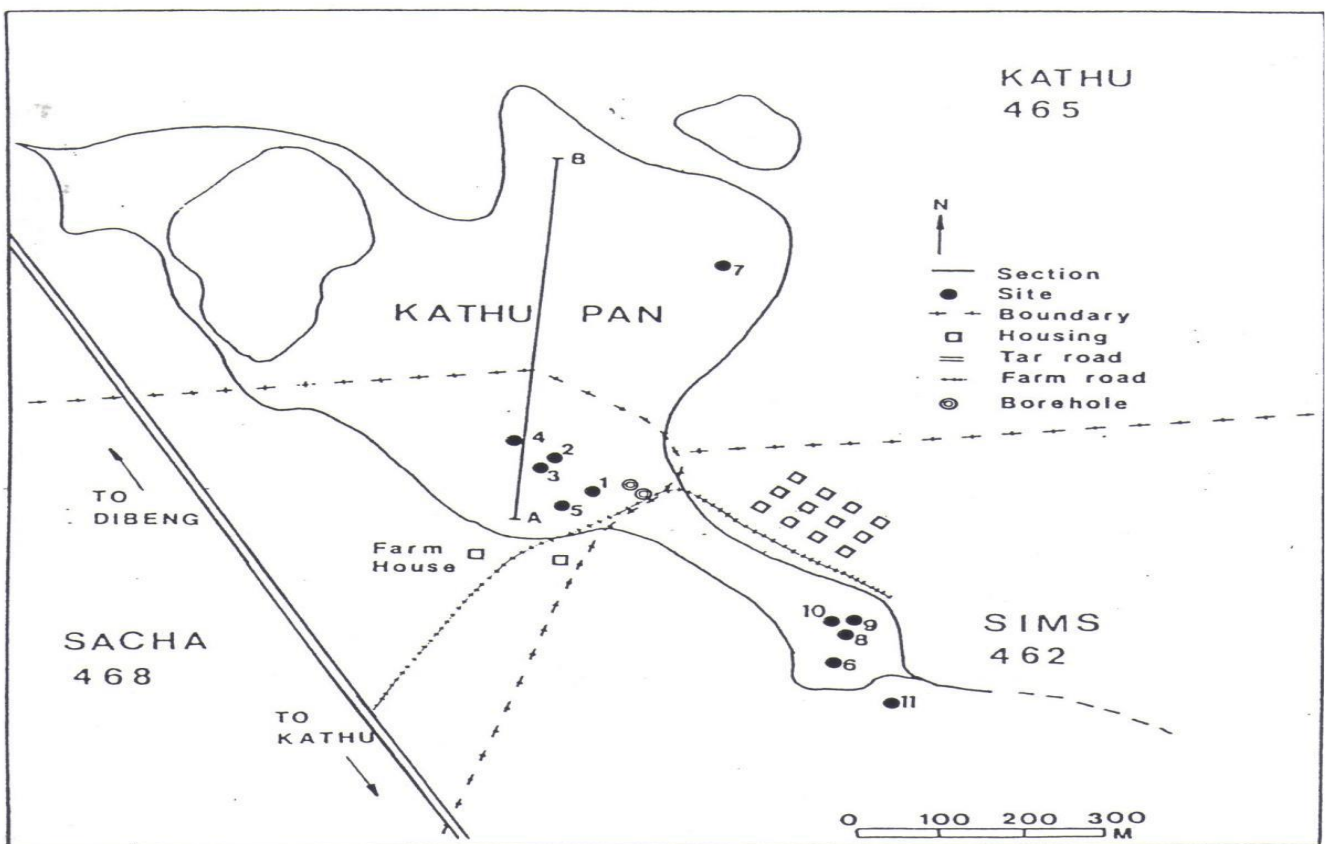


Figure 4: The location of the sites as indicated by Beaumont (1990, 2006).

The first archaeologist to conduct work on the Kathu Pan sites was A.J B. Humphreys on 13 August 1975. Subsequently, P.B. Beaumont conducted extensive studies in the vicinity. During this year several researchers visited the site. Excavations by Peter Beaumont and others produced amongst other finds, portions of clay vessels, ostrich eggshell fragments, Middle Stone Age artefacts, prepared cores, long lithic blades, retouched points and material classified as Fauresmith artefacts. Further finds include coarse Acheulean hand axes and a variety of scrapers. The flakes represent the banded ironstone material found in the area. Grass pollen, indicating prehistoric vegetation, had been recovered. The investigations at Kathu Pan also produced the remains of large mammals, such as elephant, zebra, rhino, hippo, buffalo, and giraffe, together with a variety of antelope and buck (Beaumont 1990).

Several developments such as the Khai-Appel Recreation Resort, the Sishen Airport, the Kumba Village and the Mitton Transport Yard surround the Kathu Pan archaeological site. From earlier archaeological investigations at Kathu, researchers are aware that stone hand axes and pointed flakes of exceptional technological skills dating from the later phase of the Early Stone Age occur in the red sand deposits of the area. The distribution of these artefacts could be fairly general and widespread in the surroundings of Kathu (Beaumont 1990, 2007; Dreyer 2006, 2008, 2010). While exciting finds were made in the red sand deposits with significant stands of *Erioloba* trees around Kathu, it appears that the geology has changed rapidly in places where the deep red sand deposits transform into hills, which produce rich iron ore accumulations (Dreyer 2010).

The Kathu Pan site has been described by Klein (1984) as the best paleoenvironmental sequence from the Kalahari Basin area. It is a broad surface of organic marshland that is located in the centre of four farms (Marsh 467, Sacha 468, Kathu 465 and Sims 462), 15km north of Sishen. The scientific value of the Kathu Pan area cannot be underestimated, and the finds also made a significant impact on the popular understanding of the Early Stone Age (Walker, Chazan & Morris 2013). The declaration of Kathu Archaeological Complex as a National Heritage Site, consisting of Kathu Pan, Kathu Cemetery Sites, Kathu Town lands and the Bestwood Site, is pending.



Plate 15: Photo 26: Three hand axes recovered from the Kathu Pan sites (Walker et. al. 2013:15)

A buffer zone has not yet been established around the Kathu Pan sites. According to Walker et al (2013) a considerable amount of fieldwork still needs to be undertaken to clarify the extent of the deposit. They noted that while the sink holes have offered windows into the deposits around the pan, and some excavations around the 1980s have offered clues to the deposits outside the sink holes, the overall extent of what the Kathu Pan sites have to offer is unknown. The Kathu Pan is an exceptionally significant landscape, one of the reasons being that the archaeological deposits contain both ESA artefacts and associated fauna in near primary context (Walker et al 2013). This is unusual as only seven southern African sites contain ESA artefacts and bones in primary context (Cave of Hearths, Wonderwerk, Pomongwe, and the open-air sites of Elandsfontain, Mwanganda, Namib IV and Kathu Pan) (Volman, 1984). The second reason for the high significance of Kathu Pan is that it also includes stratified deposits from the MSA. Walker et al point out that most MSA sites are along the coast and in caves or shelters, whereas there are MSA deposits in an open-air setting in the interior at Kathu.

In conclusion, the Kathu Pan sites are of considerable significance due to the unique geology and formation of the dolines, which could be considered as windows into the past. Kathu Pan Site 1 contains a near perfect stratigraphy

of the ESA, MSA and LSA that provides the best paleo-environmental sequence from this area as well as a useful guide to archaeological events.

### Iron Age Archaeology

Agriculturalist communities entered southern Africa from West and East Africa around AD 200 and brought with them settled agriculture, metal working, animal husbandry, pottery making and social stratification (Huffman 2007). The view that all of these activities were introduced to southern Africa by these agriculturalists communities is still contested. The movement and spread of these EIA (~ AD200-1000) people within southern Africa seem to have been restricted to the summer rainfall (because of sorghum and millet farming) and they did not occupy much of the central interior Highveld area in South Africa. This perhaps explains the paucity of EIA sites in the study area. Ecologically, EIA preferred to settle on the alluvial soils near rivers for agricultural purposes and access to water. It was not until the mid-second millennium AD that serious Iron Age occupation began in the larger geographical area (excluding the study area) of this part of the Northern Cape.

The study area falls within the fringes of the distribution of LIA (~ AD1100-1840) people who made Olifantspoort facies (ancestral Sotho-Tswana speakers) dated between AD1500 and AD1700 (Huffman 2007: 191). Olifantspoort facies represents the second phase of the Moloko sequence and settlements with people that made this type of ceramics are distributed in the area to the northeast of the study area, between the Vaal River and Pretoria. The people, just like the markers of Thabeng facies (third phase of the Moloko sequence AD1700-1840), settled in aggregated clusters where space was also demarcated by extensive stone walling. The extensive walled settlements around Kuruman are historically associated with the Tswana people such as the Rolong, Tlharo and Thlaping (De Jong 2010; Pelsler 2012; Fourie 2013). Typologically, this type of walling is called Type Z, which is prevalent in the Free State and mark the most southerly expansion of Sotho-Tswana speakers, up to the edge of a viable farming environment (Nkhasi 2008). Type Z settlement units have large compact central primary enclosures, "usually from three to eight in number and often so close as to be touching' but they also have smaller primary enclosures which may be linked by secondary walling (Maggs, 1976: 40).

The nature of the interaction between the emigrant Tswana groups and Khoesan people who were already in this area is complex but there are indications of acculturation (Breutz 1981) and intensive trading (Goodwin 1956). Some of the activities that formed the locus for trade and interaction between the Tswanas and the Khoesan groups in this area are specularite mining and ivory hunting. For instance, at sites such Blinkklipkop (about 80km to the south of the study area), a Khoesan specularite mine sites dating to as early as AD800, there is evidence of either trade with or occupation of the mine by the Thlaping people around 1801 (Thackeray *et al.* 1983). Specularite was used for non-metallurgical purposes such as pottery decoration and bodily adornment (Hall 1985), and was a prized trade commodity, together with ivory and other items during the second millennium trade boom in this part of

southern Africa. Thus, by the mid-19th century (and probably earlier), the Thlaping people were purchasing glass beads, iron, copper, tin and bronze wares from other northern Sotho-Tswana groups such as the Kwena and Hurutse and exchanging these items with the Khoesan groups to the southwest (Goodwin, 1956: 256).

Of the Tswana groups around the present study area, the Thlaping might be of interest because of their connections with the site of Dithakong near Kuruman (De Jong 2010: 35-36; Pelsler 2012). This site, which at one point was a Thlaping capital, appears to be the only area in which there is direct archaeological evidence for settlement in the form of stone walling (Maggs 1972; Magoma 2013: 28). Socio-political tensions and permutations necessitated the shifting of most Tswana capital of which Dithakong was no exception. For instance, during the Batlhaping capital was first at Nokaneng around the year 1775, before it was moved to Dithakong on the Mashoweng River, and then at Kuruman in 1801. At around 1806 they returned to Dithakong but settled a short distance from the previous site. In 1812 people were contemplating returning to Nokaneng with an intermediate stop at Kuruman, where they re-established themselves in 1817. Thus in 1820 when Kuruman was the capital and comprised 25 wards, Dithakong was of similar size. Thus, the capital had moved three times in twenty years and suffered one major split which removed about half of its population. The reasons for these movements are not clear. This mobility presents a problem in the interpretation of the archaeological evidence, and it helps to explain why many Iron Age sites have shallow accumulation of waste material (Maggs 1972).

Nonetheless, in the 1920s, the capital of the Batlhaping was permanently moved to Kuruman. All the same, none of these LIA sites were identified in the study area.



Plate 16: Photo 16: 'A view in the Town of Litakun' (Dithakong), a southern Tswana town near present-day Kuruman.



An engraved and coloured reproduction of an original drawing made by William Burchell in July 1812 (From Burchell, W.J., 1824, *Travels in the Interior of Southern Africa*. V II, London: Longman, Hurst, Orme, Brown and Green) <http://www.apc.uct.ac.za/news/tuning-obo#sthash.PkrFm3EY.dpuf> (accessed on 30 August 2015).

### Contemporary heritage

Southern Africa was networked with the literate world for several centuries, but the period of written history in the study area corresponds to the arrival of white travellers, hunters, missionaries and adventurers from the Cape in the 1800s. Notable amongst them include PJ Truter's, William Somerville, Robert Moffat, Andrew Smith and John Campbell. The first arrivals into the study area may be PJ Truter's and William Somerville who in 1801 reached Dithakong at Kuruman (Pelser 2012). Some of later travellers into this area kept diaries that today form part of invaluable history about indigenous communities whom they travellers interacted with (see Figure 5 and 6). European explorers such as Dr. Hinrich Lichtenstein (in 1805) and Dr. Andrew Smith (in 1835) reached Kuruman and met Tswana-speaking people (Bergh 1999). It should be noted that most of the early African-colonial interaction in this area centred around the nearly two-century old London Mission Society station at Kuruman, established by James Read in 1817 but popularized by Robert Moffat and his wife, three years later. Since the arrival of the Moffats in 1820, the mission has been known as The Moffat Mission Station (Plate 29).



Plate 17: Photo 17: Shows a drawing of the Old Mission House at Lattakoo which is now known as Kuruman (David J. Deane 2005. Robert Moffat: *The Missionary Hero of Kuruman*. March 16, 2005 [EBook #15379][http://www.gutenberg.org/files/15379/15379-h/15379-h.htm#CHAPTER\\_IV](http://www.gutenberg.org/files/15379/15379-h/15379-h.htm#CHAPTER_IV) accessed 30 August 2015).

Besides the isolated incursions by traders, hunters, and missionaries permanent and mass-movement of white

settlers only took root in the late 1800s with the arrival of Dutch speaking farmers (Voortrekkers) who were protesting and escaping British rule in the Cape Colony (Ross 2002: 39). Yet even this incursion was not permanent as yet because by 1897 most of them white settlers around the Kuruman River had moved away (Fourie 2013). It took the great drought of 1907 and 1908 for many farmers of the then Cape Colony to move into these areas along the edge of the Kalahari Desert in search of better grazing for their cattle (Smit 1966). Nonetheless, significant urban development in this area has been focused around the 'Eye' and the water course springing from it leading to the evolution of the town of Kuruman, from the late nineteenth century (Morris 2010). When in 1885 Britain declared a Protectorate over Bechuanaland and the Kalahari (on 23 March) and then divided the Protectorate was divided into two parts (on 30 September 1885), the area south of the Molopo (including the study area) became the Crown Colony of British Bechuanaland with its capital at Vryburg (Fourie 2013) (Tlou and Campbell 1997). Ten years later this area was included in the Cape Colony accordance to Act 31 of 1895 (Smit 1966) and the Lower Kuruman Native Reserves well as a number of other so-called native reserves were established by virtue of Bechuanaland Proclamation No. 220 of 1895. The study area lies on the fringes of this Lower Kuruman Native Reserve.

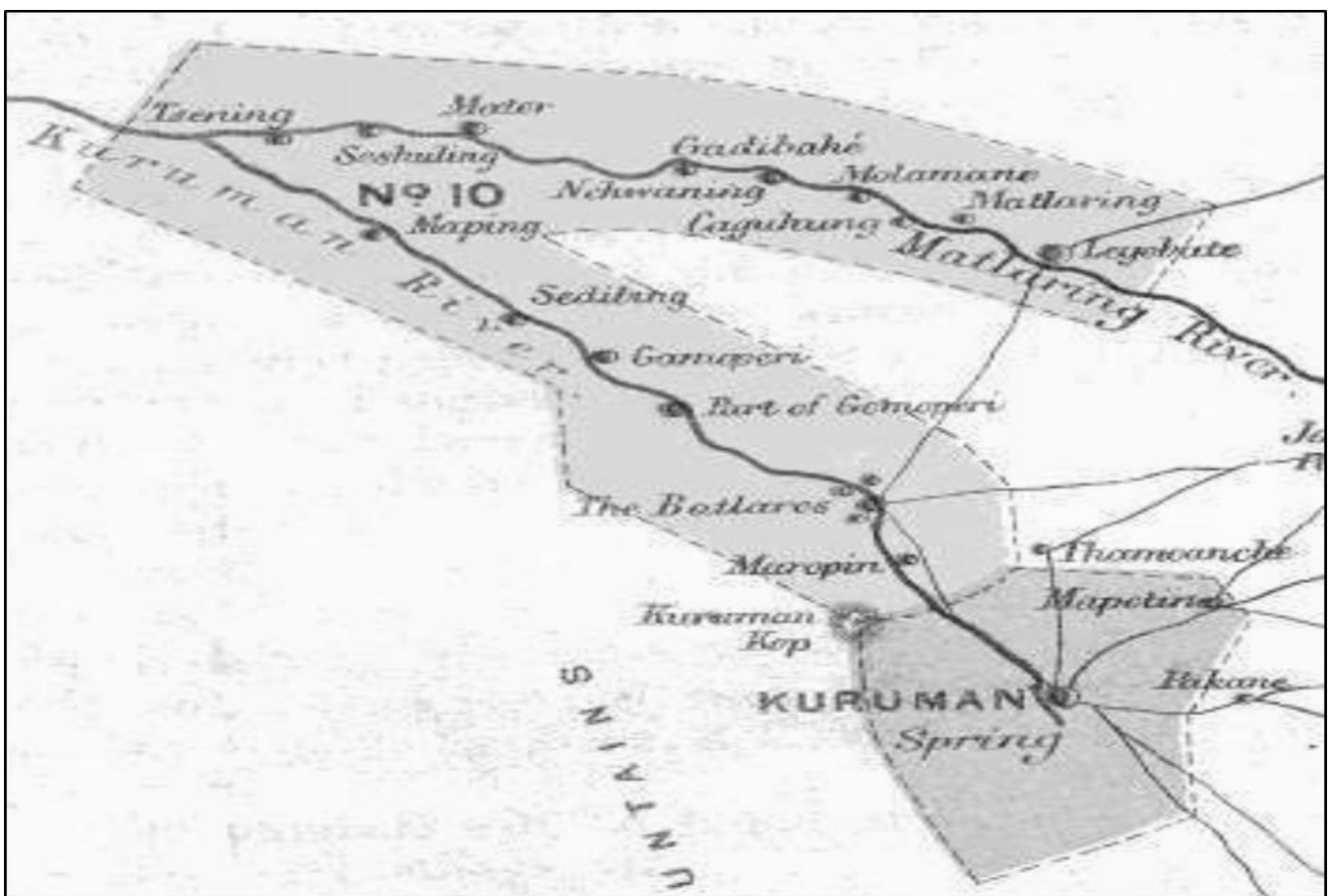


Figure 5: Map showing the original demarcation of the Lower Kuruman Native Reserve (Fourie 2013: 35)

Another impetus for the occupation of the Kuruman area was related to events that were ignited outside the African continent. Thus, when the First World War (1914-1918) broke out, and the South African Union Government joined the coalition forces and attacked German South West Africa (now Namibia). To sustain the Union troops along the way, a number of boreholes were sunk along the banks of the Kuruman River at places such as Eensaam, Kameelrus, Murray, Springputs and Van Zylsrus (Van der Merwe 1949; Smit 1966;). After the war, even more boreholes were sunk by the Department of Lands as opportunistic white farmers established themselves at these localities as borehole watchmen so that they could be allowed free grazing rights on the surrounding land (Smit 1966). All of this history produced heritage landmarks along the Kuruman River, but it is significant to note that none of these resources are located closer to the area of the proposed development. Parallel to the urban development is the history of manganese mining that the surrounding region is well known for today. Manganese is used in the manufacture of carbon steel and has been mined at such places as Hotazel and Black Rock (Fourie 2013). These mines are however, located out of the current mining project footprint and no mining heritage older than 60 years has been located within the proposed mining site.

### **Intangible Heritage**

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage is anticipated on the development footprint because most historical knowledge does not suggest a relationship with the study area per se, even though several other places in the general area such as Old Moffat Mission in Kuruman do have intangible heritage.

### **SAHRIS Database and Impact assessment reports in the proposed project area**

Several archaeological and heritage impact studies were conducted for mining and infrastructure developments in the vicinity of the proposed mining right application site. These studies include studies conducted by Beaumont (2000) and Dreyer (2010) within the current mine site. Therefore, this report must be read together with Beaumont (2000) and Dreyer (2010) reports. As previously indicated the site was previously mined. Dreyer (2010) noted that evidence of previous mining activities occurs in the entire study area. Dreyer (2010) observed trenches, pits, tracks, mine dumps and infrastructure associated with previous manganese and Iron ore mining in the area. In addition, Dreyer (2010) recorded ruined mine workers houses in the project area. The buildings were made up of concrete brick wall and wooden frames, the current study confirmed that most of the buildings are partially destroyed, some walls have collapsed due to years of neglect and exposure to vibration. None of the buildings have roofs. Dreyer also recorded a concrete lined pit associated with the ruined buildings. The structure is still intact although the current and previous studies could not establish its purpose. It could have been used for storing water since it is

closely associated with houses.

Archaeological research and CRM studies in the general project confirmed that Stone Age tools occur in red sands deposits around the Kathu area (Beaumont 1990, 2000, 2007, Dreyer 2006, 2008, 2010). Although the studies confirmed abundance of ESA remains in Kathu area the Archaeological impact studies conducted by Beaumont (2000) and Dreyer (2010) in the project area did not record any archaeological sites. Desktop studies revealed that a small Iron Age specularite working on a hill flanking the Gamagara River, on Demaneng 546 was destroyed by previous mining activities. Beaumont (1990, 2007) for Kathu Cemetery, Dreyer (2006) for a development at Bestwood 459 RD yielded hand axes and pointed flakes. Dreyer (2010) concluded that the current mining site is located within Iron ore bearing hills where ESA remains do not occur.

Small McGregor Museum collections from the farm Lylyveld 545 comprise an Earlier Stone Age sample from along the Gamagara River and Earlier Stone Age plus Iron Age material from around specularite pits on the hills. The sites were destroyed by subsequent Iscor prospecting, as was another small Iron Age specularite working on a hill flanking the Gamagara River, on Demaneng 546. Another small Later Stone Age collection was documented in 1987 on southern Lylyveld 545, from the slopes around a shallow overhang, now mined away, directly south of the N14. Still intact is a low rise with many specularite pits on Mashwening 557, some 6 km to the south-east, where a test trench in 1989 yielded Ceramic Later Stone Age overlying sparse Acheulean, which included a cleaver. These studies also mention pecked engravings on off – white Gamagara Shale located on the farms Sishen 543 and Bruce 544. In addition, another Acheul quarry of similar extent to the Kathu Townlands Site occurs on the crest of Kathu Hill close to the town of Kathu. However, to extensive mining activities in the area, none of the mentioned sites still survive within the current development site.

Kusel *et al* (2009) Orton (2016 & 2017), Kruger (2015) and Hutten & Hutten (2013) have all identified a mix of ESA and MSA archaeological material along the Ga-Magara River in the Hotazel area west of the current project site. The formal ESA tools include Acheulian hand axes or large cutting tools (LCT's). The MSA flakes and blades are characterised by the faceted striking platforms that indicate the use of prepared cores. Kruger (2015) posits that the Ga-Magara River would have been an important source of water in this arid environment. However, the section that cuts across the current mining site has been disturbed and mine residue has been washed into the river. The other studies include powerline and substation projects completed by Kaplan, J. (2009), Van der Walt (2013); Fourie, (2013b), Hutten, L. & Hutten, W. (2013) Magoma (2013), Bandama (2015), Mlilo (2016), Kruger (2015a, 2015b), Pelsler, A. & van Vollenhoven, A.C. 2011, Pelsler (2012), Van Schalkwyk (2010, 2015a, 2015b, 2016), Van Vollenhoven, A.C. (2012) and Webley, L & Halkett (2008). Van Schalkwyk (2010, 2016) examined sites west of Hotazel town and found no cultural resources to be present in either location. Other studies further afield (e.g. Fourie 2013) have found a similar rareness of archaeological material in open, sandy areas. However, along the

margins of the Kuruman River and Ga-Mogara River, stone artefacts have been reported (Hutten & Hutten 2013) and (Kusel *et al* 2009). These artefacts are low density and appear to be largely from the Middle Stone Age (MSA), although some may be Later Stone Age (LSA). Nilssen (2018) concludes that several of the heritage studies around Hotazel have commented on the almost total absence of heritage resources. Surveys have revealed that there are large tracts of land where virtually no archaeological material occurs (Orton 2016, 2017; Van Schalkwyk 2010, 2016). Early Stone Age (ESA) material seems to be largely absent, despite how common it is at Kathu, 50 km to the south, where extensive research has been carried out (e.g. Chazan *et al.* 2012; Porat *et al.* 2010).

## 5 RESULTS OF THE FIELD STUDY

### 5.1 Archaeology

The main focus of the site visit was to delineate the cave from the proposed prospecting site. The study noted that the proposed prospecting site boundary is located approximately 4km from the Cave on the western side of the site. The study confirmed that the area around the cave was subject to systematic archaeological surveys and no other significant archaeological sites were recorded in the vicinity of the cave (Beaumont and Vogel 2006; Kusel *et al.* 2009). The site visit also noted that the cave is located on the northern side of the mountains while the proposed prospecting is located on the western side of the mountain. Given the distance from the boundary of the proposed prospecting site to the cave, it is assumed that the proposed prospecting activities will have little or no impact on the cave be it from a visual, noise and seismic perspective. As a precautionary measure the applicant agreed to further shift the drilling holes further away from the cave to ensure that none of the proposed prospecting activities will interfere with the cave. The study confirmed that prospecting activities have been taking place in the project area and no consequences or impacts on the cave have been reported to date. The section below presents a detailed assessment of the Wonderwerk Cave

Wonderwerk is an archaeological site, formed originally from dolomite rocks of the Kuruman Hills located between Danielskuil and Kuruman in the [Northern Cape Province](#), South Africa. Wonderwerk is situated approximately 43 kilometres from Danielskuil and  $\pm 31$ km from the little town of Kuruman. Within the site is a huge cave extending to approximately 139 metres into the earth. The site house rock art on the walls of the cave near its entrance and engraved stones found in the deposits. Legends of old explorers' wagons and full are at the entrance of the cave. The site was opened as a site museum and declared a National Monument in 1993. Following an assessment for grading through *Government Gazette* on 12<sup>th</sup> of March 2010 the site was graded Grade I site and declared a National Heritage Site. The exhibition centre (museum) covers the rich history of the cave, the plants and animals within the area as well as the early travellers. Details of the property are provided in the table below.

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Table 2: Wonderwerk Museum property details

<b>Name of Property</b>	Wonderwerk
<b>Farm Name(s)</b>	Block AA689 Kuruman Division
<b>Portions</b>	Portion of Portion 23 (Wonderwerk)
<b>Postal Address:</b>	P.O. Box 863, Kuruman, 8460, Northern Cape
<b>Magisterial District</b>	John Taolo Gaetsewe District
<b>Local Municipality</b>	Ga-Segonyana Local Municipality
<b>Central Coordinates of the Development</b>	27°50'45"S 23°33'19"E
<b>SG Diagram</b>	6771/92
<b>Extent of the property</b>	17, 5885ha
<b>Deeds Transfer</b>	2124/1929
<b>Establishment date</b>	1990
<b>Date of declared as a Provincial Heritage Site</b>	1993
<b>Site Status</b>	Grading: Grade I (National Heritage Site) (NHRA) <b>Government Gazette:</b> No. 33006, March 12, 2010 National monument (National monuments Act of 1969)

Wonderwerk Cave is located in the Northern Cape Province of South Africa between the towns of Danielskuil and Kuruman. The site is located at GPS Coordinates Wonderwerk Cave 27. 50. 45S/23.33.19E. It is one of the most spectacular cave sites in Southern Africa, yielding an impressive and well-preserved occupational sequence from the ESA through to the Later Stone Age (LSA). The cave is over 140 metres long extending into the eastern flank of the dolomite beds of the Kuruman Hills. Wonderwerk Cave is a unique site in that it offers a long stratigraphic sequence spanning the Early Stone Age (ESA) with excellent preservation of organic remains.

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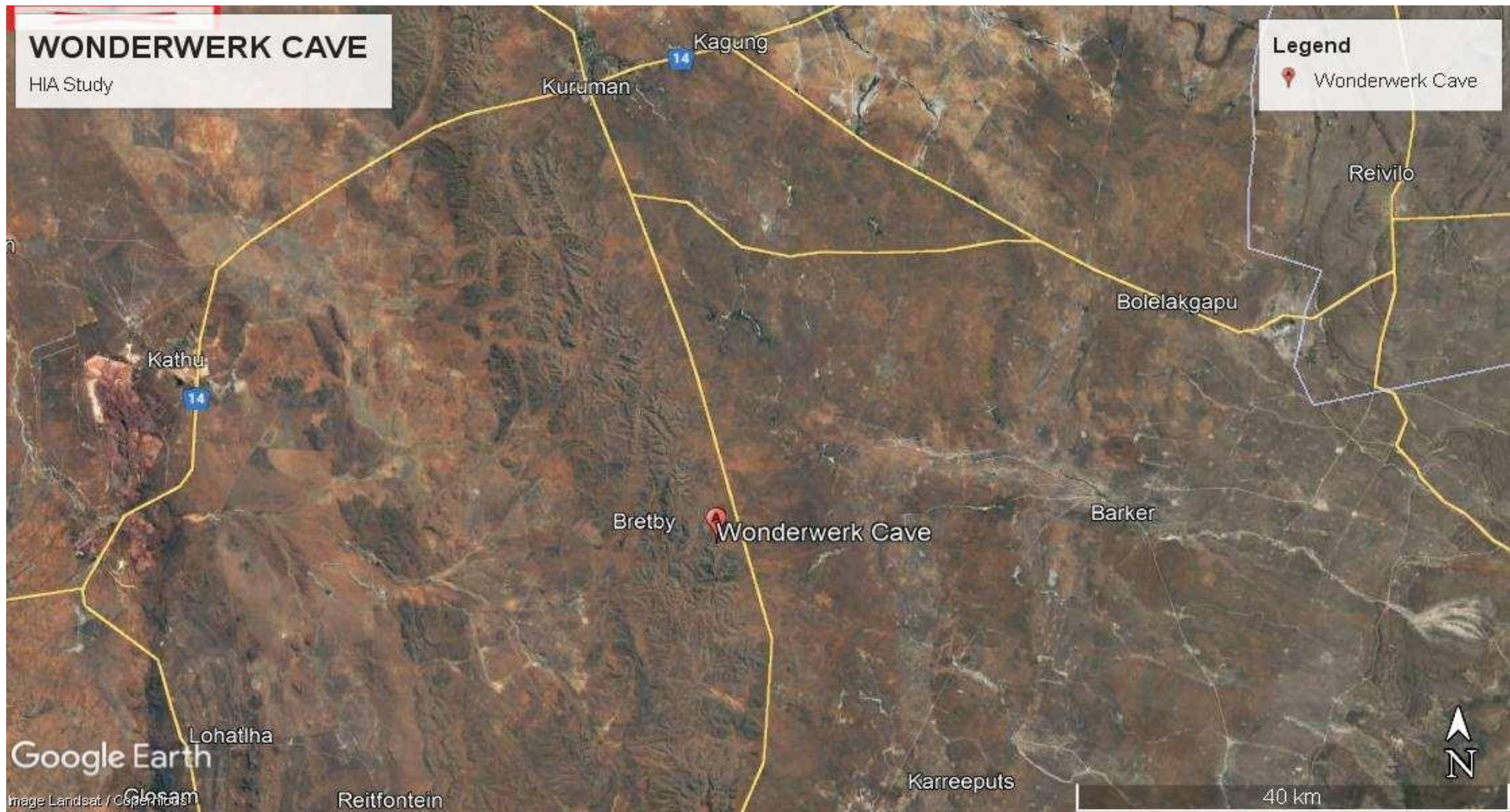


Figure 6: Locality map of the site (Author 2022)

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Figure 7: Locality map of Wonderwerk (Author 2022)



Excavations by B.D. Malan; Francis and Anne Thackeray; and Peter Beaumont exposed an extensive record of human occupation through much of the cave. The Wonderwerk Cave is believed to be the oldest known cave occupation (earliest occupation ca. 2 million years ago) and has documented the earliest known traces of in situ fire in an archaeological site in Stratum 10, Excavation 1 (ca. 1 million years ago). These results reinforce the significance of Wonderwerk Cave as recognized by the designation of the site as a National Heritage Site (Government Gazette, March 12, 2010) and by the inclusion of Wonderwerk Cave in the list of South African candidate sites for World Heritage status (1998).

Excavation 1 at Wonderwerk Cave preserves a unique sequence spanning the entire Earlier Stone Age. The site of Wonderwerk Cave provides a long sequence spanning almost 2 million years of prehistory, including all Southern African Holocene Later Stone Age techno-complexes. Wonderwerk Cave is located at the edges of the Kalahari, an area which is known to have been sensitive to past climate shifts such as increasing aridity, or the expansion of the winter rainfall belt. Wonderwerk Cave, located in the Kuruman Hills (Northern Cape Province), offers a well-dated long archaeological sequence spanning some 2 million years. This sequence is also characterized by excellent preservation of macro and micro-fauna, macro-botanical remains, pollen and phytoliths as well as speleothems, all offering a wealth of environmental and climatic proxy data. An additional and extremely important source of data for palaeoclimate and environmental reconstruction are isotopic signatures that may be obtained from the faunal remains. These features make Wonderwerk Cave a key site for forming views on environmental change in the interior of South Africa.

Wonderwerk Cave is unique in Archaeology and Palaeontology. In addition, it is a significant tourist attraction and educational site and thus there is need to develop tourist facilities that will enable tourist to enjoy the site. The site is significant to the local and regional economy of the Northern Cape Province. There is need to develop facilities without impacting on the site's fabric. There is an existing pedestrian bridge and lighting in the cave. However, the proposed project intends to install additional lighting in the cave. As such, this must be done without disturbing the fabric of the cave site as well as disturbing the stratigraphic markings by researchers working at the cave site. It is important to note that any work at the site must be monitored by a professional archaeologist. In this instance monitoring and supervision must be done by Dr David Morris (McGregor Museum 053 839 2700) who is the head of archaeology at the Museum and has also done extensive work in the Northern Cave. The study consulted the head of Archaeology Section at MacGregor Museum who suggested that we need to discuss the proposed project before submitting any application for approval. He indicated that there is adequate lighting at the cave except that some lights need repair or simply changing bulbs. Too much light at the cave may damage the significant rock art.

## **Statement of Significance**

The site is a Grade 1 site which is national significance. Any work within the cave must be approved by Andrew Morris before a submission is made to SAHRA for approval. Research at Wonderwerk Cave, in the eastern Kuruman Hills, has generated important insights into nearly two million years of human history. It was nominated as part of a serial nomination, with Border Cave and Klassies River Mouth, for the tentative list for World Heritage Sites, and this has since been changed to an individual nomination for the site. In terms of the criteria set out in Section 3 (3) of the National Heritage Resources Act (Act No. 25 of 1999) Wonderwerk Cave is a National Heritage Site. Research, since the 1940s, into the archaeological deposits within Wonderwerk Cave has testified to the site's importance in the pattern of South Africa's history. Some 6m deep, the deposits are estimated to span nearly 2 million years. This includes a long Stone Age sequence from Oldowan and Acheulean to Later Stone Age times, ending with evidence of occupation by the first white settlers, who lived in the cave in the early twentieth century.

Wonderwerk Cave exhibits rare and endangered aspects of South Africa's cultural heritage. Distinctive rock paintings on the walls date from the last thousand years. In the Later Stone Age levels (c. 11000BP to <1000BP) some of the older dated rock engravings known from the African continent were found. A fragment of engraved haematite from still older Middle Stone Age levels may be c. 70 000 years old. In

Middle and Earlier Stone Age levels, besides a lithic sequence through Acheulean to Howiesons Poort, there is early evidence for controlled use of fire (ash, burnt stone and calcined bone), grass bedding and pigment usage. Together these are suggestive of aspects of behavioural modernity in the emergence of modern humans. Environmental evidence bearing on human development in the region is provided in the exceptionally well-preserved animal bones (including species which became extinct in early Holocene times, with human agency as a probable contributory factor) and other palaeoenvironmental indicators.

Research at Wonderwerk has already proven the potential of the site to yield information on human, natural and cultural heritage over the past nearly 2 million years. Several different dating techniques and other forms of analysis have been and are being applied.

Greater chronological control will provide a basis for a fuller interpretation. The multiple-stratum sequence spanning Oldowan and Acheulean to Later Stone Age times provides a unique record of palaeoenvironmental and human history, including some of the phases during which anatomically modern human forms and behavioural characteristics were emerging.

Wonderwerk is unique in the Northern Cape in demonstrating the characteristics of cave sites of this period. It is one of the very few known localities in South Africa with a multiple-stratum archaeological sequence with good organic preservation spanning the Middle Pleistocene. It is one of the very few cave sites containing Acheulean

material, let alone Oldowan, while part of its cultural succession also complements the archaeological record from key sites reflecting the emergence of modern humans, such as Klasies River Mouth and Border Cave. In sum, it provides a unique record of palaeoenvironmental and human history in important phases of human evolution, and sheds light on the development of rock art on the African continent.

The site has yielded evidence of the development of rock art from Middle Stone Age times to within the last 1000 years. The significance of this, which has continental and even world-wide heritage value and implications in terms of the development of human behaviour, has been alluded to above.

As indicated above, the site has yielded exceptional evidence for early development of art forms, while the lithic industries have been pivotal in defining cultural stratigraphies for the interior, where few other stratified cave sites exist, thus demonstrating creative and technical achievement. It is indeed one of the few cave sites in the subcontinent with Acheulean levels, also yielding artefacts in a kind of raw material and adequate state of preservation for microwear analysis of, for example, handaxes.

While in some senses the site can be said to have universal cultural relevance, the upper levels and the finger painting on its walls would have strong spiritual associations for the Khoe-San people of the region whose ancestry can be traced in Later Stone Age times.

Despite the significance of the site herein presented, the study observed that the proposed prospecting will not impact on the cave site and its environs. The proposed prospecting is thus supported on condition that the applicant maintains the  $\pm 4$ km buffer zone from the cave. No further impacts are anticipated at the prospecting phase; however, further assessment may be required for mining right application should the proposed prospecting yield intended results.

The proposed prospecting site was scanned for archaeological remains that might have been missed by previous surveys, however no archaeological remains were identified during the survey (see Figure 1 & Plates 1-8). Based on the field study results and field observations, the receiving environment for the prospecting site is medium to high potential to yield previously unidentified archaeological sites during prospecting. Literature review also revealed that no Stone Age sites are not shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

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Plate 18: showing National Monuments Council burge at Wonderwerk Cave



Plate 19: showing rock artt panels at Wonderwerk Cave.

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Plate 20: showing access to th ecave



Plate 21: showing the Wonderwerk cave from the north

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Plate 22: showing spectacular rockart at the site



Plate 23: showing Wonderwerk Cave site



Plate 24: showing evidence of drilling at the cave



Plate 25: showing evidence of previous drilling at the cave

## 5.2 Burial grounds and Graves

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and concealed by dense vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities and construction. In some instances, packed stones or bricks may indicate the presence of informal burials. If any human bones are found during the course of prospecting work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or Department of Health for graves younger than 60 years.

The field survey did not identify any graves within the proposed prospecting site. Due to security restrictions farmsteads were not assessed for potential graves and historical structures. It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Wherever they exist or not, they may not be tampered with or interfered with without a permit from SAHRA. The possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. The possibility of encountering previously unidentified burial sites is high within the site because of some of the burial sites are located and within homesteads and the site has a lot of abandoned historical settlements, should such sites be identified during prospecting, they are still protected by applicable legislations, and they should be protected. The identified sites are listed in Table 2 below.



### 5.3 Public Monuments and Memorials

The study did not record any public memorials and monuments within the proposed prospecting site that require protection. As such the proposed Prospecting Right Application may be approved without any further investigation and mitigation in terms of Section 27 & 9 of the NHRA.

### 5.4 Buildings and Structures

The study did not record any historical buildings and structures during the survey. Due to security concerns by landowners the study team did not access farmsteads and other farm installations.

### 5.5 Impact Statement

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and prospecting, indirect impacts may occur during movement of heavy prospecting vehicles. Any additional excavation for foundations of buildings and structures as well as fence line posts will result in the relocation or destruction of all existing surface heritage material (if any are present).

Similarly, the clearing of access roads will impact material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to prospecting. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed development site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of prospecting by means of mitigation measures (see appended Chance Find Procedure). There is still a possibility of finding archaeological remains buried beneath the ground. It is the considered opinion of the author that the chances of recovering significant archaeological materials is present within the prospecting site.

Table 3: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	Buildings and structures exist within the proposed Prospecting Right Application site
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	None recorded
Graves and burial grounds	Several burial sites occur within the site
Movable objects	None
Overall comment	The applicant must ensure that they maintain the $\pm 4$ km buffer zone from the Wonderwerk Cave.

## 5.6 Assessment of development impacts

An impact can be defined as any change in the physical-chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

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

Table 4: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		

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Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
<b>Extent (E)</b>		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
<b>Duration (D)</b>		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
<b>Probability of occurrence (P)</b>		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

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

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

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

Table 5: Criteria for Rating of Classified Impacts

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

Table 6: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Prospecting Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Impact before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Impact after mitigation
Clearing and mining	Destruction of archaeological remains	Cultural heritage	-	2	2	1	2	10	<ul style="list-style-type: none"> <li>Use chance find procedure to cater for accidental finds</li> </ul>	2	1	1	2	8
	Disturbance of graves	Cultural heritage	-	2	1	1	3	8	<ul style="list-style-type: none"> <li>Recorded family cemetery must be avoided</li> <li>Use appended Chance find procedure to cater for accidental finds.</li> </ul>	2	1	1	1	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	2	1	1	3	8	<ul style="list-style-type: none"> <li>Recorded farm buildings and mine infrastructure must be avoided during prospecting</li> <li>Construction management and workers must be inducted about the value of historical buildings and structures.</li> </ul>	2	1	1	1	4
Haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> <li>Mitigation is not required because there are no public monuments within the project site</li> </ul>	2	1	1	1	4

## 5.7 Cumulative Impacts

Cumulative impacts as are defined as Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the prospecting site is considered the total impact associated with the proposed prospecting site when combined with other past, present, and reasonably foreseeable future developments projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this site was undertaken during the preparation of this report. The total impact arising from the proposed prospecting (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated.

The impacts of the proposed prospecting were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation, this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments, including residential, road networks, commercial infrastructure where baselines have already been affected, the proposed prospecting will add to the existing impacts in the project area. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during prospecting phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed prospecting site and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves, archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. Furthermore, many heritage resources in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when grass cover is dense. As such, prospecting workers may not see these resources, which results in increased risk of resource damage and/or loss. Earth moving and extraction of gravel have the potential to interact with archaeology, architectural and cultural heritage.

No specific paleontological resources were found in the project area during the time of this study (Fourie 2022); however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed development has the potential to impact on possible paleontological resources in the area. Sites of archaeological, paleontological, or architectural significance were not specifically identified, and cumulative

effects are not applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of clearances, access roads and impacts to buried heritage resources. Allowing the impact of the proposed prospecting to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially prospecting vehicles during at the site. Movement of heavy mining machinery must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process.

## 5.8 Mitigation

Mitigation for the prospecting right site is required to protect the recorded burial site and historical mine ruins and a copy of the chance finds procedure must be kept at the site office to ensure appropriate management of any accidental finds during prospecting. Prospecting in the portion where graves and ruined mine buildings and structures were found must be done under the watch of a professional archaeologist to ensure that prospecting activities do not infringe on the recorded heritage resources.

## 6 ASSESSING SIGNIFICANCE

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

### 6.1 Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture, and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

### 6.2 Historic Value

Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have historic value as the site of an important event. For any given place, the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

### 6.3 Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

### 6.4 Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national, or other cultural sentiment to a majority or minority group. Social value also extends to natural



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

## 7 DISCUSSION

The main purpose of the site visit was to delineate the Wonderwerk cave from the proposed prospecting site. The study noted that the proposed prospecting site boundary is located approximately 4km from the Cave on the western side of the site while the site in question is located on the northern foothill of the mountains (see Figure 1). Given that the mountain is acting as a barrier between the proposed prospecting site and the cave, the visual and noise impact of the proposed prospecting is not likely to interfere with the cave. In addition, prospecting has a short-term impact given that it is done within a short period of time and also at intervals spanning more than a kilometre from each prospecting hole.

The study confirmed that the area around the cave was subject to systematic archaeological surveys and no other significant archaeological sites were recorded in the vicinity of the cave. The site visit also noted that the cave is located on the northern side of the mountains while the proposed prospecting is located on the western side of the mountain. Given the distance from the boundary of the proposed prospecting site to the cave, it is assumed that the proposed prospecting activities will have little or no impact on the cave be it from a visual, noise and seismic perspective. As a precautionary measure the applicant agreed to further shift the drilling holes further away from the cave to ensure that none of the proposed prospecting activities will interfere with the cave. The study confirmed that prospecting activities have been taking place in the project area and no consequences or impacts on the cave have been reported to date.

Several Phase 1 Heritage studies for various mining and infrastructure developments were conducted since 2000. The studies noted that significant Stone Age sites occur in and around Kathu and on adjacent farms. However, it is important to note that the current mining site was previously surveyed by Beaumont (2000) and Dreyer (2010) who confirmed the scarcity of archaeological remains within the study site. As such the current study should be read in conjunction with Dreyer (2010) and Beaumont (2000) conducted in the same project site. The archaeology of the Northern Cape is rich and varied, covering long spans of human history (Morris 2006). In the Northern Cape ESA assemblages, including the Fauresmith, tend to occur on the margins of seasonal rivers, semi-permanent water holes or pans (Beaumont 2000, Dreyer 2010, Pelsler

2010). The significance of ruined mine workers houses recorded in the study area are of lesser importance because they were vandalised over the past years of neglect:

1. Some sections of the of the proposed prospecting site are located within a heavily degraded old mining area and have reduced sensitivity for the presence of high significance archaeological remains due to previous mining activities and current agriculture activities.
2. Limited ground surface visibility on sections of the proposed prospecting site that were not cleared at the time of the study may have impeded the detection of other physical cultural heritage site remains or archaeological signatures within the proposed prospecting site. This factor is exacerbated by the fact that the study was limited to general survey without necessarily conducting any detailed inspection of specific locations that will be affected by the proposed prospecting.

The absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist in the proposed prospecting right application site (see appended Chance Find Procedure). Significance of the sites of Interest (prospecting site) is not limited to presence or absence of physical archaeological sites.

## 8 CONCLUSION

Integrated Specialist Services (Pty) Ltd was tasked by Singo Consulting (Pty) Ltd to carry out a HIA for the proposed Prospecting for Iron Ore, Diamond and Manganese, on the situated in the Kuruman Magisterial District, Northern Cape Province. Desktop research revealed that the project area is rich in archaeological sites ranging from ESA, MSA to LIA, however, the field study did not identify any sites within the prospecting right site. In terms of the archaeology, the Wonderwerk Cave must be treated as a No-Go' areas. The applicant must maintain the  $\pm 4$  km buffer zone from the site. The prospecting teams must take note of the procedure for reporting chance finds appended in this report. The proposed prospecting is supported subject to the recommendations provided in this report.

## 9 RECOMENDATIONS

Report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed Prospecting Right Application on condition that the Wonderwerk Cave is treated as NO GO Areas.
3. Although SAHRA's concerns are noted, given the  $\pm 4$ km distance of the Wonderwerk Cave from the northern boundary of the site, the proposed prospecting activities are not likely to impact on the site from a noise, visual, Seismic and any other potential impacts during prospecting. As such the proposed prospecting should be exempted from noise, visual and seismic impact assessments
4. From a heritage perspective supported by the findings of this study, the Prospecting Right Application is supported. However, the Prospecting should be approved under observation that prospecting does not extend beyond the 4km boundary from the Wonderwerk Cave.
5. Should chance archaeological materials or human remains be exposed during prospecting on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in Prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
6. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed Prospecting Right Application. The Heritage authority may approve the Prospecting Right Application as planned with special commendations to implement the recommendations here in made.

## 10 REFERENCES

2004. Virtual Heritage: The case of the Byzantine Crypt of Santa Cristina and Temple C of Selinunte, Africa. *South African Journal of Science* 102, 217-228.
- Avery, D. M 2006. Pleistocene micromammals of Wonderwerk Cave, South Africa: practical issues.
- Barham, L. and Mitchell, P. 2008. *The first Africans: African archaeology from the earliest toolmakers to most recent foragers*. Cambridge: Cambridge university press
- Beaumont P.B. 2004b. Kathu Pan and Kathu Townlands/Uitkoms. In: Morris D. & Beaumont P.B. (Eds) *Archaeology in the Northern Cape: Some Key Sites*. Kimberley: McGregor Museum 50–53.
- Beaumont, P B., 2006. On a timescale for the past million years of human history in the central South
- Beaumont, P. B. and Vogel, J. C. 2006. On a timescale for the past million years of human history in central South Africa. *South African Journal of Science* 102: 217-228.
- Beaumont, P. B., 1982. Aspects of the Northern Cape Pleistocene project. In : Coetzee J.A. van
- Beaumont, P. B., 1990. Wonderwerk Cave. In Beaumont, P., Morris., (Eds), *Guide to Archaeological*
- Beaumont, P. B., 2004. Wonderwerk Cave, In: Morris D., Beaumont P., (Eds) *Archaeology in the*
- Beaumont, P.B. 2000. *Archaeological Impact Assessment: Archaeological Scoping Survey for the Purpose of an EMPR for the Sishen Iron Ore Mine*. An unpublished report by the McGregor Museum on file at SAHRA as 2000-SAHRA-0023.
- Beaumont, P.B. 2004. *Heritage EIA of Two Areas at Sishen Iron Ore Mine*. An unpublished report by the McGregor Museum on file at SAHRA as 2004-SAHRA-0067.
- Beaumont, P.B. 2005a. *Heritage Impact Assessment of an Area of the Sishen Iron Ore Mine that may be Covered by the Vliegveldt Waste Dump*. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0230.
- Beaumont, P.B. 2005b. *Heritage Impact Assessment for EMPR Amendment for Crusher at Sishen Iron Ore Mine*. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0259.

Beaumont, P.B. 2006a. Phase 1 Heritage Impact Assessment Report on Erf 1439, Remainder of Erf 2974 and Remainder of Portion 1 of the Farm Uitkoms No 463, and Farms Kathu 465 and Sims. An unpublished report by the McGregor Museum on file at SAHRA as 2006-SAHRA-0127.

Beaumont, P.B. 2006b. Phase 1 Heritage Impact Assessment Report on Portions A and B of the Farm Sims 462, Kgalagadi District, Northern Cape Province. An unpublished report by the McGregor Museum on file at SAHRA as 2006-SAHRA-0165.

Beaumont, P.B. 2007. Supplementary Archaeological Impact Assessment report on sites near or on the Farm Hartnolls 458, Kgalagadi District Municipality, Northern Cape Province. Accessed SAHRIS 14 August 2014.

Beaumont, P.B. 2008a. Phase 1 Archaeological Impact Assessment Report on Portion 459/49 of the farm Bestwood 459 at Kathu, Kgalagadi District Municipality, Northern Cape Province. Accessed SAHRIS 14 August 2014.

Beaumont, P.B. 2008b. Phase 1 Heritage Impact Assessment Report on a portion of the remainder of the farm Sekgame 461, Kathu, Gamagara Municipality, Northern Cape Province. Accessed SAHRIS 14 August 2014.

Beaumont, P.B. 2013. Phase 2 archaeological permit mitigation report on a ~0.7 ha portion of the farm Bestwood 549, situated on the eastern outskirts of Kathu, John Taolo Gaetsewe District Municipality, Northern Cape Province. Accessed SAHRIS 14 August 2014.

Beaumont, P.B. and Morris, D. 1990. Guide to archaeological sites in the Northern Cape. Kimberley: McGregor Museum.

Beaumont, P.B., 2006c. Phase 1 Heritage Impact Assessment Report on Portion 48 and the remaining Portion of Portion 4 of the Farm Bestwood 459, Kgalagadi District, Northern Cape Province. An Archaeological Impact Assessment report by the Archaeology Department, McGregor Museum, prepared for MEG Environmental Impact Studies.

Beraldin, J.A., El-Hakim, S., Godin, G., Paquet, E., Peters, S., Rious, M., Valzano, V., Bendeira, A.,

Bergh, J.S. (ed.) 1999. Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies. Pretoria: J.L. van Schaik.

Butzer, K.W., Struckenrath, R., Bruzeweiz, A.J., Helgren, D.M., 1978. Late Cenozoic paleoclimates of

Chazan, M., Matmon, A., Porat, N., Goldberg, P., Yates, R., Avery, M., Sumner, A., Horwitz, L.K., 2008.

De Jong, R.C. 2008. Heritage scoping report: proposed residential development and associated infrastructure on a 200ha Portion of the farm Bestwood 429 RD at Kathu, Northern Cape Province. Report for Rock-Rowan Environmental Consulting, Pretoria.

De Jong, R.C. 2010. Heritage Impact Assessment report: Proposed Manganese and Iron Ore Mining Right Application in respect of the Remainder of the farm Paling 434, Hay Registration Division, Northern Cape Province. Unpublished Report Cultmatrix Heritage Consultants Project 2010/23 May 2010 for Kai Batla.

Deacon, H.J. and Deacon, J. 1999. Human beginnings in South Africa: Uncovering the secrets of the Stone Age. Cape Town: David Philip

Dreyer, C. 2006. First phase archaeological and cultural heritage assessment of the proposed residential developments at the farm Hartsnoll 458, Kathu, Northern Cape. Report for MDA Environmental Consultants, Bloemfontein.

Dreyer, C. 2007. First Phase Archaeological and Cultural Heritage Assessment of the Proposed Garona-Mercury Transmission Power Line, Northern Cape, North-West Province & Free State. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2007-SAHRA-0052.

Dreyer, C. 2008. First phase archaeological and cultural heritage assessment of the proposed residential developments at a portion of the Remainder of the farm Bestwood 459RD, Kathu, Northern Cape. Report for Cultmatrix cc Heritage Consultants, Pretoria.

Dreyer, C. 2008. First phase archaeological and cultural heritage assessment of the proposed sewage pipeline installation at Kathu, Northern Cape. Report for MDA Environmental Consultants, Bloemfontein.

Dreyer, C. 2008a. First Phase Archaeological and Cultural Heritage Assessment of the Proposed Residential Developments at a Portion of the Remainder of the Farm Bestwood 459 Rd, Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2008-SAHRA-0433.

Dreyer, C. 2008b. First Phase Archaeological and Cultural Heritage Assessment of the proposed Bourke project, ballast site and crushing plant at Bruce Mine, Dingleton, near Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2008-SAHRA-0666.

Dreyer, C. 2009. First phase archaeological and cultural heritage assessment of the proposed upgrading of the Waste Water Treatment Works at Kathu, Northern Cape. EIA Report for MDA Environmental Consultants, Bloemfontein.

Dreyer, C. 2010. First phase archaeological & heritage assessment of the proposed iron ore mining developments on Portion 2 of the farm Demaneng 546, Kuruman, Northern Cape. EIA Report Karien van der Merwe, Environmental consultant, Kimberley.

Dreyer, C. 2010. First phase archaeological and cultural heritage assessment of the proposed sand borrow pit & solar farm at a Portion of the farm Bestwood 459RD, Kathu, Northern Cape. Report for Culmatrix Environmental Consultants, Schweizer Reneke.

Dreyer, C. 2013. First Phase Archaeological and Heritage assessment of the Vaal-Gamagara water pipeline project, Northern Cape: Revisit to the Kathu Pan archaeological site. Report for MDA Environmental Consultants, Bloemfontein

First radiometric dates for the Earlier Stone Age sequency in Wonderwerk Cave, South Africa. Journal

Fourie, W. 2013a. Proposed Lehating Mining (Pty) Ltd underground manganese mine on Portions 1 of the Farm Lehating 714 and Portion 2 of the farm Wessels 227, approximately 20km northwest of Hotazel, Northern Cape Province. Unpublished report prepared for SLR Consulting (Africa) (Pty) Ltd

Fourie, W. 2013b. Heritage Impact Assessment for the proposed activities for Tshipi é Ntle Manganese Mining on Remaining extent of the farm Wessels 227 and Portions 1 and 2 and the remaining extent of the farm Dibiaghomo 226 in the Northern Cape Province. Pretoria: Unpublished report.

Gaigher, S. 2012. Heritage Impact Assessment for Proposed establishment of the San Solar Energy Facility located south of Kathu on a Portion of the Farm Wincanton 472, Northern Cape Province.

Hall, S. 1985. Excavations at Rooikrans and Rhenosterkloof, Late Iron Age sites in the Rooiberg area of the Transvaal. Annals of the Cape provincial museums (human sciences) 1 (5): 131-210

Heritage Walk Down –Mothibstad Substation to Sekgame Switching Station 132kV line Page 23 of 82

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

Hutten, L. & Hutten, W. 2013. Heritage Impact Assessment report for the farms Wessels 227 Portion 2 and Boerdraai 228. Cape Town: Unpublished report.

Journal of Archaeology Science 10, 1-13

Kaplan, J. 2009. Archaeological Impact Assessment, the proposed Whitebank Keren Energy Solar Plant on Farm 77 near Kuruman, Northern Cape. Report prepared for EnviroAfrica. Agency for Cultural Resource Management. Accessed on SAHRIS 29 March 2019

Kaplan, J.M. 2008. Phase 1 Archaeological Impact Assessment: Proposed Housing Development, Erf 5168, Kathu, Northern Cape Province. An unpublished report by the Agency for Cultural Resources Management on file at SAHRA as 2008-SAHRA-0487.

Kruger N. 2016. Archaeological Impact Assessment (AIA) of areas demarcated for proposed photovoltaic power plants (EAST 2 and East 3 Solar Parks and access roads) on the remainder and portion 2 of the farm East 270, Joe Morolong Local Municipality, Northern Cape Province. Accessed on SAHRIS 29 March 2019

Kruger, N. 2014. Sishen Iron Ore Mine: Stormwater infrastructure for the Sishen Mine, John Taolo Gaetsewe District Municipality, Northern Cape Province. Report for AGES Gauteng. Accessed on SAHRIS 29 March 2019

Kusel, U., M., Van der Ryst. 2009. Cultural Heritage Impact Assessment of Manganese Mining Areas on the farms Belgravia 264, Santoy 230, Gloria 226 and Nchwaning 267, at Black Rock, North of Kuruman, Kgalagadi District Municipality Northern Cape Province. Unpublished Report African Heritage Consultants September 2009. For Assmang Limited. Accessed on SAHRIS 29 March 2019

Magoma, M. 2013. Phase 1 Archaeological Impact Assessment Specialist Study Report for The Proposed for Mining of Minerals on Portions 1, 2 Remainder Extent of the Farm 219 And Lower Kuruman 219 In Kuruman Area Within Ga-Segonyana Local Municipality, John Gaetsewe District, Northern Cape Province. Unpublished report. SAHRIS Accessed 29 March 2019.



Morris, D. & Beaumont, P.B. 1994. Ouplaas 2 Rock Engravings, Danielskuil. An unpublished report by the McGregor Museum on file at SAHRA as 1994-SAHRA-0025.

Morris, D. 1999. Proposed Mining Areas and Properties at Ulco, Northern Cape, Including the Vicinities of Gorrokop and Groot Kloof. An unpublished report by the McGregor Museum on file at SAHRA as 1999-SAHRA-0055.

Morris, D. 2001. Report on Assessment of Archaeological Resources in the Vicinity of Proposed Mining at Morokwa. An unpublished report by the McGregor Museum on file at SAHRA as 2001-SAHRA-0078.

Morris, D. 2005. Report on a Phase 1 Archaeological Assessment of Proposed Mining Areas of the Farms Bruce, King, Mokaning and Parson, Between Postmasburg and Kathu, Northern Cape. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0032.

Morris, D. 2008. Archaeological and Heritage Phase 1 Impact Assessment for Proposed Upgrading of Sishen Mine Diesel Depot Storage Capacity at Kathu, Northern Cape. An unpublished report by the McGregor Museum on file at SAHRA as 2008-SAHRA-0489.

Morris, D. 2010. Kathu Solar Energy Facility and the Sishen Solar Energy Facility: Specialist input for the Scoping Phase of the environmental impact assessment for the proposed Kathu Solar Energy Facility and the Proposed Sishen Solar Energy Facility, Northern Cape Province. Unpublished report: McGregor Museum, Kimberley. Accessed 29 March 2019.

Morris, D. 2010. Solar energy facilities. Specialist input for the environmental impact assessment phase and environmental management plan for the proposed Kathu-Sishen solar energy facilities, Northern Cape. Accessed SAHRIS Accessed 29 March 2019.

Morris, D. 2014. Rectification and/or regularisation of activities relating to the Bestwood township development near Kathu, Northern Cape: Phase 1 Archaeological Impact Assessment. Accessed on SAHRIS 28 March 2019.

National Environmental Management Act 107 of 1998

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

Nilssen, P. 2018. Proposed Hotazel Solar and Grid Connection on Remaining Extent (Portion 0) of the Farm York A 279, Portion 0 of Hotazel 280, Portion 11 of the Farm York A 279 and Portion 3 of the Farm York A 279, District of Hotazel, Northern Cape Province. Scoping Report. Accessed 29 March 2019.

Northern Cape: some Key Sites. McGregor Museum, Kimberly.

of Human Evolution 55, 1-11.

Ogaki, Japan. November 17-19, NRC 47406.

Orton, J. 2016. Heritage Impact Assessment for proposed power lines near Hotazel, Kuruman Magisterial District, Northern Cape. Unpublished report for Aurecon South Africa (Pty) Ltd. Accessed on SAHRIS 29 March 2019

Orton, J. 2016a. Scoping Heritage Impact Assessment for the proposed Hotazel Solar Farm, Kuruman Magisterial District, Northern Cape. Report for Aurecon South Africa (Pty) Ltd. Accessed 29 March 2019

Orton, J. 2016b. Heritage Impact Assessment for proposed improvements on the N14 Sections 6 and 7 between Olifantshoek and Kathu, Postmasburg Magisterial District, Northern Cape. Report for SLR Consulting (South Africa) (Pty) Ltd. Accessed 29 March 2019.

Orton, J. 2017. Heritage Impact Assessment for the Proposed Hotazel Solar Farm on the Annex Langdon 278, Kuruman Magisterial District, Northern Cape. Unpublished report for Aurecon South Africa (Pty) Ltd. Accessed 29 March 2019.

Orton, J. and Walker, S. 2015. Heritage Impact Assessment for a proposed 132 kV power line, Kuruman Magisterial District, Northern Cape. Report for Savannah Environmental (Pty) Ltd. Accessed on SAHRIS 18 March 2019.

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

Pelser, A. & van Vollenhoven, A.C. 2011. A report on a heritage impact assessment (HIA) for a proposed new rail crossing over the Gamagara River for the Gloria Mine operations, Assmang Black Rock, on Gloria 266, North of Hotazel, Northern Cape. Pretoria: Unpublished report. Accessed on SAHRIS 29 March 2019

Pelser, A.J. & A.C. van Vollenhoven. 2010. A Report on an Archaeological Impact Assessment (AIA) for proposed mining operations on the remainder of the farm Paling 434, Hay Magisterial District, Northern Cape. Unpublished Report AE1030 May 2010 for Cultmatrix Heritage Consultants.

Pelser, A.J. 2012. A report on an Archaeological Impact Assessment (AIA) for a proposed housing development on ERF 675, Kuruman, in the Northern Cape. Unpublished report prepared for Thabo Phokoje.

Pistorius, J.C.C. 2006. A Phase I Heritage Impact Assessment (HIA) study for the proposed new United Manganese of Kalahari (UMK) Mine on the farms Botha 313, Smartt 314 and Rissik 330 near Hotazel in the Northern Cape Province of South Africa.' Unpublished report prepared for Metago Environmental Engineers. Accessed on SAHRIS 29 March 2019

Proceedings of the 10 th International Conference on Virtual Systems and Multimedia (VSMM'2004),

Researching the SAHRIS online database (<http://www.sahra.org.za/sahris>) further studies were identified in the vicinity of the study area:

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

SAHRIS case number 1063. Consultation in terms of Section 40 of the Mineral and Petroleum Resources Development Act 2002, (Act 28 of 2002) for the approval of an Environmental Management Plan for right in respect of manganese and sugillite on Portions 1 and 2 of the farm Curtis No.470, situated in Magisterial District of Kuruman, Northern Cape.

SAHRIS case number 1089. Consultation in terms of Section 40 of the Mineral and Petroleum Resources Development Act 2002, (Act 28 of 2002) for the approval of an Environmental Management Programme for a mining right in respect of manganese and iron ore on Erf

SAHRIS case number 1332. Resources Development Act 2002, (Act 28 of 2002) for the approval of an amendment to the Environmental Management Programme for a Mining Right in respect of iron ore on Portion 2, 6 and the remainder of farm Parson Po. 564, Portions 1,2,3 and the remainder of farm King No. 561, Portion 3,4,5 and the Remainder of Bruce No.544, Portion 1,2,3,4,5 Remainder of Mokaning No.560 situated in the Magisterial District of Kuruman, Northern Cape.

SAHRIS case number 1402. Consultation in terms of Section 40 of the Mineral and Petroleum Resources Development Act of 2002, (Act 28 of 2002) for the approval of an Environmental Management Plan in respect of borrow pits 1,2,3,4,5,6,7,8 & 9 on Portion 19 of farm 543, remaining extent and Portion 1 of Gamagara 541, Portion 1 and Portion 2 of Fritz 540, remainder of Nooitgedacht 469 and remainder of Lylyveld 545, situated in the Magisterial District of Kuruman Northern Cape region.

SAHRIS case number 1411. Consultation of scoping report submitted in terms of Section 22 of the Mineral and Petroleum Resources Development Act 2002, (Act 28 of 2002) in respect of remaining extent of Portion 1 (Barnadene) of farm sims No.462, remaining extent of and remaining extent and Remaining Extent of Portion 2 (Rusoord) and Remaining Extent of Portion 3 (Portion of Portion 1) of Farm Sacha No.468, remaining extent of Portion 4 of the Farm Gamagara No.541, Remaining Extent of Portion 1 (lot a ) of the farm Sishen No. 543, situated in the Magisterial District of Kuruman.

SAHRIS case number 1505. Environmental Impact Assessment and Environmental Management Programme.

SAHRIS case number 2516. Consultation in terms of Section 40 of the Mineral and petroleum Resources Development Act 2002, (Act 28 of 2002) for the approval of an Environmental Management Plan for mining permit for aggregate gravel on the remainder of the farm Galway No.431, situated in the Magisterial District of Kuruman, Northern Cape region.

SAHRIS case number 2769. Proposed construction of 400kV transmission line from Ferrum substation (Kathu) to Garona substation (Groblershoop) in the Northern Cape.

SAHRIS case number 3029. Proposed Development of 3 500 Erven on 280 Ha of Vacant Land on a Portion of Remainder of Farm Sekgame 461, Kathu.

SAHRIS case number 3157. Consultation in terms of section 40 of the mineral and petroleum resources development act 2002, (act 28 of 2002) in respect of for manganese and iron ore on the farm Seldsden No.464 situated in the Magisterial District of Kuruman, Northern Cape Region.

SAHRIS case number 3615. Proposed borrow pits associated with the upgrade of the Kimberley – Hotazel Railway Line

SAHRIS case number 3698. Proposed relocation of the Vaal Gamagara water pipeline at the Sishen Iron Ore Mine.

SAHRIS case number 3701. Proposed relocation of Rail and Associated Infrastructure at Sishen Iron Ore Mine.

SAHRIS case number 4456. Proposed development of 380ha for residential uses, Kathu, Portion 175/1 and Portion 175/2, Joe Morolong Local Municipality, John Taolo District Municipality, Northern Cape Province.

SAHRIS case number 4460. Residential development on Remainder, and Portion 3 of Farm Bestwood 459 near the town of Kathu, Northern Cape.

SAHRIS case number 4785. SAHRA comments for the Heritage Impact Assessment Report for the Kalahari Solar Power Project located on Famr Kathu 465, near Kathu within the Northern Province.

SAHRIS case number 5323. EIA and EMPr for the Proposed Solar CSP Integration Project: Project 2 - 400kV Power Line from Ferrum to the Solar Substation.

SAHRIS case number 5648. The project will consist of the construction of an approximately 67km Double Circuit 400kV powerline from the Manganore Substation to the Ferrum Substation, including the construction of the new Manganore TX (Transmission) Substation adjacent to the existing Manganore DX (Distribution) Substation. The line runs in a northerly direction through areas of the Tsantsabane, Ga-Segonyana and Gamagara Local Municipalities in the Northern Cape Province.

## **SAHRIS CASE REFERENCES**

Sites in the Northern Cape. McGregor Museum, Kimberly.

Smit, A.P. 1966. Wateroog in die Dorsland: Ned. Geref. Kerk Kuruman 1916-1966. Kuruman: Kerkraad van die Gemeente Kuruman.

Snyman, P.H.R. 1992. Kuruman 1800-1990, PhD Thesis, University of South Africa.

Thackeray, A.I., Thackeray, J.F. and Beaumont, P.B. 1983. Excavations at the Blinkklipkop specularite mine near Postmasburg, northern Cape. South African Archaeological Bulletin 38:17-25.

the Ghaap Escarpment, Kalahari margin, South Africa. Quaternary Research 10, 310-339.

Tlou, T. and Campbell, A. 1997. History of Botswana. Gaborone: Macmillan.

Van der Ryst, MM and Küsel, SU. 2012. Phase 2 specialist study of affected Stone Age locality at site SA02, a demarcated surface area, on the farm Nooitgedacht 469 (Woon 469). Commissioned by Sishen Iron Ore Mine and AGES (Pty) Ltd. Accessed on SAHRIS 29 March 2019

Van der Walt, J. 2013. Archaeological Impact Assessment for The Proposed Right of a Quarry on the Farm Gamohaam 438 Portion 1 In the Kuruman Magisterial District. Unpublished report.

Van Schalkwyk, J. 2010. Archaeological impact survey report for the proposed development of a solar power plant on the farm Bestwood 459, Kathu Region, Northern Cape Province. Accessed SAHRIS Accessed on SAHRIS 29 March 2019.

Van Schalkwyk, J.A. 2010. Archaeological impact survey report for the proposed township development in Hotazel, Northern Cape Province. Unpublished report 2010JvS028.

Van Schalkwyk, J.A. 2015a. Cultural heritage impact assessment report for the development of the proposed Lehating 132kV power line and substation, northwest of Hotazel, Northern Cape Province. Unpublished report 2015JvS045. Accessed on SAHRIS 29 March 2019

Van Schalkwyk, J.A. 2015b. Cultural heritage impact assessment for the proposed development of the Tshipi-Borwa 132kV power line and substation, south of Hotazel, Kgalagadi District Municipality, Northern Cape Province. Unpublished report 2015JvS073.

Van Schalkwyk, J.A. 2016. Cultural heritage impact assessment for the development of the proposed Kagiso Solar power plant on the remaining extent of the farm Kameelaar no.315 Registration Division Kuruman, Northern Cape Province. Accessed on SAHRIS 29 March 2019

Van Vollenhoven, A.C. 2012. A report on a heritage impact assessment for the proposed Main Street 778 (Pty) Ltd mining right application close to Hotazel, Northern Cape Province. Pretoria: Unpublished report.

Walker S.J.H., Chazan M., Lukich V. & Morris D. 2013. A second Phase 2 archaeological data recovery at the site of Kathu Townlands for Erf 5116: Kathu, Northern Cape Province. Accessed on SAHRIS 29 March 2019.

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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Walker, S.J., Chazan, M & Morris, D. 2013. Kathu Pan: location and significance. A report requested by SAHRA for the purpose of nomination. Accessed SAHRIS 29 March 2019

Webley, L & Halkett, D. 2008. Phase 1 Heritage Impact Assessment: proposed on the Farm Adams 328 and Erin 316 Kuruman. Ga-Segonyana Municipality. in the Northern Cape. Report prepared for Zama Mining Resources (Pty) Ltd. Archaeology Contracts Office, Department of Archaeology, University of Cape Town. Accessed on SAHRIS 29 March 2019

Wilkins, J, and Chazan, M. 2012. Blade production - 500 thousand years ago at Kathu Pan 1, South Africa: support for a multiple origins hypothesis for early Middle Pleistocene blade technologies. *Journal of Archaeological Science* 39: 1883-1900. Accessed on SAHRIS 29 March 2019

Zinderen Bakker E.M., (Eds), *Palaeoecology of Africa and the Surrounding Island* 15, pp41-44

## 11 APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED PROSPECTING FOR IRON ORE, MANGANESE AND DIAMONDS ON THE IN THE MAGISTERIAL DISTRICT OF KURUMAN, IN NORTHERN CAPE PROVINCE.

**September 2022**

### **ACRONYMS**

<b>BGG</b>	Burial Grounds and Graves
<b>CFPs</b>	Chance Find Procedures
<b>ECO</b>	Environmental Control Officer
<b>HIA</b>	Heritage Impact Assessment
<b>ICOMOS</b>	International Council on Monuments and Sites
<b>NHRA</b>	National Heritage Resources Act (Act No. 25 of 1999)
<b>SAHRA</b>	South African Heritage Resources Authority
<b>SAPS</b>	South African Police Service
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organisation



## 11.1 CHANCE FIND PROCEDURE

### 11.1.1 Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during prospecting. The main purpose of a CFP is to raise awareness of all construction, mine workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of prospecting monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed development site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during prospecting.

### 11.1.2 Definitions

In short, the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

### 11.1.3 Background

The proposed Prospecting Right Application is located on the Farms Bretby 687 and Hurley 688, situated in the Magisterial District in the Northern Cape Province. The proposed prospecting is subject to heritage survey and assessment at planning stage and Prospecting Right Application in accordance with Section 38(8) of NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are often accidentally exposed in the course of construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive

Archaeological Impact Assessment was completed by T. Mlilo (2022) on the prospecting site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2022) recorded burial sites and historical structures within the proposed prospecting site.

#### 11.1.4 Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the proposed prospecting site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during prospecting and movement of prospecting equipment. Integrated Specialist Services (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during prospecting. This ensures that appropriate treatment of chance finds while also minimizing disruption of the prospecting schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of prospecting scheduling. It is recommended that due to the moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during prospecting.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

## 11.2 GENERAL CHANCE FIND PROCEDURE

### 11.2.1 General

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

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 30m buffer zone from all sides of the find.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ*.
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- **Finds rescue strategy:** All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition, to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeologist will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the prospecting right application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when prospecting activities can resume.

### 11.2.2 Management of chance finds

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Integrated Specialist Services (Pty) Ltd will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which ISS will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or ISS Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

- a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:
- b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.
- c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.
- d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.
- e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42.
- f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to SAHRA Burial Ground and Graves Unit.

- g. As soon as the project archaeologist receives the rescue permit from SAHRA he will, in collaboration with the company/contractor, arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.
- h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.
- i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the client.

Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

## 12 APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED PROSPECTING RIGHT APPLICATION

Objective								
<ul style="list-style-type: none"> <li>• Protection of archaeological sites and land considered to be of cultural value.</li> <li>• Protection of known physical cultural property sites against vandalism, destruction and theft; and</li> <li>• The preservation and appropriate management of new archaeological finds should these be discovered during construction.</li> </ul>								
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
<b>Pre-Mining Phase</b>								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
<b>Mining Phase</b>								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform Northern Cape PHRA		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the Northern Cape PHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
<b>Rehabilitation Phase</b>								
		Same as prospecting phase.						
<b>Operational Phase</b>								
		Same as prospecting phase.						

## 13 APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans.

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must

(a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must—

(a) take account of all relevant cultural values and indigenous knowledge systems;

- (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;
- (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- (d) contribute to social and economic development;
- (e) safeguard the options of present and future generations; and
- (f) be fully researched, documented and recorded.

### 13.1 Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority
- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
  - (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
  - (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority
- (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
  - (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- (6) Subject to the provision of any other law, any person who in the course of development or any other activity



discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

### 13.2 General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with

an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.

## 14 APPENDIX 4: CV OF THE ARCHAEOLOGIST (Trust Mlilo)

### PERSONAL INFORMATION

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

### BRIEF PROFILE

#### Mr Trust Mlilo

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

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

## EDUCATION

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

## LANGUAGE PROFICIENCY (Good, Fair, Poor)

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

## SKILLS MATRIX

Current Skills levels:

1 Had appropriate training only

2 Limited practical experience

3 Solid practical experience

4 Well versed, extensive experience

5 Expert, extensive experience

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

## COMPUTER SKILLS:

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

## ACADEMIC WORKS

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

### Title of Post-Graduate University Theses & Dissertations:

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

### Selected Seminars, Lectures & Conference Papers

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

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

## WORK & PROFESSIONAL EXPERIENCE

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

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

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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

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

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

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



## CORPORATE RESPONSIBILITIES

None

## SPECIALIST POSITIONS AND PROFESSIONAL CONSULTANCY EXPERIENCE

### 2007 - 2014 Archeological and Heritage Impact Assessment Studies

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

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

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

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

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

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

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

provincial and national heritage laws. The project closed with development of the cultural heritage Conservation Management Plan and nomination of Shembe cultural Landscape as Provincial Heritage Site (Nomination Approved by the KwaZulu Natal Provincial Heritage Council (Amafa Council) on October. 18 2010).

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

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

## **AUXILIARY PROFESSIONAL EXPERIENCE**

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

## **AUXILLIARY SPECIALIST SKILLS**

### **Key Management skills**

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

### **Other skills**

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

## **PROFESSIONAL AFFILIATIONS**

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

## **REFEREES**

### **Professor Sarah Wurz.**

Institute for Human Evolution

University of Witwatersrand

Private Bag 3

Wits, 2050

Phase 1 HIA For HIA/Archaeological Impact Assessment for Prospecting Right Application within Remaining Extent and Portion 1 of farm Hurley 688 for Diamond and Remaining Extent of Bretby 687 farm for Manganese and Iron ore. IN the Administrative District of Kuruman, Northern Cape Province.

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South Africa

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