

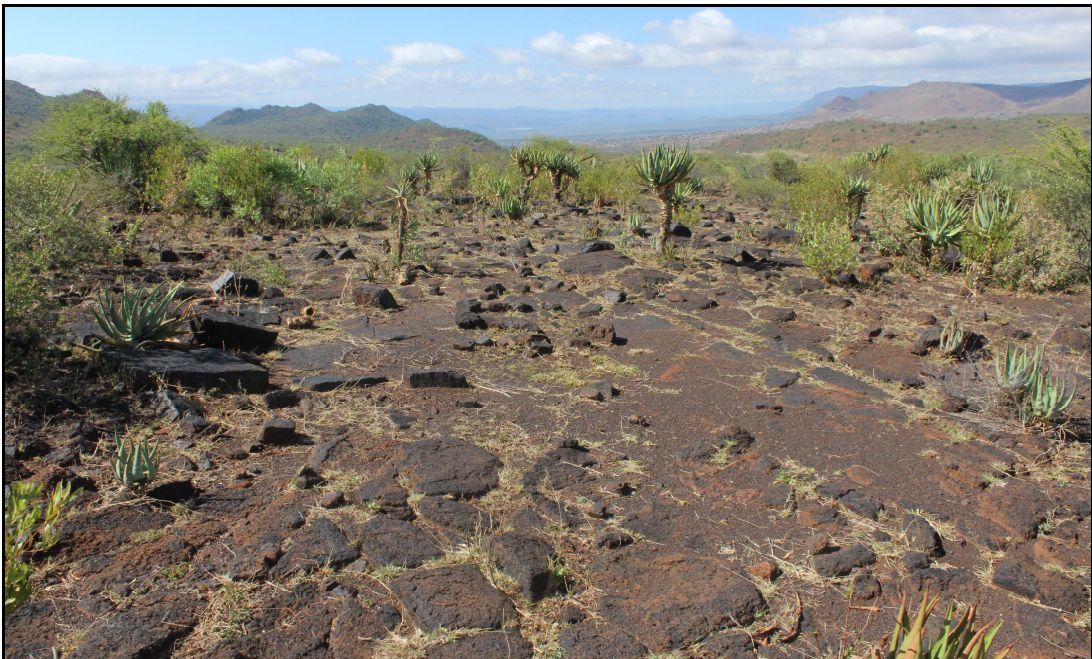
# MILLENNIUM HERITAGE GROUP (Pty) Ltd

## PHASE 1

---

### ARCHAEOLOGICAL IMPACT ASSESSMENT

RELATING TO THE DEVELOPMENT OF AN IRON AND VANADIUM ORE MINE WITH ASSOCIATED INFRASTRUCTURE/GELUK MINE ON FARMS GELUK 512KS, GELUK OOS 53KS AND IRON STONE, AT MAGNETS HEIGHT BY RAKHOMA MINING RESOURCES (PTY) LTD NEAR STEELPOORT, LIMPOPO PROVINCE.



*Compiled for:*

**Naledzi Group (PTY) LTD**

145 Thabo Mbeki Street

Posnet suite # 320

Private Bag X 9307

Polokwane

Email: [Info @naledzi.co.za](mailto:Info@naledzi.co.za)

*Compiled By:*

**Millennium Heritage Group (PTY) LTD**

*A division of*

**KPRM Holdings (PTY) LTD**

PO Box 36723

Menlo Park 0102

347 Charles Street

Brooklyn

Pretoria

[Email.mathohoe@gmail.com](mailto:Email.mathohoe@gmail.com)

**November 2015**

**Copyright:** Copyright in all documents, drawings and records whether manually or electronically produced, which form part of the submission and any subsequent report or project document shall vest in MHG. None of the documents, drawings or records may be used or applied in any manner, nor may they be reproduced or transmitted in any form or by any means whatsoever for or to any other person, without the prior written

## EXECUTIVE SUMMARY

The proposed study area is situated on farms Geluk 512KS, Geluk oos 53 KS and Iron stone 847KS located directly west of Steelpoort valley within the Sekhukhune District, Limpopo Province. The site is located on the following global positioning system co-ordinates (GPS S24°.50', 44. 9" & E 29°.57'.56. 6"). The proposed study area is characterized by mountain and undulating hills with the lower lying area covered by existing villages with small scale subsistence farming. A reasonable percentage of the study area is still undeveloped vacant land, possibly restricted by the topography. The study area covers approximately 3165.32 hectares of land.

A multi-stepped methodology was used to address the terms of reference. To begin with, a robust desktop study was carried out to understand the framework for managing and accessing impact near Heritage Sites. This included consulting the 1972 Convention, the operational guidelines of 2013, the ICOMOS (2011) guidelines on assessing impact on or near Heritage sites. The IUCN guidelines and standards of best practice were also consulted. Subsequently, a review of the archaeology of the area was carried out using contract archaeology reports, research reports and academic publications. Desktop studies were followed by fieldwork carried out by expert archaeologists and heritage managers in conformity with the National Heritage Resources Act of 1999. Based on an interdisciplinary methodology, that combined ICOMOS methodology with several techniques from various disciplines, the impact of the proposed mixed development site was considered. The survey of the proposed area revealed No heritage resources sites within the proposed development footprint. The following conclusions were reached:

- Generally the study area is situated on a landscape that encompasses mountain ridges, and hills with large section covered by hematite rocky outcrops, a stream transverse the area forming an east and west dichotomy. Several domestic cultivating fields and garden occur alongside the stream. Built up areas are characterized by residential sites with every village with its cemetery.

- Three isolated cemeteries were identified in association with built up areas (Village settlements) and should be avoided. All new activities (Engineering aspects such as access routes, water, and sewage and electricity lines should be designed not to disturbed these areas.
- Grave and Graveyards can be mitigated by the following one of the following strategies, Namely:
  - ✓ Graveyards can be considered a ‘ NO GO’ area and be conserved *insitu* within the property, the area could be fenced to mitigate damage and vandalism.
  - ✓ Grave yards can also be exhumed and relocated. The exhumation process are regulated by various legislations, regulations and administrative procedures. This task is undertaken by Forensic archaeologist and reputed undertakers who are acquainted with all administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social facilitations process with 60 days statutory notice period for grave older than sixty years. Permission of exhumations and relocation have to be obtained from the decedents of the deceased, the National Department of Health, the provincial department of Health, The Premier of the Province and the Local Police.

A 500 meters restriction to mining is strongly recommended to safe guard the populated areas and the creation of safety or buffer zones for drilling and blasting which include fly rock and ground vibration that could end up damaging people’ s houses.

- Two stone wall sites were noted and geo-referenced one in close proximity to a soccer field and the other one at the western river bank, these stone walling sites seem to represent recent past activity periods.

These sites must be avoided by the Mining activities. No fixed prescriptions exist for safe distance that has to be maintained between the stone walled and proposed activities. However the above mitigations should become un-avoidable, Phase II investigations (Mapping is required) can only be conducted by archaeologists accredited with the Association for southern African Professional Archaeologist (ASAPA). The archaeologist has to obtain a permit from the South African Heritage Resources Authority (SAHRA) which will authorize the collection of artifacts prior to the mineral exploration phase, or Mining activities. Should the recommendation be followed there are no objections to the proposed mineral exploration and we recommend to Limpopo Provincial Heritage Resources Authority or the South African Heritage Resource Agency to approve the project as planned.

**ACKNOWLEDGEMENTS:**

**CLIENT NAME:** Rakhoma Mining Resource (Pty) Ltd

---

**CONSULTANTS:** Millennium Heritage Group (PTY) LTD

**HERITAGE AND ARCHAEOLOGICAL SPECIALISTS:** Mr. Mathoho Ndivhuho. Eric  
(BA, BA Hons. Archaeology, University of Venda, MPhil Degree in Archaeology, University  
of Cape Town; PhD Candidate University of Pretoria)  
Heritage specialist/ ASAPA Accredited Archaeologist  
Membership Number # 312  
Email: [mathohoe@gmail.com](mailto:mathohoe@gmail.com)

**REPORT AUTHOR:** Mr. Mathoho Ndivhuho Eric

## TABLE OF CONTENTS

---

CONTENT	PAGE
EXECUTIVE SUMMARY .....	2
ACKNOWLEDGEMENTS:.....	5
CONSULTANTS: MILLENNIUM HERITAGE GROUP (PTY) LTD .....	5
DEFINITIONS.....	10
1.INTRODUCTION.....	11
2. RELEVANT LEGISLATION.....	12
2.1. THE NATIONAL HERITAGE RESOURCE ACT (25 OF 1999).....	12
2.2. THE HUMAN TISSUE ACT (65 OF 1983).....	15
3.TERMS OF REFERENCE.....	15
4.TERMINOLOGY.....	16
5. METHODOLOGY.....	18
SOURCE OF INFORMATION .....	18
ASSUMPTION AND LIMITATIONS.....	18
6. ASSESSMENTS CRITERIA .....	18
6.1 SITE SIGNIFICANCE.....	19
6.2 IMPACT RATING .....	20
6.3 CERTAINTY .....	21
6.4 DURATION .....	21
6.5 MITIGATION .....	22
7. BRIEF SYNTHESIS.....	22
Development of an Iron and vanadium ore mine near Steelpoort, Limpopo Province (AIA) report November 2015	6

<b>7. ARCHAEOLOGICAL BACKGROUND AND HERITAGE.....</b>	<b>22</b>
<b>7.1 STONE AGE (ESA, MSA AND LSA).....</b>	<b>22</b>
<b>7.2. IRON AGE / FIRST-FARMING COMMUNITIES.....</b>	<b>24</b>
<b>7.3. THE REGIONAL HISTORY OF BA- PEDI.....</b>	<b>26</b>
<b><i>7.4 HISTORICAL / COLONIAL PERIOD.....</i></b>	<b>29</b>
<b>8. SITE LOCATION AND PROJECT DESCRIPTION.....</b>	<b>31</b>
<b>9. ASSESSMENT OF SITES AND FINDS.....</b>	<b>36</b>
<b>10. CONCLUSION AND RECOMMENDATIONS.....</b>	<b>39</b>
<b>11. GOOGLE EARTH MAP OF THE STUDY AREA.....</b>	<b>40</b>
<b>PROFESSIONAL DECLARATION .....</b>	<b>41</b>
<b>12. REFERENCE .....</b>	<b>42</b>

## **LIST OF FIGURES**

Figure 1: Topographical Map of the study area .....	33
Figure 2: View of the proposed study area adopted from Google Earth program .....	33
Figure 3: View of the proposed study area covered by natural vegetation.....	34
Figure 4: View of the River valley dominated by magnetite rocky outcrop .....	34
Figure 5: Recently excavated trench earmarked to channel water from the Shakwaneng River to water the nearby garden. The second photo shows an earth dam constructed to store water inside a garden.....	35
Figure 6: Illegal sand mining activities on one of the existing non- perennial stream. ....	35
Figure 7: The site has been indicated by Ageva Sisalana, there is a possible grave indicated by cairn of stones in the vicinity.....	37
Figure 8: A stone wall site alongside the River bank, the area seem to have been used for domestic cultivation.....	38
Figure 9: View of an existing cemetery at Maphopha village, the site is within the built-up areas.....	38
Figure 10: View of the study area adopted from a Google Earth program showing area with heritage significance .....	40



## Acronyms

<b>AIA</b>	Archaeological Impact Assessment
<b>EIA</b>	Environmental Impact Assessment
<b>EIA</b>	Early Iron Age
<b>EMP</b>	Environmental Management Plan
<b>NEC</b>	Naledzi Environmental Consultants
<b>NEMA</b>	National Environmental Management Act, 1998 (Act No.107 of 1998)
<b>NHRA</b>	National Heritage Resources Act, 1999 (Act No.25 of 1999)
<b>SAHRA</b>	South African Heritage Resources Agency
<b>ESA</b>	Early Stone Age
<b>MSA</b>	Middle Stone Age
<b>LSA</b>	Late Stone Age
<b>IA</b>	Iron Age
<b>LIA</b>	Late Iron Age
<b>UNESCO</b>	United Nations Educational, Scientific and cultural Organization
<b>WHC</b>	World Heritage Conventions of 1972

## DEFINITIONS

**Archaeological** Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

**Chance Finds** Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

**Cultural Heritage Resources** Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and paleontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

**Cultural Significance** The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

**Grave** A place of interment (variably referred to as burial), including 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.

**Historic** Material 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.

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

**Late Iron Age** this period is associated with the development of complex societies and state systems in southern Africa.

**Material culture** Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

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

## 1. INTRODUCTION

Rakhoma Mining Resources (PTY) LTD commissioned studies for the proposed Mining Rights on farms Geluk 512KS, Geluk Oos 53 KS and Iron stone 847KS, west of the Steelpoort valley, within the Sekhukhune district municipality, Limpopo Province. To ensure that the proposed development meets the environmental requirements in line with the National Environmental Management Act 107 of 1998 as amended in 2010, they appointed Naledzi Group (PTY) LTD as Independent Environmental Assessment Practitioner. Naledzi Environmental Consultants appointed Millennium Heritage Group (PTY) LTD to undertake archaeological impact assessment of the proposed project.

The process is conducted in line with the national Environmental Management Act, 1998(Act 107 of 1998) in support of the application for a mining Rights. An application was submitted to the Department of Mineral Resources (DMR, Limpopo Province) for a Mining Rights in terms of the Mineral and Petroleum Resources Development Act (MPRDA,) Act 28 of 2002 and this project was assigned Ref (DMR ref: LP30/5/1/2/2/10107MR) The proposed activities is listed as described in Government Gazette Notice R982 EIA regulation of 2014. According to the Act the proposed development triggers a full scoping and EIA process. The development require Environmental authorization through Environmental Impact Assessment process in terms of the National Environmental Management Act (NEMA, 1998) (Act 107 of 1998). This will also involve compliance with other sets of legislation to obtain all the necessary permits to commission the project.

In order to comply with relevant legislations, the applicant requires information on the heritage resources that occur within or near the proposed site and their heritage significance. The objective of the study is to document the presence of archaeological and historical sites of significance in order to inform and guide planning on decision making. The study serve as a statutory frame of reference on archaeology and heritage sites that occur within the proposed study area. The document enable the developer to align their functions and responsibilities in order to facilitate forward planning in minimizing impact on archaeological and heritage sites. Archaeological/ Heritage Impact Assessment is conducted in line with the National Heritage Resources Act of 1999 (Act No. 25 of 1999). The Act protects heritage resources through formal and general protection. The Act provides that certain developmental activities require consents from relevant heritage resources authorities. The South African Heritage Resources Agency developed minimum standards for impact assessment, In addition to these local standards, the International

Council of Monuments and Sites (ICOMOS) published guideline for assessing impacts. The Burra Charter of 1999, require a caution approach to the management of sites, it set out the need to understand the significance of heritage places, and the significance guide decisions.

The proposed study serve as framework tools which ensure that the National Heritage Resources Act (25 of 1999) and the ICOMOS standard principles are applied, in an effective and equitable manner in order to avoid loss and disturbance of heritage sites in the study area. This will enable applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources. Information presented in this report form the basis of Archaeological resources assessment of the proposed project as the proposal constitutes an activity, which may potentially have direct or indirect impact to heritage resources that may occur in the proposed study area.

The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (Section 34), archaeological sites and material (Section 35) and graves and burial sites (Section 36). In order to comply with the legislation, the applicant requires information on the heritage resources, and their significance that occur in the demarcated area. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

## **2. RELEVANT LEGISLATION**

Two sets of legislation are relevant for the study with regards to the protection of heritage resources and graves.

### **2.1. The National Heritage Resource Act (25 of 1999)**

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodians of the heritage resources and makes provision for the undertaking of heritage resources impact assessment for various categories of development as determined by section 38. It also provides for the grading of heritage resources (section 7) and the implementation of a three-tier level of responsibly and functions from heritage resources to be undertaken by the State, Provincial and Local authorities, depending on the grade of heritage resources (section 8)

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

### **Historical remains**

**Section 34 (1)** No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant Provincial Heritage Resources Authority.

### **Archaeological remains**

**Section 35(3)** Any person who discover archaeological or Paleontological object or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum, which must immediately notify such heritage resources authority.

**Section 35(4)** No person may, without a permit issued by the responsible heritage resources authority-

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in ,sell for private gain, export or attempt to export from republic any category of archaeological or paleontological material or object or any meteorite; or
- bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

**Section 35(5)** When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or paleontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order

- carry out an investigation for the purpose of obtaining information on whether or not an archaeological or paleontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or paleontological site is located or from the person proposing to undertake the development if no application for a permit is received within two week of the order being served.

**Subsection 35(6)** the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or paleontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

### **Burial grounds and graves**

**Section 36 (3)** No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (i) 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
- (ii) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

**Subsection 36 (6)** Subject to the provision of any person who in the course of development or any other activity discover 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 resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (l) 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

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 arrangement as it deems fit.

### **Cultural Resource Management**

Section **38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development\*...

- must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

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

- (i) Construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (ii) Any change to the natural or existing condition or topography of land, and
- (iii) Any removal or destruction of trees, or removal of vegetation or topsoil;

**place** means a site, area or region, a building or other structure

**structure** means any building, works, device or other facility made by people and which is fixed to the ground.

## **2.2. The Human Tissue Act (65 of 1983)**

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

## **3. TERMS OF REFERENCE**

The terms of reference for the study were to undertake an Archaeological Impacts Assessment on the proposed Mine development at Magnets heights and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

#### **4. TERMINOLOGY**

The Heritage impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage resources Act, 1999 (Act No 25 of 1999). Heritage resources, (Cultural resources) include all human-made phenomena and intangible products that are result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyle of the people or groups of people of South Africa.

The term ‘ pre – historical’ refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the project area, to the first appearance or use of ‘ modern’ Western writing brought South Africa by the first colonist who settled in the Cape in the early 1652 and brought to the other different part of South Africa in the early 1800.

The term ‘ relatively recent past’ refers to the 20<sup>th</sup> century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may in the near future, qualify as heritage resources.



It is not always possible, based on the observation alone, to distinguish clearly between archaeological remains and historical remains or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floors plans (a historical feature) may serve as a guideline. However circular and square floors may occur together on the same site.

The ‘ term sensitive remains’ is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between ‘ formal’ and ‘ informal’ graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognized and honored whenever graveyards are exhumed and relocated.

The term ‘ Stone Age’ refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the historical period. The Stone Age is divided into an Early Stone Age (3 Million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years ago to 40 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term ‘ Early Iron Age’ and Late Iron Age respectively refers to the periods between the first and second millenniums AD.

The ‘ Late Iron Age’ refers to the period between the 17<sup>th</sup> and the 19<sup>th</sup> centuries and therefore includes the historical period.

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

The term ‘ study area’ or ‘ project area’ refers to the area where the developers wants to focus its development activities (refer to plan)

Phase I studies refers to survey using various sources of data in order to establish the presence of all possible types of heritage resources in a given area.

Phase II studies includes in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include

documenting of rock art, engravings or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavation of archaeological sites; the exhumation of bodies and the relocation of grave yards, etc. Phase II work may require the input of specialist and require the co-operation and the approval of SAHRA.

## **5. METHODOLOGY**

### ***Source of information***

Most of the information was obtained through the initial site visit made on the November and December 2015 (6 days) by Mr. Mathoho Eric where systematic inspections of the proposed study area were covered along linear transects which resulted in the maximum coverage of the entire site. Standard archaeological observation practices were followed; Visual inspection was supplemented by relevant written source, and oral communications with local communities from the surrounding area. In addition, the site was recorded by hand held GPS and plotted on 1:50 000 topographical map. Archaeological/historical material and the general condition of the terrain were photographed with a Canon 1000D Camera.

### ***Assumption and Limitations***

It must be pointed out that heritage resources can be found in the unexpected places, it must also be borne in mind that survey may not detect all the heritage resources in a given project area. While some remains may simply be missed during surveys (observation) others may occur below the surface of the earth and may be exposed once development (such as the construction of the proposed facilities) commences.

## **6. ASSESSMENTS CRITERIA**

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites were based on the following criteria:

- The unique nature of a site.
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc).
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site.
- The potential to answer present research questions.

### **6.1 Site Significance**

The site significance classification standards as prescribed in the guideline and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used as guidelines in determining the site significance for the purpose of this report.

The classification index is represented in the Table below.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction

Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction
---------------------------------	-------------	------------------	-------------

***Grading and rating systems of heritage resources***

***6.2 Impact Rating***

**VERY HIGH**

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

**Example:** The loss of a species would be viewed by informed society as being of VERY HIGH significance.

**Example:** The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.

**HIGH**

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

**Example:** The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

**Example:** The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

**MODERATE**

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the public or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are real, but not substantial.

**Example:** The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

**Example:** The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

## **LOW**

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

**Example:** The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

**Example:** The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people living some distance away.

## **NO SIGNIFICANCE**

There are no primary or secondary effects at all that are important to scientists or the public.

**Example:** A change to the geology of a certain formation may be regarded as severe from a geological perspective, but is of NO SIGNIFICANCE in the overall context.

### **6.3 Certainty**

**DEFINITE:** More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

**PROBABLE:** Over 70% sure of a particular fact, or of the likelihood of an impact occurring.

**POSSIBLE:** Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.

**UNSURE:** Less than 40% sure of a particular fact, or of the likelihood of an impact occurring.

### **6.4 Duration**

**SHORT TERM** : 0 – 5 years

**MEDIUM:** 6 – 20 years

**LONG TERM:** more than 20 years

**DEMOLISHED:** site will be demolished or is already demolished

## ***6.5 Mitigation***

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- ✓ **A** – No further action necessary
- ✓ **B** – Mapping of the site and controlled sampling required
- ✓ **C** – Preserve site, or extensive data collection and mapping required; and
- ✓ **D** – Preserve site

## **7. Brief synthesis**

The cultural heritage of the study area has been shaped by almost continuous occupation over the past 500 000 years. This occupation stretched through the early Stone Age period through the Iron Age to colonial settlement in the 1840s.

## **7. ARCHAEOLOGICAL BACKGROUND AND HERITAGE.**

The Archaeological and heritage studies in the region indicate that the area is of high prehistoric and heritage significance. It is in fact a cultural landscape where Stone Age, Iron Age and historical period' s sites contribute the bulk of the cultural heritage of the region (Calabrese, 1996; Huffman, 2007)

### **7.1 STONE AGE (ESA, MSA and LSA)**

The Early Stone Age spans a period of between 1.5 million and 250 000 years ago and refers to the earliest Homo *sapiens* predecessors began making stone artifacts. Archaeological material finger prints (Stone tool artifacts) of these earliest periods have been found at Olduvai Gorge. This Gorge is located in Tanzania; the stone artifact industry was referred to as the Olduwan Industry. Most of the stone artifacts recovered were not neatly made and they were very crude in makings. The ESA tools were simple tools which, were among other things used to chop and butcher meat, de- skin animal and probably to smash bones to obtain marrow. The presence of cut marks from animal fossil bones dating to this period has led to the conclusion by researchers that human ancestors were scavengers and not hunters (Esteyhuysen, 2007). They may have preyed on a drowned or

crippled animals or shared a kill by another predator, which explains why at some ESA sites occur high bone proportions of large, dangerous game (Wadley, 2007)

The industries were later replaced by the Acheulian stone tool Industry which is attested to in diverse environments and over wide geographical areas. The Industry is characterized by large cutting tools mostly dominated by hand axes and cleavers. Bifaces emerged in East Africa more than 1.5 million years ago (mya) but have been reported from a wide range of areas, from South Africa to northern Europe and from India to the Liberian Coast. The end products were astonishingly similar across the geographical and chronological distribution of the Acheulian techno-complex: large flakes that were suitable in size and morphology for the production of hand axes and cleavers perfectly suited to the available raw materials (Sharon, 2009). Evidence presented from Sterkfontein, Swartkrans and Makapansgat caves shows that the first tool making hominids belong to either an early species of the Homo or an immediate ancestor which is yet to be discovered here in South Africa (Esteyhuysen, 2007). Both the Oldwan and Acheulian industries are well represented in the archaeology of the Cradle of Humankind from sites at Sterkfontein and Kromdraai. These discoveries have made considerable contribution to the body of scientific knowledge in the subject of tool manufacturing in association with human evolutions. At Kromdraai site two definite Oldwan stone tools estimated to date to around 1.9 million years ago were discovered.

The Middle Stone Age dates back to about 250 000 ago ending at around 25 000 years ago. In general Middle Stone Age tools are smaller than those of the Early Stone Age period. They are characterized by smaller hand axes, cleavers, and flake and blade industries. The period is marked by the emergence of modern humans through the change in technology, behavior, physical appearance, art, and symbolism. Various stone artifact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean, 2008). Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artifacts to be found between the surface and approximately 50-80cm below ground. Fossil bone may be associated with MSA occurrences. These stone artifacts, like the Earlier Stone Age hand axes are usually observed in secondary context with no other associated archaeological material.

An early South African Middle Stone Age stone artifact industry referred to as the Mangosian had a very wide distribution stretching across Limpopo, the eastern Orange Free State, around Cape Point and Natal (Malan 1949). This stone artifact industry, according to the period, may have represented the final development that the prepared core technique of the Middle Stone Age reached prior to its replacement by the microlithic techniques of the Later Stone Age. Malan (1949) also made mention that there are variations of Middle Stone Age assemblages throughout South Africa (Binnerman *et al*, 2011).

A variety of MSA tools includes blades, flakes, scraper and pointed tools that may have been hafted onto shafts or handles and used as spear heads. Residue analyses on some of the stone tools indicate that these tools were certainly used as spear heads (widely, 2007). The presence of spear heads on some of the MSA assemblages is an indication that these group of people were hunters who targeted middle sized game such as hartebeest, wildebeest and zebra (Wadley, 2007), Some assemblages are show the presence of bone tools such as bone points.

The last phase of stone tool development is associated with Late Stone tools. The period is associated with the use of micro- lithic stone tools. LSA tool have been found in the Cradle of humankind.

## **7.2. IRON AGE / FIRST-FARMING COMMUNITIES**

Controversy still surround the question of the first arrival of Africans in South Africa, however, archaeological evidence has now disproved the old notion that African arrived at the same time with the colonialist at the Cape Town (Maggs, 1986). It is believed that as Iron Age people moved they came into contact with hunter-gatherers (Klatzow, 1994). Current evidence indicates that the first Iron Age communities were established in Transvaal at 280 AD.

For the first time people were able to live a settled village life, unlike hunter- gatherers of the Stone Age. They cultivated crops, had domestic livestock, worked metal such as iron and copper and produce distinctive pottery. They generally preferred to choose specific habitat in which to live characterized by alluvial soil in close proximity to river valleys. The region had natural features, good climatic condition favorable to their survival and



cultivation of their cereals such as sorghum and millet. It is generally believed that ceramic potteries are material culture that expresses group identity because they form a repeated code of cultural symbols, as the design forms a repeated code (Huffman 2007).

Sites dating to the early Iron Age are known to occur within the Steelpoort Valley. These sites are generally smaller or medium or large settlements, but the archaeological visibility may in most cases be difficult owing to the organic nature of the homesteads. Throughout southern Africa, traditional settlements were made to last a lifetime. Iron Age communities lived in permanent settlements consisting of features such as houses, raised grain bins, underground storage pits, burial grounds and animal kraals. The houses' structures were made of thatch or pole and mud, with a smooth daga rested on a thick compacted base. Grain may also be stored in underground pits smeared with dung and then sealed with stones. In the recent past grain pits were often dug into the cattle kraal. Studies show that these Iron Age people kept live stocks (Cattle, sheep and goats). The presence of livestock is represented by the presence of dung deposits, over time cattle dung turns white and white mounds can mark 1000 years old kraal. Sometime the dung ignites and vitrifies and turns into glass. Evidently, the dung needs to be at least a meter thick before verification can take place (Denbow, 1979). Two different dung deposits (Cattle and Goats) can also be separated on the basis of plant residue, known as Phytoliths. These microscopic silica formations are characteristic of grasses, sedges and herbs and occur in much greater abundance in kraals than elsewhere in a settlement. Within southern Africa, similar features provide a background to the study of Iron Age settlements, and have been recorded, in the early, middle and late Iron Age sites (Huffman 2007).

Metal and iron implements are also associated with Early Iron Age communities. Hilltop settlements are mainly associated with Later Iron Age settlement patterns that occurred during the second millennium A.D.

The Later Iron Age communities later moved from settlements in river valleys to the hilltops. Later Iron Age settlements have been formally recorded and cover a relatively extended area in comparison with the EIA settlement patterns. The Iron Age occupation of the study area seems to have taken place on a significant scale as represented by the presence of stonewalled sites. These structures are associated with the latter period dating from 16<sup>th</sup> to 18<sup>th</sup> centuries (Thorp, 1996). Much controversy still surrounds the attempts by various linguists to reconstruct the development and the spread of the African

family of languages. Linguistic and archaeological evidence suggest that the latter part of the Iron Age period is most likely associated with ancestors of Ba- Pedi and the Ndebele. Numerous ancestral to above mentioned groups who occupied the region left remnants of thousands of stonewalled settlement.

### **7.3. THE REGIONAL HISTORY OF BA- PEDI**

The history of the Pedi before the 20<sup>th</sup> century has been well described and documented in several literatures. The exact origin of the Pedi is shrouded by mystery, the Pedi are undoubtedly, of Sotho origin. The Sotho division is so classified principally on the linguistic grounds of similar characteristic of Sotho people (Mö nnig 1967). The Tswana Chiefdom form part of the larger group of Sotho people, while Sotho group itself is one of the three great sub-divisions of the bantu-speaking peoples situated north of the Nguni communities. In addition to Batswana or Western Sotho, the Sotho group includes the Basotho of Lesotho and the Orange Free State, to who the term Sotho has come to be more specifically the almost exclusively applied. This group some time also referred to as the southern Sotho. The third group comprises the Bapedi who have been generally referred to as the northern Sotho, with the exception of some Tswana; this group is the one that dominated in the study area within the Sekhukhune district. To wrap up the above all these tribes call themselves Sotho (Ncgongco 1979, Mö nnig 1967).

Legassick (1969) summary of the vast and complicated literature on the Sotho- Tswana oral tradition provide a frame work for the understanding of the relevant archaeological records. It is possible to establish a meaningful relationship between archaeological and historical groups and to use this relationship to clarify the early history of the Sotho-Tswana/Pedi. The Transvaal Sotho has been subdivided into a number of groups. These are the eastern Sotho, particularly the Kutswe, Pai and Pulana; the north eastern Sotho, particularly the Phalaborwa, Mmamabolo and Lobedu the northern Sotho, particularly the Kgaga, Birwa, Tlokwa and some Koni and Tau. Historical documents and Sotho oral tradition suggest that they originated from the Great Lakes in central Africa. Their migration occurred in succession of waves over many years under the leadership of king Kgalakgadi who settled in Botswana in the early 13<sup>th</sup> centuries. The next group to have arrived in the early period seems to have been the Digoya who were the first group to cross the Vaal River, little is known of their history and they were finally absorbed by the Ba-Taung tribe. The majority of the proper Sotho followed two three migration of the Ba-Rolong, Ba- Fokeng and Ba- Hurutshe.

Documents suggest that Marota (commonly called Ba-Pedi) originated from Ba- Kgatla from central Highveld near present day Rustenburg and Pretoria, an important offshoot, the Ba- Pedi is thought to have moved northeast in the mid-17<sup>th</sup> century. Another member of the cluster may be the Ba- Tlokwa. Maggs (1976) connect Ba- Tlokwa with the Pembe ruins which are situated some few kilometers south of Ntuanatsatsi hill, he further alluded that Ba- Tlokwa once built a capital called Itlholanoga in the Pilansberg near the present day Sun City; it was at a later stage that the Ba-Kgatla took over this area. The site is characterized by well-constructed stone walled complex located on top of hill; the architectural style of the stone wall has been dominated by Molokwane patterns. According to Maggs (1976) the Ba-Kgatla tribes were responsible with the construction of the stone walling while Ba-Tlokwa was responsible with the earliest occupation. According to Boeyens (2005) Tlokwa are known to have lived in the late 18<sup>th</sup> century at Marathodi site.

Oral traditions suggest that migration and settlement in the sub- continent are of course conjectural with trace of genealogies of the Ba-Rolong tribe back to 1270 and the Ba-Fokeng even to 980 AD, the Ba-Rolong began their migration at the beginning of the 15<sup>th</sup> century and towards the 16<sup>th</sup> century they were followed by two last group, the last of which was the Ba- Hurutshe who transverse the land and settle in what is now the western Transvaal. History suggest that when Mmathobele was expecting her first child the other wives of Diale (The ruler), were jealousy and they said that they could hear the child crying in her womb. Naturally this unusual event was attributed to witchcraft, and the Kgatla wanted to kill the mother and child, Diale interceded for her and the child was born normally, the child was nick-named Lellelateng (it cries inside), as the child grow older, his father, seeing that the tribe would never accept his son to attained the kingship, he instructed him to leave with his mother and followers towards the east, the group under the leadership of Thobele founded their own tribe, the Pedi. Lellelateng is generally taken as founder of the Pedi, although tradition makes no further mention of his sons or successors, whereas Thobele is accepted as the man who led the Pedi to their new home (Mö nng 1967).

According to the 19<sup>th</sup> century settlement of this region, the Sotho speaking Pedi arrived relatively late, they did however build powerful kingdom in time of Thulare 1790-1820. One of the reasons was availability of excellent pasture and good landscape. Historians suggest that in the course of their migration in and around the valley, cluster of people

from diverse origin had gradually concentrated themselves under nucleus group with various totems, *Tau, Kolobe, Kwena* and others. Smaller tribes were absorbed in to the nation, outsiders and refugees were admitted, women from neighboring clans were married into the tribe forming the Pedi stronghold state. The Pedi oral traditions suggest that Pedi chief Thulare maneuvered to the top of the ladder through his superb military tactics and became undisputed paramount chief of the region. Thulare is believed to have died in 1824, soon after the death, the whole Ba-pedi empire was crushed by the Matabele under Mzilikazi.

Four years later, Sekwati the senior living son of Thulare, established the Paramountcy of Bapedi at Phiring near Pokwani on a rocky hill which is known today as Magalis Location. By 1828 the new Pedi chief Sekwati had returned to the area, and over the next ten years rebuilt the Pedi stronghold. When the Voortrekker arrived in the Marota (Ba-Pedi) Empire King Sekwati (King Sekhukhune's father) resisted, and a famous battle was fought at Phiring in 1838, Sekwati defeated the Boer. In 1853, Sekwati moved from Phiring to Thaba Mosega, where he established a fortified village, Tjate on the eastern slope of the LuLu Mountain. The Ndzundza Ndebele, who also appear to have a long history in the area appear to have been subordinate to the Pedi up until the death of Sekwati in 1861 at this point the Ndzundza declared their independence (Esterhysen & Smith 2007).

When Sekwati died in 1862 he was succeeded by his son who came to power using military force, emerged (King Sekhukhune- named Matsebe), he acquired the name Sekhukhune as a nickname due to his outstanding role in fights against Boers. He maintained strong hold with neighboring tribes through intermarriages, it was at this time that his brother Mampuru (legitimate ruler) was forced to flee from the kingdom. During the reign of Sekhukhune he sent young men under the auspices of his headmen's to work in white farms and at the diamond mines, money earned from these employment were taxed and the taxes was used to buy guns form the Portuguese in Delagoa bay where he usually sent his subordinates for trade purposes, some of the money was used for purchasing cattle in an attempt to increases Marota's wealth.

By the 19<sup>th</sup> century the Marota Empire had grown to unite all disparate people in the area (Sekhukhune land). It was the same guns that were used in the war of resistance against the Boers and British. During the wars of resistance Sekhukhune was of the attitude that the land between the Vaal and Limpopo Rivers belongs to him and his area fall outside Pretoria's jurisdictions. Communities around the region were living harmoniously, trading

and farming it was up to the year 1826 when Mzilikazi Khumalo fled from King Shaka's rule and reaches the region devastating the tribes that were within the region including Ba-Pedi communities, fortunately the Ba-Pedi recovered the devastation. A notable event was the decimation of the Pedi at some point between 1823 and 1825, there were some dispute over who was responsible and Mzilikazi Khumalo (Ndebele) moved up into the region to revenge the Pedi and their land, Ndwandwe under Zwibe were responsible. The Pedi survivor took refuge in the Waterberg area (Esterhysen & Smith 2007).

Many wars of resistance were fought and later Sekhukhune was forced hide himself in the cave. And the European troops cut supply of food and water and Sekhukhune was forced to come out of the cave surrender, and was captured and locked in prison. It was after his release in 1882 that his brother Mampuru murdered him. During those years Mampuru and Nyabela fled and hid from Commandant General Piet Joubert. (Mapoch was the chief of the Ndzundza- Ndebele tribe) The cave where Nyabela and Mampuru were hiding was besieged by Joubert in 1882 and Nyabela was arrested and lost his chieftaincy and the land under his jurisdiction was divided amongst the white (Burgers) who participated in the siege.

#### **7.4 HISTORICAL / COLONIAL PERIOD**

Appearance of the European in the Steelpoort region is associated with the last 500 years when colonialism entered into southern Africa. The driving force into the interior was closely connected with the change from agricultural farming produce to livestock farming. The movement of Boer into the interior got underway when Wilhelm Adrien van der Stel began to issue free grazing permits in 1703. The exoduses went hand in hand with hunting expeditions into the interior which not only provided the farmers with meat, but also enable them to learn more about the resources of the hinterland. British government made its laws which undermine the freedom of the Boers. The mounting conflict between African and white stock farmers played the dominant part. This led to the general dissatisfaction and a feeling of insecurity among the Afrikaner. The frontier wars of 1834/35 caused the frontier farmers to suffer heavy losses. To aggravate matters, land prices rose sharply during the 1820 and 1830 and drought was a serious problem. These conditions

threatened the pastoral lifestyle. There was no land for the younger generations. They opted to migration in search of land and grazing in the interior.

During the great trek into the interior they were already acquainted with conditions of the interior and with the main trek routes. They got available information from travelers, hunters and missionaries. The foremost Voortrekker, Louis Tregardt and Hans van Rensburg were the pioneer of the Transvaal Lowveld left in 1835. Andries Hendrik Potgieter, the conservative founder of the Transvaal, emigrated towards the end of 1835. By 1836 the vanguard of Potgieter trek had crossed the Vaal River. When the white entered the Transvaal the plains were restricted by Africans for grazing purposes, while occupying the high altitude and mountains.

Mzilikazi, the powerful Ndebele regarded with growing suspicion the arrival of so many whites from the same direction. He then realized that such a large group of white constituted a threat to the survival of the Ndebele. The Ndebele attacked the Trekkers at Vegkop on the 16 October 1836. In January 1837 Potgiter captured Mzilikazi stronghold and drove the Ndebele far to the north. Potgieter was firmly convinced that they should seek the salvation of an independent Voortrekker state, far away from British influence.

The 18<sup>th</sup> century' s period is marked by the presence of white, where land was taken from African chiefs and redistributed to the Boers; this was followed by demarcation, subdivision, surveyed and mapped of portions of land into farms in 1880s. The first white farms were established along the rivers and tributaries, close to springs consequently the banks of River were well populated at the early stage. This development was also associated with the development of gravel roads and later towns. Other towns that emanated from these settlements were Polokwane, Marabastad, Schomansdal and Ohringstad. As a result, they possess a large corpus of information with regarding to the area and its history (Van Schalkwyk, 2011). An important factor which determines the initial settlement pattern was the desire to have access to a harbor to break the economic isolation of the Transvaal.

## **8. SITE LOCATION AND PROJECT DESCRIPTION**

The proposed study area is situated on farms Geluk 512KS, Geluk Oos 53 KS and Iron stone 847KS located directly west of Steelpoort in the vicinity of Sekhukhune, Limpopo Province.

The site is located on the following global positioning system co-ordinates (GPS S24°.50', 44. 9" & E 29°.57'.56. 6"). The proposed study area is characterized by mountain and undulating hills with the lower lying area covered by existing villages with small scale subsistence farming. A reasonable percentage of the study area is still undeveloped vacant land, possibly restricted by the topography. The study area covers approximately 3165.32 hectares of land.

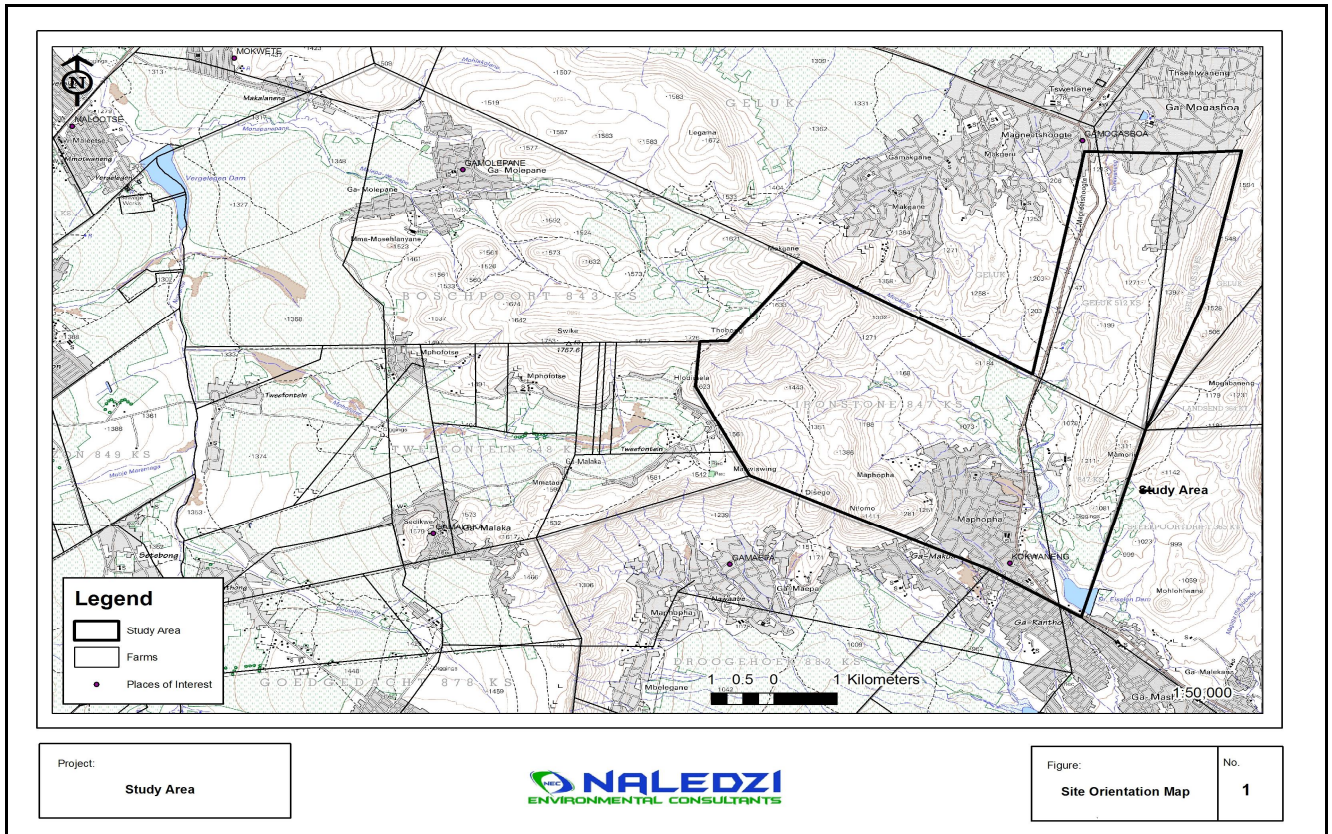
The geology and soils is dominated by ultramafic intrusive of the lower critical and main zones of the eastern Rustenburg layered suite of the Bushveld Igneous complex (Vaalian) There sub suites exist and consist of Croydon, Dwars river and Dsjate. The above mentioned sub suites are dominated by Norite, Pyroxenite, Anorthosite and the gabbro and are characterized by local intrusion of Magnetite, diorite, dunite, bronitite and harzburgite. Soil are predominately shallow, rocky and clayey dominated by Glenrosa and Mispah soil form are common with lime content in the low lying area. Rocky areas without soil are common on steep slope. Section of the study area is characterized by Epidal freely drained soil dominated by Hutton, Bonheim and Steendal soil forms. The Shakwaneng River is feed by several tributaries most of which originates from the mountain, this main river flows north to south through the project area that constitute the lower lying area on site. Both river banks and areas in close proximity to the stream is characterized by magnetite rocky outcrops. The study area' s geology has given rise to Sekhukhune Mountain Bushveld Complex which stretches along the mountainous and undulating hills above the lowlands of Sekhukhune Plains Bushveld. This type of vegetation stretches towards the northeast engulfing the steel port river (Acocks 1975; Mucina & Rutherford, 2006).

The vegetation is characterized by open to closed Microphyllous and broad-leaved Savanna on the hills and mountain slopes that form a concentric belt parallel to the northeastern escarpment. Open bushveld often associated with ultramafic soil on the southern aspect. The bushveld on ultramafic soils contain a high diversity of edaphic specialist. Bushveld of mountain slope are generally taller than in the valleys with a well-

developed herbs layer. Bush veld of the valley and dry northern aspects are usually dense, like thicket, with herb layers comprising many short lived perennials. Dry habitats contain a number of species with underground storage organs. Both man – made and natural erosion dongas occur on foot slope of clay rich in heavy metal. Some of the dominant plant taxa includes *Acacia negrenses*, *Acacia Senegal*, *Combretum Apiculatum*, *Combrutum Molle*, *Tereminalia prunioides*, *Ziziphus mucronata*, *Boscia Albitrunca*, *Comiphora Mollis*, *Croton Gratissimus*, *Pappea Capensis*, *Dichrostachys Cineria* with succulents such as *Aloe Marlothii* sub, identifiably grass species includes, *Heteropogon Contortus*, *Panicum Maximum*, *Themeda triandra*, *Aristida transvaaalensis* etc. (Acocks 1975; Mucina & Rutherford, 2006).

The overall mining activities to be undertaken will be an open pit, dry mining process where raw ore bodies (vanadium bearing titaniferous magnetite rocks) will be extracted from the surface. The ore body / mineral resource are close to surface and the maximum mining depth is expected to the 20m. The applicable mining method is thus surface removal consisting of strip mining and simultaneous rehabilitation. The ore body consists of large fault blocks which require blasting and drilling to minimise the rock plate sizes. Once the blocks are blasted and drilled, the broken ore would be excavated and loaded onto dump trucks and transported to the product stockpile (Run of Mine-ROM). The ROM will be crushed and screened (for size reduction) before being transported to Vanchem in Witbank. The anticipated mine production would be 240 000 tons per annum of ore in its first 5 years and a rump up to 700 000 tons per annum by year 6. The mine life expectance is 30 years.





**Figure 1:** Topographical Map of the study area



**Figure 2:** View of the proposed study area adopted from Google Earth program



**Figure 3:** View of the proposed study area covered by natural vegetation.



**Figure 4:** View of the River valley dominated by magnetite rocky outcrop



**Figure 5:** Recently excavated trench earmarked to channel water from the Shakwaneng River to water the nearby garden. The second photo shows an earth dam constructed to store water inside a garden.



**Figure 6:** Illegal sand mining activities on one of the existing non-perennial stream.

## 9. ASSESSMENT OF SITES AND FINDS

This section contains the results of the heritage site/find assessment. The phase 1 heritage scoping assessment program as required in terms of the section 38 of the National Heritage Resource Act (Act 25 of 1999) done for the proposed iron and vanadium ore mine at Sekhukhune area, Limpopo Province:

### Identified sites

Sites	GPS Co-ordinates	Sites significance	Remarks
1. Stone wall site with a cairn of stones A possible grave	S24°.48', 02.04" E 29°.58'.35.01"	medium	Could be affected by the proposed development
Remains of a stone wall structures	S24°.48', 02.03" E 29°.58'.40.02"	medium	Could be affected by the proposed development
2. Cemetery 1 (Ga-Mogashoa village)	S24°.48', 04.29" E 29°.59'.17.89"	High	Within built up areas.
3. Cemetery 2 (Makgane village)	S24°.48', 23.17" E 29°.57'.06.42"	High	Within built up areas.
4. Cemetery 3 (Maphopha village)	S24°.50', 39.85" E 29°.57'.03.81"	High	Within built up areas.
5. Cemetery 4 (Maphopha village)	S24°.51', 16.57" E 29°.58'.14.39"	High	Within built up areas.

- ❖ **(Site 1).** A 30 meters long stone wall with half a meter section has been georeferenced east of the main tarred road (From Jane furse to Steelpoort Bridge) west of the Shakwaneng River. The site is located just below a soccer field, and could be visible from the main road indicated by Sisal Plant. A cairn of stones was noticed and was marked as a possible grave (GPS S24°.48', 02.04" and E 29°.58'.35.01").



**Figure 7:** The site has been indicated by *Ageva Sisalana*, there is a possible grave indicated by cairn of stones in the vicinity.

- ❖ **(Site 2).** The site is located on the western bank of Shakwaneng River, the area is characterized by parked rectangular low stone wall with approximately 13 half meters parked stone wall pillars. Evidence of the use of cement mixture was noted. The site is characterized by flat section of the river bed. The site seem to have been used as a private gardening project (GPS S S24°.48', 02.03" and E 29°.58'.40.02").



**Figure 8:** A stone wall site alongside the River bank, the area seem to have been used for domestic cultivation.

**NB:** All cemeteries area located within or on the outskirts of the built up areas, and are characterized by more than hundred burial grounds most of which have been indicated by granite tombstones with headrests while others have been indicated by parked stones as grave dressings.



**Figure 9:** View of an existing cemetery at Maphopha village, the site is within the built-up areas

## **10. CONCLUSION AND RECOMMENDATIONS**

It is possible that these stone wall sites may be affected by the proposed mining activities. These sites must be avoided by the Mining activities. No fixed prescriptions exist for safe distance that has to be maintained between the stone walled and proposed activities. However the above mitigations should become un-avoidable, Phase II investigations (Mapping is required) can only be conducted by archaeologists accredited with the Association for southern African Professional Archaeologist (ASAPA).

In case of the Built up areas with a associated cemeteries it is strongly recommended that a 500 meters restriction to mining is strongly recommended to safe guard the populated areas and the creation of safety or buffer zones for drilling and blasting which include fly rock and ground vibration that could end up damaging people' s houses.

The objective of the AIA is to limit primary and secondary impacts on archaeological and cultural heritage sites in the path of the proposed mixed development site. The study informs and makes recommendations for any further mitigation that should take place before mining activities proceeds. In the event of any unexpected heritage feature being encountered during mining phase. Immediate reporting is very much crucial to relevant heritage authorities of any heritage resource discovered during Mining process. This recommendation should also be incorporated into the Environmental Management Plan for the proposed project.

Should the above mentioned recommendations be viable to the developer there are no objections to the proposed project and we recommend to the Provincial Heritage Resources- or South African Heritage Resource Agency to approve the project as planned.

## 11. GOOGLE EARTH MAP OF THE STUDY AREA



**Figure 10:** View of the study area adopted from a Google Earth program showing area with heritage significance



**PROFESSIONAL DECLARATION**

I, the undersigned Mr. Ndivhuho Eric Mathoho hereby declare that I am a Professional archaeologist accredited with the Association for South African Professional Archaeologists (ASAPA) and that Millennium Heritage Group (Pty) Ltd is an independent Consultants with no association or with no any other interest what so ever with any institution, organization, or whatever and that the remuneration earned from consulting work constitute the basis of company livelihood and income.

Mr. Mathoho Ndivhuho Eric



.....  
Archaeologists and Heritage Consultants for Millennium Heritage Group (Pty) Ltd  
ASAPA Member

## 12. REFERENCE

- Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No.40. Pretoria: Botanical Research Institute.
- Deacon, J. 1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. *South African Association of Archaeology*. No. 49,
- Esterhuysen, A., 2007. The Earlier Stone Age. In Bonner, P., Esterhuysen, A., Jenkins, T. (eds.): *A Search for Origins: Science, History and South Africa's (Cradle of Humankind)*, Johannesburg: Wits University Press. Pg 110 -121.
- Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik
- Huffman, T. N., 2007. The Early Iron Age at Broederstroom and around the 'Cradle of humankind'. In Bonner, P., Esterhuysen, A., Jenkins, T. (eds.): *A Search for Origins: Science, History and South Africa's (Cradle of Humankind)* Johannesburg: Wits University Press. Pg 148 -161.
- Seliane, M. 2009. Cultural Heritage Impact Assessment of the proposed WRDM Multi Purpose Community Centre at portion 26 of the farm Kromdraai 520JQ, unpublished report.
- Mason, R.J. 1962. *Prehistory of the Transvaal*. Johannesburg: Witwatersrand University Press.
- Maggs, T. 1984. The Iron Age south of the Zambezi, in Klein, R. G 1984. *South African Prehistory and Paleoenvironments*. A.A. Balkema/Rotterdam
- Maggs, T. 1986. The early History of the Black people in southern Africa, in Cameron, T. & S.B. Spies. 1986. *An illustrated history of south Africa*, Jonathan Ball Publisher, Johannesburg.
- Mitchell, P. 2002. *The archaeology of South Africa*. Cambridge: Cambridge University Press.

Mitchell, P. & G. Whitelaw. 2005. The Archaeology of southernmost Africa from c.2000 BP to the Early 1800s: A review of Recent Research: *The journal of African History, Vol 46, No2*, pp 209-241.

Pearce, D., 2007. Rock Engraving in the Magaliesberg Valley. In Bonner, P., Esterhuysen, A., Jenkins, T. (eds.): *A Search for Origins: Science, History and South Africa's (Cradle of Humankind)*. Johannesburg: Wits University Press. Pg136 - 139.

Philipson, D.W. 1976. The Early Iron Age in eastern and southern Africa critical re appraisal. *Azania* 11.1-23

Philipson, D.W. 1977. *The later Prehistory of Eastern and Southern Africa*. Heinemann Publication, London.

Philipson, D.W. 1993. *African archaeology*, Cambridge University Press

Philipson, D.W. 2005. *African archaeology*, Cambridge: 3<sup>rd</sup> edition, Cambridge University Press

SAHRA, 2005. *Minimum Standards for the Archaeological and the Palaeontological Components of Impact Assessment Reports*, Draft version 1.4.

Tobias. P.V 1985. Hominid evolution- past present and future, New York

Tobias. P.V. 1986. The last million years in southern Africa. In Cameron. T. & S.B. Spies. 1986. An illustrated history of South Africa, Jonathan Ball Publisher, Johannesburg.

Tobias. P.V. 1986. The dawn of the Human family in Africa. In Cameron. T. & S.B. Spies. 1986. An illustrated history of South Africa, Jonathan Ball Publisher, Johannesburg

Van Schalkwyk, J. A. 2006. *Investigation of archaeological features in site A of the proposed Pumped Storage Power Scheme, Lydenburg district, Mpumalanga*. Unpublished report 2006KH78. Pretoria: National Cultural history museum.

Van Warmelo, N. J. 1935. *Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

Wadley. L., 2007. The Middle Stone Age and Later Stone Age. In Bonner, P., Esterhuysen, A., Jenkins, T. (eds.): *A Search for Origins: Science, History and South Africa's 'Cradle of Humankind'*. Johannesburg: Wits University Press. Pg122 - 135.Strategic