



**Integrated Specialist Services (Pty) Ltd**

**PHASE 1 ARCHAEOLOGICAL AND HERITAGE  
IMPACT ASSESSMENT REPORT FOR THE  
PROPOSED MINING PERMIT APPLICATION  
ON PORTION PLAAS DUNDEE NR 416,  
FAURESMITH IN THE LETSEMENG LOCAL  
MUNICIPALITY, FREE STATE PROVINCE.**

## DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Proposed Mining Permit Application on Plaas Dundee Nr 416, Fauresmith, in Letsemeng Local Municipality of the Free State Province
Purpose of the study	The Phase 1 Archaeological Impact Assessment for the Mining Permit Application in Free State Province
Coordinates	See Figure 2
Municipalities	Letsemeng Local Municipality, Xharied District Municipality
Predominant land use of surrounding area	Agriculture and commercial
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Authors	Trust Mlilo
Date of Report	18 November 2022

This report serves to inform and guide the applicant and contractors about the possible impacts that the proposed mining 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 Mining Permit Application on Plaas Dundee Nr 416, Fauresmith located within the Letsemeng Local Municipality of the Free State Province. This report is submitted in terms of Section 38 (8) of the National Heritage Resources Act 25 of 1999 as part of the Mining Permit 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 mining activities. In compliance with these laws, NDI Geological Consulting Services (Pty) Ltd on behalf of Malherbe Familie Trust engaged Integrated Specialist Services (Pty) Ltd to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for the proposed Mining Permit Application on Plaas Dundee Nr 416, Fauresmith in the Free State Province. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks within the Mining Permit Application site. The study site is not on pristine ground, having seen significant transformations owing previous and current land use activities. The general mining area is known for occurrence of archaeological and historical sites. In terms of the built environment there are no buildings or structures within the site. It should be noted that archaeological material and unmarked graves exist and when encountered during mining, work must be stopped forthwith, 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 mining.
- Most sections of the proposed mining site are accessible; the field survey was effective enough to cover significant sections of the project receiving environs.
- The immediate project area is predominantly commercial agriculture.
- Some sections of the proposed Mining Permit site are severely degraded from previous and current agriculture activities.

The report sets out the potential impacts of the proposed mining 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 Mining Permit Application without any further investigation and mitigation.
3. From a heritage perspective supported by the findings of this study, the Mining Permit Application is supported. However, the Mining Permit Application should be approved under observation that mining does not extend beyond the area considered in this report/affect the identified heritage sites.
4. Should chance archaeological materials or human remains be exposed during mining 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 mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
5. 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 Mining Permit Application. The Heritage authority may approve the Mining Permit Application as planned with special commendations to implement the recommendations here in made.

This report concludes that the impacts of the proposed mining 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 Mlilo**, 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 Mlilo, 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. Mlilo 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 Mining Permit Application 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).

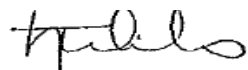
**Geographic Co-ordinate Information:** Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

**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 Mining Permit Application being submitted by Malherbe Familie Trust

Signed by



23/ 02/ 2023

## ACKNOWLEDGEMENTS

The author acknowledges NDI Geological Consulting Services (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 mining 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 NDI Geological Consulting Services (Pty) Ltd on behalf of Malherbe Familie Trust to carry out a Phase 1 AIA/ HIA for the proposed Mining Permit Application on Plaas Dundee Nr 416, Fauresmith, Free State Letsemeng Local Municipality of the Free State 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 quarry 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 Late Iron Age (LIA) and historical sites. It should be noted that while heritage resources may have been located in the entire study area, subsequent developments previous and agriculture, settlements, road and boundary fence lines have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during mining. The proposed Mining Permit 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 Mining Permit Application cannot be approved, taking full cognizance of clear procedures to follow in the event of chance findings.

## 1.1 Terms of Reference (ToR)

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

- Archaeological and heritage potential of the proposed mining 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 Mining Permit 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 proposed mining 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.

## 1.2 Project Location

The proposed aggregate mining project is located in the Free State Province of South Africa, approximately +/- 7 km North of Vanderkloof in the Free State Province

**Table 1: Description of Properties affected by the Project.**

<b>Farm Name:</b>	Farm Dundee No. 416
<b>Coordinates</b>	29°55'37.92"S, 24°43'59.29"E
<b>Application area (Ha)</b>	4.9 ha
<b>Magisterial district:</b>	Fauresmith
<b>Distance and direction from nearest town</b>	+/- 7 km North of Vanderkloof.
<b>21-digit Surveyor General Code for each farm portion</b>	F01100000000041600000



PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED MINING PERMIT APPLICATION ON PORTION PLAAS DUNDEE NR 416, FAURESMITH IN THE LETSEMENG LOCAL MUNICIPALITY, FREE STATE PROVINCE.

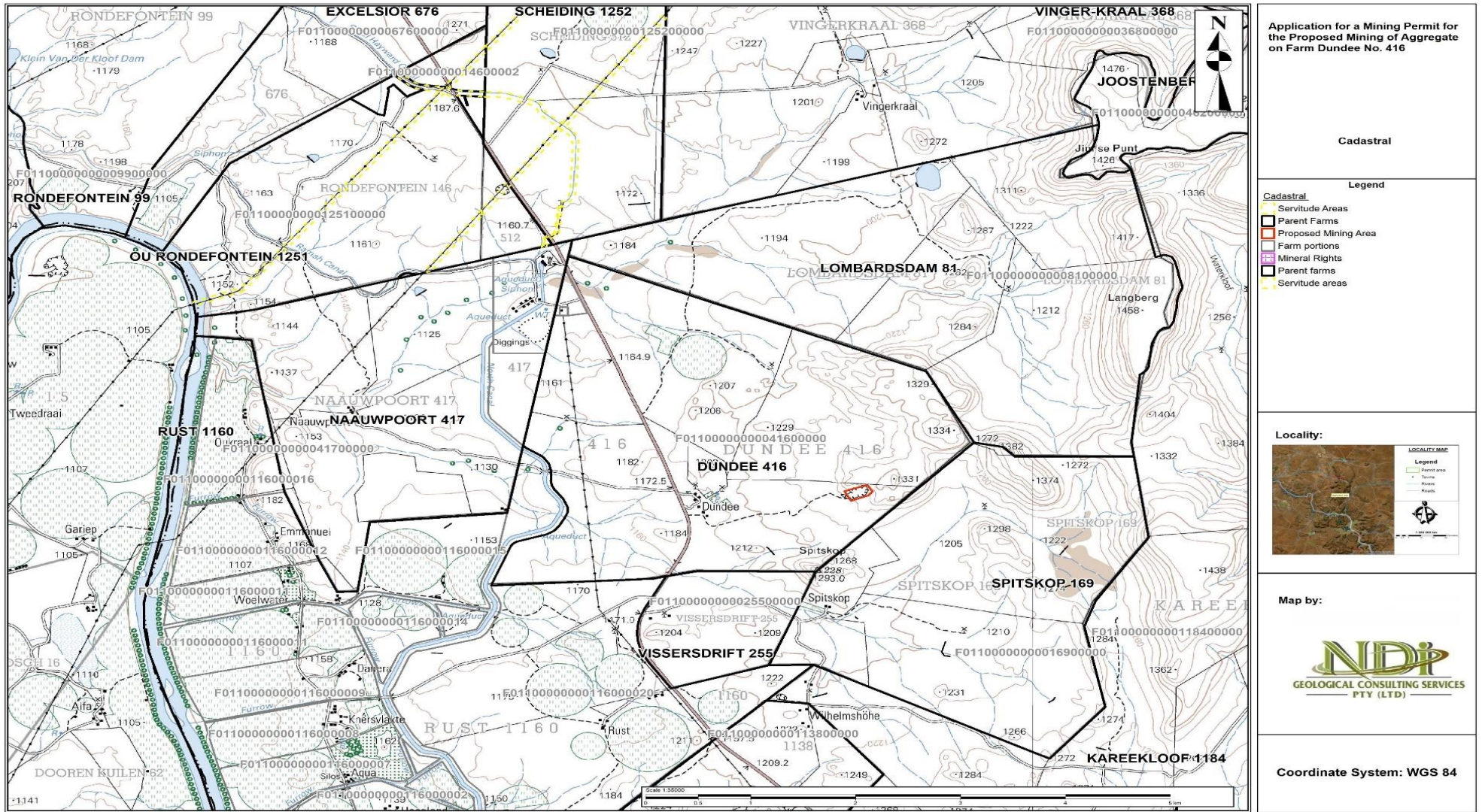


Figure 1: Location of the proposed project site (NDI Geological Consulting Services (Pty) Ltd)

PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED MINING PERMIT APPLICATION ON PORTION PLAAS DUNDEE NR 416, FAURESMITH IN THE LETSEMENG LOCAL MUNICIPALITY, FREE STATE PROVINCE.

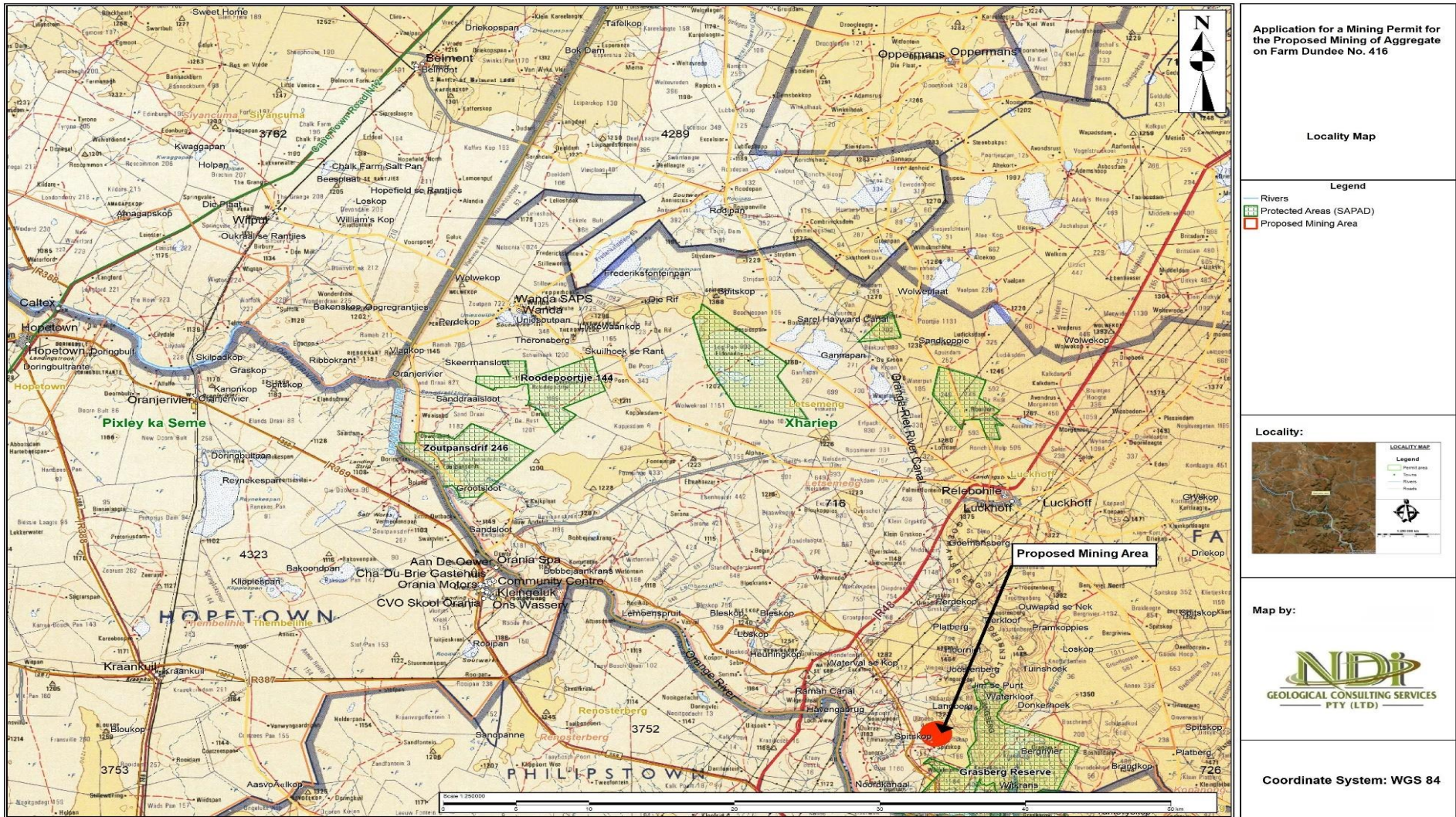


Figure 2: Location of the proposed project site (NDI Geological Consulting Services (Pty) Ltd)

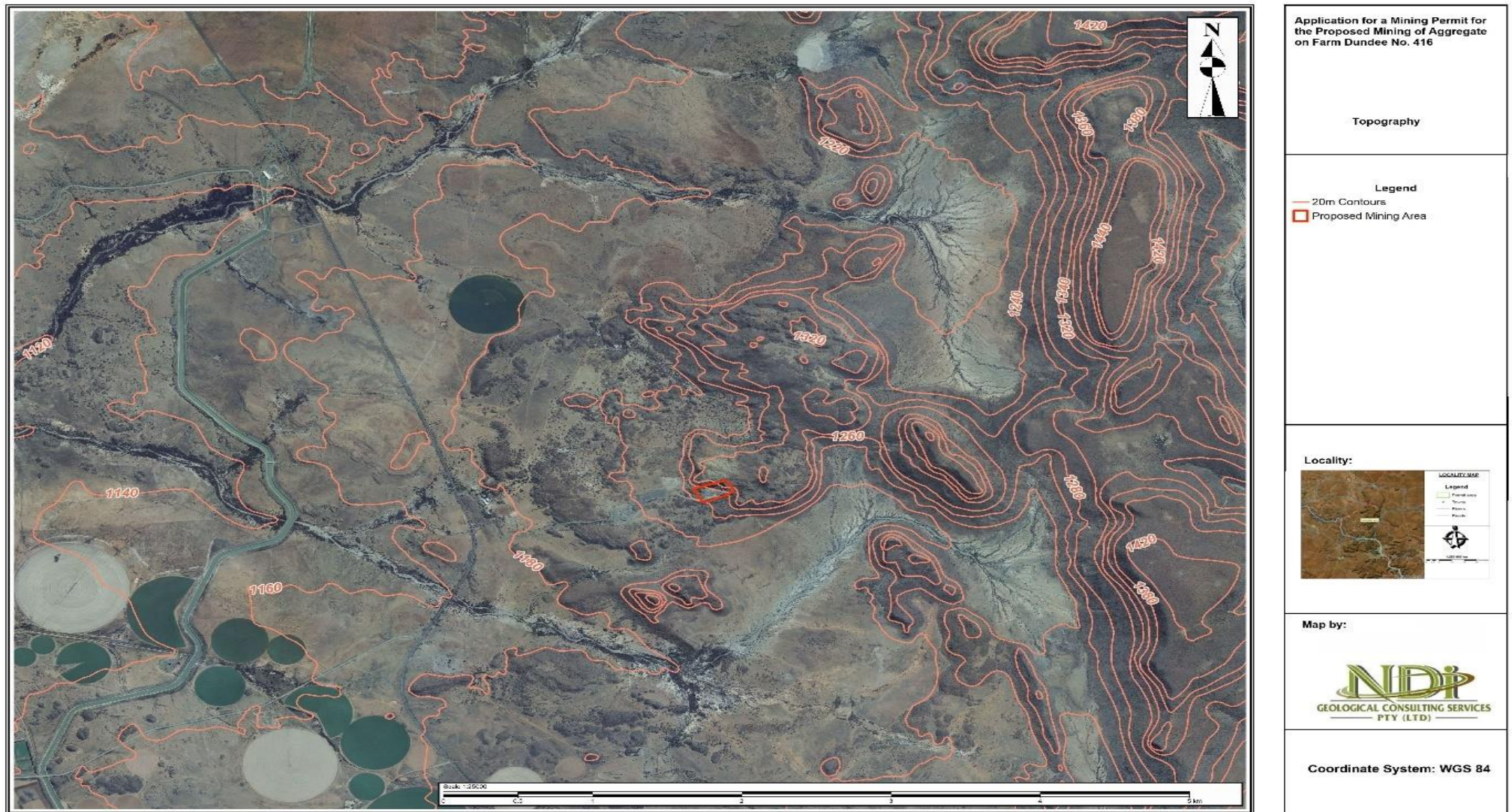


Figure 3: Location of the proposed project site (NDI Geological Consulting Services (Pty) Ltd)



Figure 4: Location of the proposed project site (NDI Geological Consulting Services (Pty) Ltd)

## 1.1 Project Background

The Malherbe Familie Trust (Malherbe) appointed Ndi Geological Consulting Services (Pty) Ltd as the independent Environmental Assessment Practitioner (EAP) to facilitate the Environmental Authorisation (EA) process for the proposed mining of aggregate on Farm Dundee No. 416, located in Letsemeng Local Municipality, Free State Province.

The proposed mining project will cover an area of 4.9 hectares and is located +/-7 km north of Vanderkloof in the Free State Province. Malherbe requires a mining permit in terms of the Mineral and Petroleum Resources Development Act (Act No. 22 of 2002) (MPRDA). Before the mining permit will be granted, Malherbe must undertake an EA application process in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA). The competent authority for the EA process is the Free State Department of Mineral Resources (DMR).

The Department of Forestry, Fisheries and the Environment, (DFFE) has identified the need for the alignment of environmental authorisations and has promulgated a single environmental management system under NEMA whereby the DMR has become the competent authority for the authorisation of mining-related projects under the NEMA Environmental Impact Assessment (EIA) Regulations. This will result in simultaneous decisions in terms of NEMA, the National Environmental Management Waste Act (Act No. 59 of 2008) (NEM: WA) and other environmental management Acts.

Since the proposed mining project triggers activities listed in Listing Notices 1 and 3 of the NEMA, a Basic EIA authorisation process in terms of NEMA Government Notice Regulation (GNR) 326 of 7 April 2017 will be required.

The total duration of the mining activities is planned for five (5) years. However, under mining permit applications the applicant can only apply for a period of two (2) years, with potential to renew the MP. The MP will be renewed three (3) times to make up for the 5 years required. Where possible, rehabilitation will be conducted in tandem with the mining activities, with the final rehabilitation being undertaken once the mining activities have been completed at a site and before the mining team leaves the site.

The Interested and Affected Parties (I&AP) engagement process, as part of the EA process, is conducted in terms of NEMA (as amended) which provides clear guidelines for I&AP engagement during an EIA. One of the general objectives of integrated environmental management set out in Section 23 (2) of NEMA is to ensure the “adequate and appropriate opportunity for public participation in decisions that may affect the environment”.

## 1.2 Description of the proposed project

Malherbe, the property owner, proposes to upgrade existing gravel roads located on the affected property (Farm Dundee No. 416). The proposed upgrades will require aggregate material and the proposed borrow pit is required as a source of material to be used for the upgrading of the road.

The proposed project triggers activities listed in NEMA Listing Notices 1 and 3 as provided in **Error! Reference source not found..**

**Table 2: Applicable Activities**

Name of the activity (All activities including activities not listed)	Aerial extent of the activity in Ha or m <sup>2</sup>	Listed activity mark with an x where applicable or affected	Applicable listing notice (GNR 983, GNR 984 or GNR 985 or NOT LISTED)
Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the mining permit.	4.9 ha	x	GNR 983 (as amended by GNR 327) Activity 21
The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	4.9 ha	x	GNR 983 (as amended by GNR 327) Activity 27
Fence	49 000 m <sup>2</sup>	x	GNR 983 (as amended by GNR 327) Activity 27 GNR 985 Activity 12
Mobile Office	0.0025 ha	x	GNR 983 (as amended by GNR 327) Activity 21 GNR 983 (as amended by GNR 327) Activity 27
Stockpiles	<4.9ha	x	GN R 983 (as amended by GNR 327) Activity 27 GNR 985 (as amended by GNR 327) Activity 12 GNR 983 (as amended by GNR 327) Activity 21
Ablution Facility	0.0025 ha	x	GNR 983 (as amended by GNR 327) Activity 27 GNR 983 (as amended by GNR 327) Activity 21
Loading Hauling & Transport	1000m <sup>2</sup>	x	GNR 983 (as amended by GNR 327) Activity 27 GNR 983 (as amended by GNR 327) Activity 21

## 2 LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study. The proposed Mining Permit 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 mining.

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 (Malherbe Familie Trust), SAHRA/ PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed mining, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.



Table 3: 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 Mining Permit Application in Free State Province. The study included a review of 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 mining footprint. Initially a drive-through was undertaken around the proposed mining 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 Mining Permit 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 Mining Permit Application.

### 3.1 The Fieldwork survey

The fieldwork survey was undertaken on the 27th of January 2023. The focus of the survey involved a pedestrian survey which was conducted within the proposed mine 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 literature survey suggests that prior to the 20th century modern agriculture development; the general area would have been a rewarding region to locate heritage resources related to 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 commercial farming infrastructure (see Figure 1).

### 3.2 Visibility and Constraints

The proposed mining site was accessible although visibility was compromised in some sections due to dense grass 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 Public Participation process is conducted by the EAP. The study team consulted residents who provided vital information about the heritage character of their area. The Participation Process will also invite and address comments from the public and any registered heritage bodies on any matter related to the proposed Mining Permit 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 Mining Permit Application to be submitted to DMRE.

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



Plate 1: showing the proposed Mining Permit Application site

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Plate 2: showing proposed mining site within quarry site.



Plate 3: showing Mining Permit Application site.

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Plate 4: showing Mining Permit Application site



Plate 5: showing proposed Mining Permit application site.

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Plate 6: showing the proposed Mining Permit Site.



Plate 7: showing the proposed Mining Permit Application site.

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Plate 8: showing the proposed Mining Permit Application site

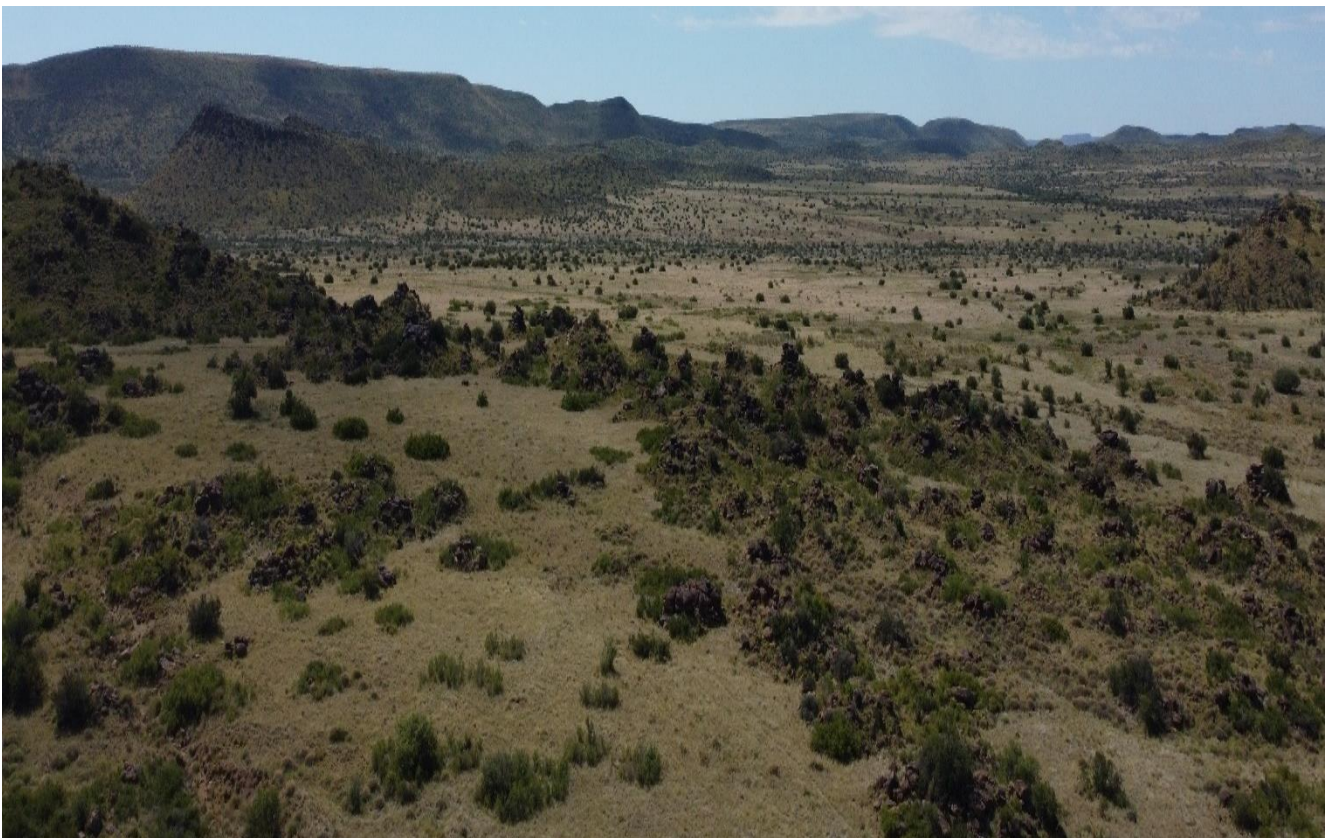


Plate 9: showing the Mining Permit Application site



Plate 10: showing the Mining Permit Application site



Plate 11: showing proposed Mining Permit site



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Plate 12: showing the proposed Mining Permit site.



Plate 13: showing the proposed Mining Permit site.



Plate 14: showing access road to proposed Mining Permit site.



Plate 15: showing the proposed Mining Permit site.



Plate 16: showing the proposed Mining Permit site.



Plate 17: showing the proposed Mining Permit site.



Plate 18: showing the proposed Mining Permit site.



Plate 19: showing the proposed Mining Permit site.



Plate 20: showing the proposed Mining Permit site.

## 4 ARCHAEOLOGICAL CONTEXT

South Africa is one of the privileged countries in the world to have a very long and varied history human occupation (Deacon and Deacon 1999). The Free State Cape Province is one area where indications of this rich and diverse historical sequence can be crystallised. Very limited Stone Age resources were identified in most of the consulted literature, making it unlikely but equally possible to encounter Stone Age sites and occurrences within the proposed prospecting footprint. The primary Stone Age landmarks appear to be sparsely concentrated around the Vredefort Dome (about 20km away from study area) where cave and rock formations (together with general factors such as water, vegetation, faunal resources) continue to attract human habitation. The same area of the Vredefort Dome also has some concentration of Later Iron Age, historical and mining heritage resources of note (Figure 1; Taylor 1979; Pelsler 2000; 2009; Naude 2009).

## **Stone Age Archaeology**

Stone Age archaeology is prevalent in the larger province but is generally thin in the area under study. The ESA is generally associated with the earliest stone tool industry (Oldowan industry) which is 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 Middle Stone Age is better understood as a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based Early Stone Age technology (Barham and Mitchell 2008). 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).

To the northeast, notable MSA/LSA remains have been reported around the Vredefort Dome. Some of these materials occur in cave where they are associated with transhumance, but some have been reported in open air area, especially close to the Vaal River (Pelser 2009: 164). The finds include scrapers, blades, cores, flakes, hammerstones, and small microlithic tools that occur as scattered finds. In general, very little is known about the Stone Age archaeology of the area under study.

## **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, all of which are purported to mark a clear contrast from the Stone Age lifeways that the farmers came in contact with (Huffman 2007). Huffman (2007) argues that ceramics can be used to trace these movements, as well as the broad linguistic identities of people but not necessarily their specific social or political groupings. After missing out on the Early Iron Age occupation, the earliest Iron Age expression in the general area under study is related to makers of Ntsuanatsatsi ceramic facies (AD 1450-1650) of the LIA. Perhaps the declining summer rainfall restricted the earlier EIA occupation to a diminishing belt close to the southeast Coast and northern parts of South Africa (Maggs 1994).

Huffman (2007) classifies Ntsuanatsatsi as Nguni, while Maggs (1976) classifies it as Sotho-Tswana but one thing is clear, this was just the formative phase of the population agglomeration is evidence during the subsequent phases of both the Nguni and Sotho-Tswana, now using stone walling to demarcate space in the nucleated settlement patterns of the already established Central Cattle Pattern (CCP). The agglomeration was later intensified by the Mfecane (the wars and population movements of the early 19th Century which culminated in the establishment of the Zulu Kingdom).

The stonewalled settlements of the LIA are better represented in the general area under study, even though one may not expect to encounter a secure LIA occupation on the clearly farmed development footprint. Noteworthy, is the site of Askoppies (ash heaps) located close to Vredefort Dome (Figure 1). This stone walled site with over 20 individual homesteads of between 8 and 15 scalloped areas (with hut foundation) produced impressive materials that include seashells, pottery, ivory bangles, hippo tusks, iron spears, cuprous earrings, bone pendants, smelting furnace remains, slag, tuyeres and a glass bead (Pelser 2009: 166-170). The ivory bangles are clearly status insignia showing that the occupants of the particular homestead may have been elite, a view supported by the associated large cattle kraal and perhaps the cuprous tear-drop earrings. The latter were clearly obtained through trade, perhaps with communities further to the north because these earrings (some of which are bronzes made from Rooiberg tin) are common in the large Sotho-Tswana town found in Magaliesburg-Rusternberg area.

Other researchers who surveyed the general area concur that the area covered by the Vredefort Dome Conservancy and its surroundings are rich LIA remains in the form of stone-walls dating from the 17th century to early 19th Century (Bakker *et al.* 2004; Dreyer 1999; 2006).

### **Historical and mining heritage (~ AD 1800 to 1950)**

Southern Africa was networked with the literate world for several centuries, but the period of written history in the study area corresponds to the increased arrival of travellers and white farmers in the 1800s. Before this, the Portuguese maritime expansion had begun around in the 15<sup>th</sup> Century culminating with Vasco da Gama reaching several places along South Africa's coast and trading with Khoekhoen (Khoi) and Bantu-speaking groups along the coast. From AD 1591 the Dutch and English ships joined the trade resulting in more permanent settler life, first in Cape Town before the white farmers (free burghers) pushed into the interior.

In 1820 a major British settlement was implanted on the eastern frontier of the Cape Colony, resulting in large numbers of the community moving into the interior, initially to KwaZulu-Natal, and then after Britain annexed Natal (1843), further into the interior to beyond the Vaal River. Disruptions of the *Mfecane* eased their takeover of African lands and the Boers (farmers) established several Republics. Ethnographically, recollections of major events such as the *Mfecane* stand out. These wars definitely affected the area under study, in as much as they

affected much of the interior, even beyond the Zambezi. The ripple effects resulted in the disruptions of Sotho-Tswana groups in the Free State. In 1824 Mzilikazi, one of Shaka's exceptional general fled the Zulu king with about 20000 followers and on highway north briefly established two strong holds at Mosega and Kapain, from which he controlled and scattered the many Sotho-Tswana groups such as the Kwena, who in 1823 were settled on Kokosi hill (now Losberg) north of the Vredefort Dome (Naude 2009). Cattle raiding, conflict over land and changes in climatic and subsistence strategies characterised much of the cultural landscape of the time.

The first European settler occupation of area around the development footprint happened in the 1830s (Pelser 2009: 171). This occupation was influenced by both the need for farmland, as well as prospecting and mining for gold. The activities left unmistakable landmarks such as holes and trenches, mine dumps, mine tunnels and remains of various structures for both dwellings and farm/mine activities (Figure 3).



Figure 5: A historical image of 19<sup>th</sup> century gold mining activities near Rooderand Goldfieds in Venterskroon (Pelser 2009: 176).

Decorated historical porcelain and metals usually accompany these sites. Cemeteries, some of which have marked graves dating as early as 1910, also occur in the general area under study. One of the most important one is the Anglo-Boer War (AD 1899-1902) cemetery and concentration camp memorial near Koppies to the southwest of the dome (Pelser 2009: 178).



### **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.

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

The Orange River and its tributaries are known for containing large amounts of Early Stone Age tools (Acheullian) (Sampson 1972). The larger region also produced what was to become the Fauresmith industry, first identified by Van Riet Lowe. The Fauresmith represents a transitional phase between the ESA and MSA and have some technological and typological elements of the latter. Assemblages include refined hand-axes, long blades, convergent flakes/points, scrapers and prepared cores used in the manufacture of these tool types. This combination of Modes 2 and 3 makes it a likely transitional industry (Barham & Mitchell 2008:229). Rock engraving sites dating to the Later Stone Age as well as the historic period are known to exist in the larger region, especially in the region on the eastern side of the Riet River. Some of the rock engravings depict people riding horses. Several of the rock engravings have been collected and are curated in the town of Koffiefontein.

The study area is rich in Middle and Later Stone Age open surface occurrences, rock engraving, prehistoric settlement sites as well as historical structures that occur along the Riet River. Historical structural and artifacts associated with the Anglo Boer War also occur in the project area Goodwin and Van Riet Lowe 1929; Van Riet Lowe 1941; Maggs 1971). Stone Age archaeological sites in the region are generally associated with river courses and areas where dolerite outcrop occur especially in the vicinity of Goemansberg and Joostenberg (Goodwin and Van Riet Lowe 1929). Dolerite outcrop can be regarded as archaeologically significant since Stone Age artifacts in the region are mostly made of hornfels, a finegrained isotropic rock found in the hot-contact zone between the dolerites and shales in the area (Henderson Phillip 2008, Rossouw 2018, 2021). As a result, stone tool knapping sites are commonly found near dolerite-shale contact zones. In addition, rock engravings on dolerite are fairly common in the region, with recordings made on several farms between Koffiefontein and Luckhof. A previously reported early Middle Stone Age stone tool knapping site, is found widely distributed as a surface scatter lag deposit (Rossouw 2018).

## 5 RESULTS OF THE FIELD STUDY

### 5.1 Archaeology

The land use associated with the proposed borrow pit is an old quarry. The land use associated with the affected property is agriculture. The project area is surrounded by farming areas. The site was scanned for archaeological remains, but given the previous and current land use activities, 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 proposed mining permit site has low potential to yield previously unidentified archaeological sites during mining. Literature review also revealed that no Stone Age and LIA 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.

### 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 mining 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 burial sites within the Mining Permit application site. 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. It should also be borne in mind that 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 low within the old quarry site,

however, should such sites be identified during mining, they are still protected by applicable legislations, and they should be protected.

### 5.3 Public Monuments and Memorials

The study did not record any public memorials and monuments within the proposed mining site that require protection during mining. As such the proposed Mining Permit 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 within the proposed mining permit site. In terms of Section 34 of the NHRA, the proposed Mining Permit Application may be approved without any further investigation and mitigation.

### 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 mining, indirect impacts may occur during movement of heavy mining 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 mining. 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 mining 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 mining 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 mining site.

Table 4: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None exist within the proposed Mining Permit 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	None
Movable objects	None
Overall comment	No archaeological or heritage material was recorded at the proposed Mining Permit Application is supported.

## 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 5: 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

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		overall effect.
<b>Magnitude(M)</b>		
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 6: 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 7: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Mining 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	1	1	2	8	<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	1	4	<ul style="list-style-type: none"> <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	1	4	<ul style="list-style-type: none"> <li>Construction management and workers must be educated 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 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 proposed mining is considered the total impact associated with the proposed mining project when combined with other past, present, and reasonably foreseeable future developments projects. The impacts of the proposed mining development were assessed by comparing the post-project situation to a pre-existing baseline. This section considers the cumulative impacts that would result from the combination of the proposed mining development.

The current Mining Permit Application will see the entire site being destroyed and will have significant impact on the visual and sense of place. This proposed mine combined with other proposed mining activities will effectively transform a natural agriculture area into a mining area. The mining and other proposed infrastructure developments will have a combined visual impact on the landscape. The cumulative impact will negatively affect the landscape quality of the area which are ordinarily considered to be source. The frequency of mining and other proposals in the area has a potential of collectively changing the character of the landscape. In the long run the accumulative impact will be of high significance in terms of its potential to change the characteristics and quality of the landscape in the long run. The field survey focused on potential LIA sites, historical buildings and structures as well as burial grounds and graves.

## 5.8 Mitigation

Mitigation for the proposed mining site is not required since no significant archaeological remains were recorded within the proposed mining site.



## 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

Various specialists conducted several Phase 1 Archaeological/ Heritage studies for various infrastructure developments in the project area since 2002. Although the proposed Mining Permit Application site did not yield any confirmable heritage resources, it is important to note that the possibility of encountering archaeological sites beneath surface is for ever present. However, the lack of confirmable archaeological sites recorded on the Mining Permit Application site is thought to be a result of destructive land use activities such as agriculture. This may have reduced archaeological remains to isolated chance finds without provenance. It should be borne in mind that the absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist within the proposed mining site.

Based on the significance assessment criterion employed for this report, the proposed mining development site was rated low from an archaeological perspective although it is surrounded by significant sites. It should be noted that significance of the sites of Interest is not limited to presence or absence of physical archaeological sites. Significant archaeological remains may be unearthed during mining. (See appended chance find procedure).

## 8 CONCLUSION

Integrated Specialist Services (Pty) Ltd was tasked by NDI Geological Consulting Services (Pty) Ltd to carry out a HIA for the Mining Permit Application for aggregate on Plaas Dundee Nr 416, Fauresmith located Plaas Dundee Nr 416, Fauresmith, in Letsemeng Local Municipality within Free State Province. Desktop research revealed that the project area is rich in LIA archaeological sites and historical sites, however, the field study did not identify any sites within the Mining Permit Site. In terms of the archaeology, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, remains and the applicant and contractors are urged to be diligent and observant during mining. The procedure for

reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the Mining Permit Application cannot be approved.

## 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 Mining Permit Application without any further investigations and mitigation.
3. From a heritage perspective supported by the findings of this study, the Mining Permit Application is supported. However, the mining permit application should be approved under observation that mining does not extend beyond the area considered in this report/affect the identified heritage sites.
4. Should chance archaeological materials or human remains be exposed during mining 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 mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
5. 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 Mining Permit Application. The Heritage authority may approve the Mining Permit Application as planned with special commendations to implement the recommendations made herein.

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# 11 APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED MINING PERMIT APPLICATION ON PLAAS DUNDEE NR 416, FAURESMITH, WITHIN THE LETSEMENG LOCAL MUNICIPALITY, FREE STATE PROVINCE

JANUARY 2023

## 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 mining. 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 mining 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 mining 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 mining.

### 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 Mining Permit Application is located on Plaas Dundee Nr 416, Fauresmith situated Letsemeng Local Municipality of the Free State. The proposed mining development is subject to heritage survey and assessment at planning stage and Mining Permit 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 (2023) on the proposed mining site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2023) did not record any significant heritage site within the proposed mining site.

#### 11.1.4 Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the Mining Permit 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 mining and movement of mining equipment. The proposed mining activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Integrated Specialist Services (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during mining. This ensures that appropriate treatment of chance finds while also minimizing disruption of the mining 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 mining 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 mining.

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 100m 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 Mining Permit application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when 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 MINING PERMIT APPLICATION

Objectiv	<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.	Activit y	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Inform ed
Pre-Mining Phase								
1	Planni ng	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
Mining Phase								
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 form site;		Throughout	C CECO	SM	ECO	EA EM PM

PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED MINING PERMIT APPLICATION ON PORTION PLAAS DUNDEE NR 416, FAURESMITH IN THE LETSEMENG LOCAL MUNICIPALITY, FREE STATE PROVINCE.

		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 mining phase.						
<b>Operational Phase</b>								
		Same as mining 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>	Mlilo	<b>FIRST NAME</b>	Trust
<b>GENDER</b>	Male			<b>DATE OF BIRTH</b>	10 July 1969
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<b>QUALIFICATION: MA (ARCHAEOLOGY), BA Hons (Archaeology), [Univ. of Pretoria, Pretoria], PDGE, BA (Archaeology) UZ</b>					

### 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 PermitApplication 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.Tarlton 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
- HIA for proposed Eskom Wolvekrans Substation and 132kv Powerline in Mogale City and of Gauteng Province:
- HIA for Proposed Zandrivers Drift Mining PermitApplication 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 MunicipalityMpumalanga Province
- Phase 1 Heritage Impact Assessment for Eskom's proposed 0.659km 22kv Murraysburg powerline move in the Pixley Ka Seme District Municipality, Mpumalanga 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 Mlilo 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.**

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