

Prepared for:

**JMA CONSULTING (PTY) LTD
EVRAZ VAMETCO OPERATION**

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
THE EVRAZ VAMETCO OPERATION NEAR MMAKAU AND
MADIBENG IN THE BANKEVELD IN THE NORTH-WEST
PROVINCE**

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DECLARATION OF INDEPENDENCE

I, Julius Pistorius, declare that:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the National Environmental Management Act (107 of 1998), the Environmental Impact Assessment Regulations of 2010, and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.

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Signature of the environmental practitioner:

I Not applicable
Name of company:

20 August 2012
Date:

[Signature]
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EXECUTIVE SUMMARY

This Phase I HIA study for the Evraz Vametco operation in the central Bankeveld in the Limpopo Province was done according to Section 38 of the National Heritage Resources Act (No 25 of 1999). The aims with the Phase I HIA study were the following, namely:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To determine whether such remains will be affected by the Evraz Vametco operation and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the mine's operation.

The Phase I HIA for the Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (Act No 25 of 1999):

- Historical remains consisting of a Historical House.
- Stone walled sites dating from the Late Iron Age.
- A graveyard which dates from the Historical Period and a graveyard which is still used.

These heritage resources were geo-referenced, mapped and their significance was determined (Figure 2, Tables 1-3).

Mitigation measures are proposed should these heritage resources be affected by the Evraz Vametco operation.

The significance of the heritage resources

The significance of the heritage resources is outlined according to stipulations derived from the National Heritage Resources Act (No 25 of 1999) as well as from criteria relating to each of the types and ranges of heritage resources that are scrutinized.

Historical remains

All remains older than sixty years are protected by Section 34 and Section 38 of the National Heritage Resources Act (No 25 of 1999).

The Historical House (HH01) may be as old as sixty years but has low heritage significance when considering criteria such as the following:

- The house is in a severe state of dilapidation.
- Very little can be learned from this remains due to its derelict state whilst it also have no further (e.g. educational, research) value.
- This kind of historical remains dating from the last sixty years or longer are relatively common in the area.

Late Iron Age remains

All Late Iron Age remains such as the stone walled sites qualify as archaeological sites and therefore are protected by Section 35 and Section 38 of the National Heritage Resources Act (No 25 of 1999).

However, the fourteen occurrences (possible sites) that were documented vary with regard to their significance as some of these sites have been damaged in the past whilst others are pristine. The level of significance for the sites which are still pristine (LIA01, LIA02) can be described as high whilst those sites that have been affected (LIA03 to LIA14) can be classified as medium to high due to the following criteria:

- The sites have research and educational value.
- The investigation of the sites can contribute to a better understanding of the regional Tswana pre-history as the sites fall within the sphere of the influence of the Kgatla and Bakwena Bamôgôpa two clans who were subjugated by Mazilikazi's Ndebele during 1827 to 1832.
- The sites are located in close proximity of Mazilikazi's settlement complex from where he controlled this part of the Bankeveld during the early nineteenth century.

Graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National

Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Possible impact on the heritage resources

It is possible that the heritage sources may be affected (destroyed) during operations of the mine such as the extension of the open cast pit (GY02) or the expansion of the waste rock dumps (GY01 and LIA01 to LIA14). Therefore, the following mitigation measures have to be undertaken if the heritage resources may be affected by mining operations in the future.

Mitigating the heritage resources

Historical remains

The Historical House (HH01) has low significance and needs no mitigation measures. This structure can be destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA).

Late Iron Age remains

The Late Iron Age remains have to be investigated by an archaeologist who is accredited with the Association for Southern African Professional Archaeologists (ASAPA) before these remains can be destroyed. The archaeologist has to obtain a permit from SAHRA in order to conduct a Phase II archaeological investigation of these sites. The Phase II investigation will entail the documentation and excavation of these remains, the results of which must be published in a report to SAHRA. After the Phase II investigation has been completed the archaeologist or developer must obtain a demolition permit from SAHRA which would authorise the demolishing of these remains.

Graveyards

The graveyards must be managed and mitigated by means of the following strategies, namely:

- By establishing secure fences or walls around these features. Whilst GY01 is demarcated with a new fence which is fitted with an entrance gate GY02 is

unprotected as the fence around this feature has fallen into disrepair. Considering the busy nature of the area where this graveyard is located - near the edge of the open cast mine where trucks and other vehicles are used in the open pit's operation - accidental damage to the graveyard may occur at any time. It also seems as if no controlled access to this graveyard is in place. This may have repercussions with regard to the safety of visitors who must have safe and controlled access to the graveyards

If the graveyards existence may be affected by the expansion of the rock waste dumps or the expansion of the open pit these features have to be mitigated by means of the following strategy:

- The exhumation and relocation of the graveyards. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

General

It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in clumps of vegetation while others may lie below the surface of the earth and may only be exposed during development activities. If any heritage resources of significance is exposed during the Evraz Vametco operation the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

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1 INTRODUCTION

This document contains the report for a Phase I Heritage Impact Assessment (HIA) study which was done for the Evraz Vametco operation in the Central Bankeveld in the North-West Province.

Focused archaeological research has been conducted in the North-West Province for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as the recording of rock art and historical sites. The North-West Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the North-West Province of South Africa therefore form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate', as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), do occur across the North-West Province (see Box 1, next page).

Box 1: Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act (Act 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate:

- a. Places, buildings structures and equipment of cultural significance;
- b. Places to which oral traditions are attached or which are associated with living heritage;
- c. Historical settlements and townscapes;
- d. Landscapes and natural features of cultural significance;
- e. Geological sites of scientific or cultural importance;
- f. Archaeological and palaeontological sites;
- g. Graves and burial grounds including-
 - i. Ancestral graves;
 - ii. Royal graves and graves of traditional leaders;
 - iii. Graves of victims of conflict;
 - iv. Graves of individuals designated by the Minister by notice in the Gazette;
 - v. Historical graves and cemeteries; and
 - vi. Other human remains which are not covered in terms of the Human Tissue Act (Act 65 of 1983);
- h. Sites of significance relating to the history of slavery in South Africa;
- i. Moveable objects, including -
 - i. Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, material, meteorites and rare geological specimens;
 - ii. Objects to which oral traditions are attached or which are associated with living heritage;
 - iii. Ethnographic art and objects;
 - iv. Military objects;
 - v. Objects of decorative or fine art;
 - vi. Objects of scientific or technological interest; and
 - vii. Books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act (Act 43 of 1996).

The National Heritage Resources Act (Act 25 of 1999, Sec 3) also distinguishes nine criteria for a place and/or object to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

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

2 TERMS OF REFERENCE

JMA Consulting (Pty) Ltd is responsible for compiling an Environmental Impact Assessment (EIA) study for the Evraz Vametco operation near Mmakau and Madibeng in the North West Province and commissioned the author to undertake a Phase I HIA study for this operation.

The aims with the Phase I HIA study were the following, namely:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To determine whether such remains will be affected by the Evraz Vametco operation and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the mine's operation.

3 METHODOLOGY

The Phase I HIA study was conducted by means of the following:

- Considering and evaluating data collected during earlier surveys for various developers in the Central Bankeveld (see 'Select Bibliography', Part 9).
- Surveying literature relating to the pre-historical and historical context of the Central Bankeveld.
- Surveying with a vehicle and on foot sensitive (unaffected) spots in the Project Area.
- Synthesising the information obtained from the activities outlined above in this report.

3.1 Earlier data

A number of Phase I HIA studies were done for various developers in the Central Bankeveld during the past two decades the results of which were published in several reports (see 'Select Bibliography', Part 9).

3.2 Literature survey and desktop study

Literature relating to the pre-historical and the historical unfolding of the Central Bankeveld was reviewed. This review focused primarily on the pre-history as well as the Late Iron Age and Historical Period in the Central Bankeveld.

The literature research is important as it contextualises the pre-historical and historical background of the Central Bankeveld which again contributes to a better understanding of the identity and meaning of heritage sites which occur in and near the Project Area (see Part 5, 'Contextualising the Project Area' and Part 9, 'Select Bibliography').

In addition, the Project Area was also studied by means of maps on which it appears (2527DA Bapong, 1:50 000 topographical map; 2526 Rustenburg 1: 250 000 map).

The desktop study also involved consulting heritage data banks. Databases kept and maintained at institutions such as the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources had been identified during earlier archaeological surveys in the Project Area.

3.3 Fieldwork

The Project Area was surveyed with a vehicle whilst sensitive areas such as pristine spots were surveyed by means of a pedestrian survey. The aim with the fieldwork was to geo-reference, describe and photograph heritage resources in these critical areas.

3.4 Mapping heritage resources

Heritage resources that were identified in the Project Area were geo-referenced using a GPS instrument and the sites were thereafter mapped in Arch View.

3.5 Significance rating of heritage resources

The desktop and field information were critically examined in order to assess the potential direct and indirect impacts of the Vametco Project on identified heritage resources.

This analysis was undertaken using the generic significance rating criteria which are common to all studies being done for environmental impact assessment studies, namely:

Extent (Spatial Scale) of the Impact

The extent of the impact refers to its spatial scale (not its magnitude)

Rating	Descriptor
Site	Limited to within Project Area or local surrounds
Local	Local Municipality
District	Central Bankeveld
Provincial	North West Province
National	South Africa
International	Global outside of South Africa

Duration and Reversibility

Duration refer to the period of time over which the impact occurs

Rating	Descriptor
Temporary	Can be reversed
Short term	0 – 5 years
Medium term	5 – 15 years
Long term	> 15 years, where the impact will cease after the operational life of the borrow-pits, either because of natural processes or human intervention
Permanent	Irreversible

Intensity (or Magnitude)

Intensity refers to whether the impact is destructive or benign.

Rating	Descriptor
Low	Where the impact affects the environment in such a way that the natural, social and cultural functions are not affected
Medium	Where the environment is altered but the natural, social and cultural functions and processes continue, albeit in a modified way

High	Where the natural, social or cultural functions are altered to the extent that they will temporarily or permanently cease
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Probability

Probability refers to the likelihood of the impact occurring.

Rating	Descriptor
Low	Where the likelihood of the impact occurring is very low, either because of design or because of historical experience of such impacts
Medium	Where there is a moderate likelihood of the impact occurring
High	Where it is very likely that the impact will occur
Definite	Where the impact will occur, without question

Significance

The significance of impacts is determined through a synthesis of the previous ratings, including spatial scale, duration, intensity and probability.

Rating	Descriptor
Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural and economic activities of communities can continue unchanged. In the case of beneficial impacts, alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming. Impacts with low significance ratings will not influence the decision about the project
Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation

	is both feasible and fairly easily possible. Social, cultural and economic activities of communities are changed, but can be continued (albeit in a different form). Modification of the project design or alternative action may be required. In the case of beneficial impacts, other means of achieving this benefit are about equal in time, cost and effort. Impacts with medium significance ratings will have an influence on the decision unless mitigated.
High	Impact is of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or some combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt. In the case of beneficial impacts, the impact is of a substantial order within the bounds of impacts that could occur. Impact with high significance ratings will have an influence on the decision regardless of any mitigation.

3.6 Limitations of the study

It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Evraz Vametco operation the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an

archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

3.7 Some remarks on terminology

Terms that may be used in this report are briefly outlined below:

- **Conservation:** The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.
- **Cultural resource management:** A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- **Cultural resources:** A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.

- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the 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 lifestyles of the people or groups of people of South Africa.
- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the Historical Period.
- Maintenance: Keeping something in good health or repair.
- 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 Impala Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.

- Recent past: Refers to the 20th 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.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.
- Stone Age: Refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 300 years ago).
- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.

- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Impala Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to plan).
- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in any given Impala Project Area (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).
- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

4 THE PROJECT AREA

4.1 Location

The Evraz Vametco operation is located on the farm Uitvalgrond 431 directly to the north of the series of norite hills which run from Onderstepoort near Pretoria in the east to the Pilanesberg in the west. This operation is situated on level ground near the villages of Mmakau and Mothutlung which is located along the norite hills direct to the south of the mine and approximately five kilometres to the east of the town of Madibeng (formerly known as Brits). The Project Area falls under the Madibeng Local Municipality in the Bojanala Platinum District in the North-West Province (Bapong 2527DA; 1: 50 000 and Rustenburg 2526 1:250 000 map).

4.2 Within a cultural landscape

The Project Area falls within a regional cultural landscape which houses numerous Late Iron Age settlements which are associated with the ancestors of the Tswana and the Ndebele. This cultural landscape is an elongated swath of land stretching from Rustenburg in the west to Pretoria in the east and which is sandwiched between the norite hills in the north and the Magaliesberg in the south. The norite hills are composed of numerous large mountains and smaller kopjes and knolls which are covered with stone walled villages dating from the Late Iron Age. These settlements are the remnants of the predecessors of many of the Tswana speaking people who still live in this area today. Ndebele communities also occupied this mountain range during the Late Iron Age.

The Project Area therefore is part of a cultural landscape which warrants a brief description to demonstrate its place in the North-West's cultural history. Consequently, contextual evidence which illuminates the cultural-historical background of the Project Area is briefly outlined in this report (see Part 5, 'Contextualising the Project Area').

4.3 The nature of the Project Area

The Project Area is not a pristine piece of land any longer as the landscape has been transformed by mining and mining related developmental activities during the last three decades. This is also true for the larger area which has been affected by granite mining which is older than fifty years and which had a severe impact on the norite hills in the region.



Figure 1- The Project Area incorporates a part of the cultural-historical norite series of hills which runs between Pretoria and the Pilanesberg where large numbers of stone walled sites dating from the Late Iron Age occur. These sites were occupied by the ancestors of the Tswana and Ndebele. (Note stone walls on rock surfaces).

Residential developments such as the expansion of Mmakau, Motuthlung and Damonsville (to the south of the Project Area) have occurred to the detriment of many stone walled settlements as modern homesteads along the foot of the norite hills have ruined many of these sites. Power lines erected by Eskom also cross several of these stone walled sites whilst pylons, on which power line were strung, were constructed in some of these stone walled sites.

Local residents also have destroyed stone walled sites as they have turned some of these settlements into homesteads whilst enclosures have been adapted to be used as cattle pens. However, parts of the series of norite hills are still pristine and clusters of stone walled sites which have not been affected by these developments can still be found.



Figure 2- Stone walled sites near Motuthlung and Mmakau which have been affected by granite mining activities as well as the construction of power lines (above).

5 CONTEXTUALISING THE PROJECT AREA

5.1 The Central Bankeveld

The Project Area is located in the Central Bankeveld of the North-West Province of South Africa. The Bankeveld is a narrow strip of land between the northern bushveldt savannah and the centrally situated Highveld. The Central Bankeveld with its numerous centuries-old remains of ancient Tswana spheres of influence is important to this report.

The Central Bankeveld is covered by older grabbo penetrated by younger volcanic magma which formed the series and chains of pyramid-shaped norite hills from the Pilanesberg in the north-west to Ondestepoort in the east. These hills, as part of the Magaliesberg valley, represent a unique ecozone characterised by grassveld, savannah veld and near wooded valleys. The region has abundant surface water supplies. The Pienaar, the Moretele, the Hex and the Apies Rivers all drain their waters into the Crocodile River.

5.2 Pre-historical context

The Project Area is located to the north of the Magaliesberg in an area which is known for its rich and diverse range of heritage resources. Stone Age sites are scattered along the Magaliesberg and are also found in caves and rock shelters in the mountain. Rock engravings are located further towards Maanhaarrand and Rustenburg in the west. The most abundant heritage, however, are those that date from the Late Iron Age and which are associated with the numerous Tswana chiefdoms who occupied this region during the last four centuries.

The interaction between the climate, geology, topography, and the fauna and flora of the Central Bankeveld established a milieu in which the first Tswana found a suitable living environment in order to practise herding, agriculture, metal working and trading. It was here that their chiefdoms flourished during AD1600 to AD1840.

The settlements of these early Tswana chiefdoms are characterised by an impressive and elaborate stone-built tradition. Hundreds and perhaps thousands of sites were built along the bases of the norite hills running between Onderstepoort and the Pilanesberg. The most formidable of these chiefdoms were the Kwena Môngôpa, Kwena Môngale (Bapô), Bakgatla and Fokeng. Further to the west, closer to Rustenburg was the Fôkeng chiefdom while several Kgatla spheres of influence emerged further to the west near Brits. The Kgatla were subjugated by Mzilikazi and were used as labourers to build one of the Ndebele's villages, probably known as emHlalandlela.

The Bapô, a people whose earliest ancestors were descended from the Amambô Nguni from Kwa Zulu/Natal, arrived in the Magaliesberg during the 16th or 17th centuries. One of their capitals was Tlhôngôkgôlô (Wolhuterskop). Several of the chiefs of this clan were known by the name of Môngale. The name of the Magalies Mountains (Magaliesberg) was derived from the name Môngale.

Numerous *difaqane* wars were fought during the last quarter of the 18th century and during the first quarter of the 19th century in the Central Bankeveld. These wars led to the displacement of large numbers of Tswana in the Bankeveld. The *difaqane* wars were caused by the Ndebele (Matabele) of Mzilikazi who arrived from the Vaal River region to occupy the Bankeveld in August 1827. The Ndebele destroyed the Kwena Môngôpa, the Kgatla and what had remained of the Bapô after an earlier defeat by the Pedi of Thulare. These wars exacerbated the havoc started earlier in the Bankeveld and gradually became a characteristic feature of historical events in this region during the early 19th century.

The Ndebele established several settlement complexes in the Central Bankeveld from whence they maintained their grip on the indigenous population. Four of these Zulu/Nguni residences (*imisi*) and military kraals (*amakhanda*) have been discovered during the course of earlier archaeological surveys.

Internal strife between the various Tswana chiefdoms also seems to have been on the increase from the latter half of the 18th century onwards. Paternal relatives fought against each other to attain the chieftaincy of the various Tswana chiefdoms. Succession disputes also led to the splintering of the existing chiefdoms into a growing number of independent spheres of influence in the Bankeveld.

During the early 19th century travellers, traders and missionaries visited the Central Bankeveld where they encountered the devastated Tswana chiefdoms. They also mentioned that numerous Tswana tribes were displaced. These travellers included the traders Robert Schoon and William McLuckie in August 1829. They were soon followed by the missionary Robert Moffat who visited Mzilikazi in an *umuzi* near what is today Pretoria. In June 1835 Charles Bell and other members of Andrew Smith's expedition visited a Ndebele village near Rustenburg which Bell subsequently painted. One year later, in December 1836, Cornwallis Harris also visited the Central Bankeveld where he painted emHlalandlela near Madibend (Brits) and the Project Area.

The Bankeveld was rich in fauna which attracted the Griqua and the first white hunters to the region. Ivory was plentiful, with herds of elephants roaming the area. Ivory and the skins of the wide variety of fauna were sought after as precious trade commodities. Although the Tswana hunted the fauna of the Bankeveld, they were more renowned as agriculturists and cattle herders than as hunters.

Complex causes led to the unfolding of the numerous Tswana chiefdoms and their spheres of influence throughout the Bankeveld during the last decades of the 18th century and during the first decades of the 19th century. These causes were

multidimensional and included the ecological potential of the region, the social and political formation and expansion of different spheres of influence, the establishment of short and long distance trade relations and local and regional wars. These causes and historical events were complex and are not fully recorded in oral traditions or in any other records.

5.3 Historical context

Some of the earliest Voortrekkers who moved across the Magaliesberg in the early 19th century established themselves on the farms Kafferskraal and Witpensfontein (today Rustenburg) and Schaapkraal to the west of the Project Area. Since the second half of the 19th century, farmers and workers have occupied the Rustenburg District (including the Mooinooi, Marikana, Hartebeespoort and Madibeng areas). Tobacco and citrus farming, together with cattle herding, became a subsistence pattern that has lasted to this day. Old farm homesteads, agricultural implements and other infrastructure such as tobacco drying sheds may still exist on farms in the larger area.

During the Anglo Transvaal Boer War (AD1899-AD1902) British blockhouses were built along the ridge of the Magaliesburg, from Pretoria in the east to Rustenburg in the west. Several of these structures are located in Kommandonek and Pampoennek in the Magaliesberg, to the south of the Project Area.

After the discovery of the Merensky Reef in 1929, the economy of the area was gradually changed from farming into platinum and chrome mining. What started as small scale mining activities north of the Magaliesberg during the 20th century was soon eclipsed by the rise of the platinum mining complex near Rustenburg. The discovery of the Merensky Reef and the accompanying platinum boom was soon followed by the establishment of numerous chrome and granite mines in the North-West.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 Types and ranges of heritage resources

The Phase I HIA for the Eskom Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (Act No 25 of 1999):

- Historical remains consisting of a Historical House.
- Stone walled sites dating from the Late Iron Age.
- A graveyard which dates from the Historical Period and a graveyard which is still used.

These heritage resources were geo-referenced, mapped and their significance was determined (Figure 3, Tables 1-3).

Mitigation measures are proposed should these heritage resources be affected by future mining developmental activities.

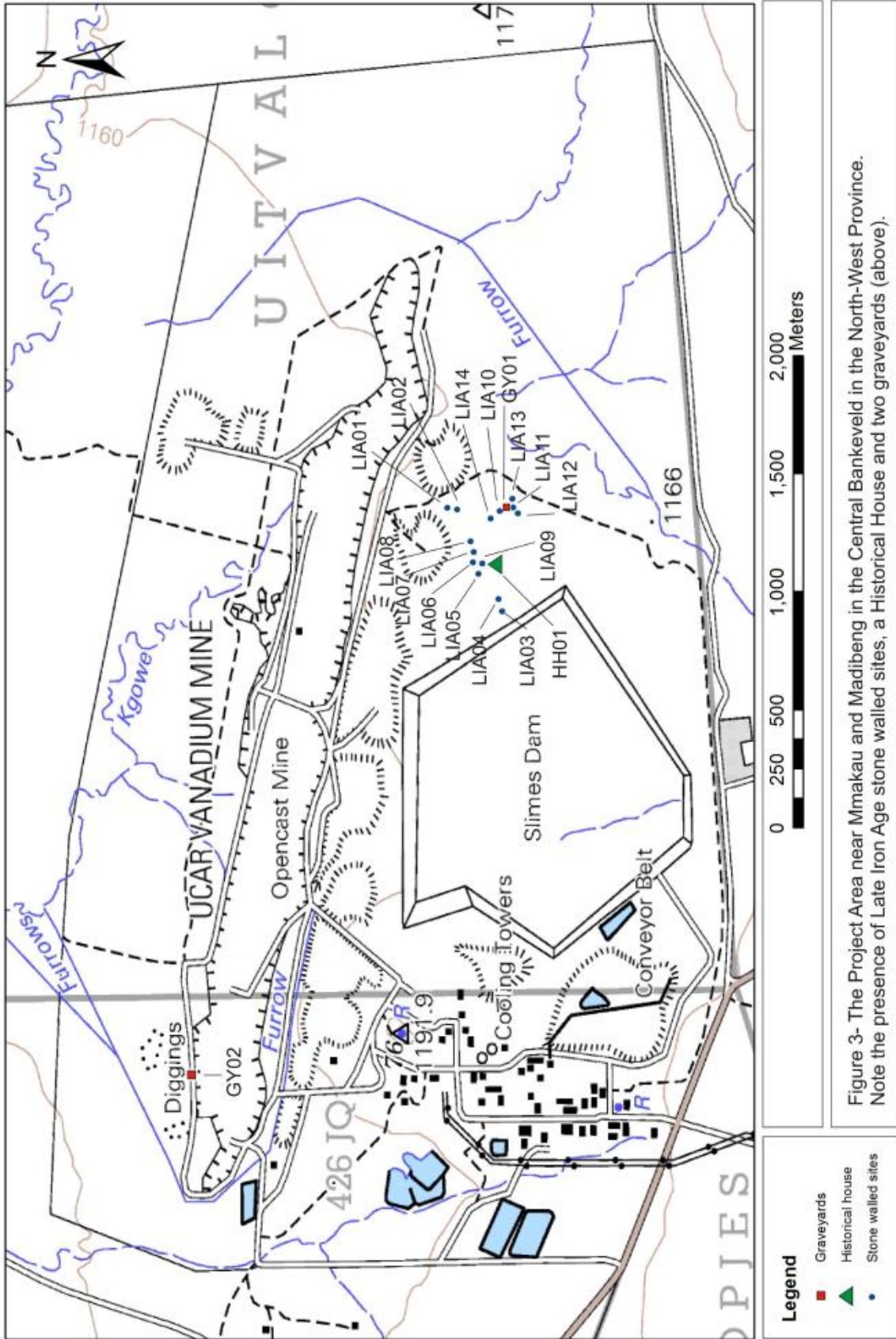


Figure 3- The Project Area near Mmakau and Madibeng in the Central Bankenveld in the North-West Province. Note the presence of Late Iron Age stone walled sites, a Historical House and two graveyards (above).

6.2 Historical remains

Historical remains occur between some of the stone walled sites. These remains comprise of mud dwellings which have disintegrated whilst it is possible that some of the enclosures (which have been used as stock enclosures in the past) may have been used for this purpose again, but during the more recent past.

The historical remains are not always clearly distinguishable from the Late Iron Age remains as both types of remains, from different time periods, occur together in a limited space whilst both have been disturbed during the more recent past.



Figure 4- HH01 was constructed with stone and mud and is located in the midst of a Late Iron Age stone walled site in the Project Area (above).

Only the remains of a Historical House (HH01) can still be recognised although this structure is in a dilapidated state. HH01 is a rectangular structure which was constructed with stone and mud and is located in the midst of stone walled sites next to a dirt road.

6.3 Stone walled sites

A number of stone walled sites occur in a patch with bush in the eastern part of the Project Area (LIA01 to LIA14). The majority of these sites have been affected by development activities in the past. It is possible that even more stone walled sites may have existed along the series of low rising norite knolls and protrusions which used to exist in this part of the Project Area.



Figure 5- One of several stone walled sites in a clump of bush in the eastern part of the Project Area (above).

It seems as if all the stone walled sites represent the typical Tswana village or *kgoro*. Consequently, the stone walled sites are composed of outer scalloped walls which encircle centrally located cattle enclosures. Whilst the scallops serve as the various dwellings (*malapa*) which were occupied by different family groups (*masika*) the enclosures were used to shelter large and small stock and also as the *kgotla* area which held the formal court and an area where men spend some of their leisure time.



Figure 6- Remains of stone walled sites which have been partly destroyed as a result of developmental activities in the eastern part of the Project Area (above).



Figure 7- Site LIA01 is a stone walled site which is in a pristine condition in a clump of bush in the eastern part of the Project Area (above).

6.4 Graveyards

Two graveyards occur in the Project Area

6.4.1 Graveyard 01

GY01 is situated in the midst of a number of stone walled sites. It holds approximately seventeen graves most of which are fitted with granite head stones.

Inscriptions on some of the headstones read as follow:

- 'Maredupe Elizabeth Poee 19120419 19980123 Robala ka kagiso Ps 51'
- 'Dorothea Masele Poee Pentikost Holinest Church'
- 'Our beloved father Molemi Petrus Poee 14-02-1911 25-06-1965 Remembered by his wife and children R.I.P.'
- 'Onnica Lefefe Diale 02-04-1964 07-07-65'



Figure 8- GY01 is located in the midst of a number of stone walled sites in the Project Area (above).

6.4.2 Graveyard 02

GY02 is situated on the north-western edge of the open cast mining area. This is a large graveyard with several hundreds of graves most of which are decorated.

Inscriptions on some of the headstones read as follow:

- ‘Jacob Ramokhele Chengwe Robala ka kagiso’
- ‘Abinar Ramotsumi Chengwe Died 8-8-1963 Ntathemogolo Robala ka kagiso’

GY02 is still in use.



Figure 9- GY02 is located on the north-western edge of the open cast mining area in the Project Area and is still in use (above).

Stone walled sites Late Iron Age (LIA)	Coordinates	Significance	Pristine/Impacted
LIA01	25° 34.575'S 27° 53.947'E	High	Pristine
LIA02	25° 34.598'S 27° 53.943'E	High	Pristine
LIA03	25° 34.701'S 27° 53.710'E	Med-High	Impacted
LIA04	25° 34.693'S 27° 53.738'E	Med-High	Impacted
LIA05	25° 34.647'S 27° 53.796'E	Med-High	Impacted
LIA06	25° 34.634'S 27° 53.822'E	Med-High	Impacted
LIA07	25° 34.636'S 27° 53.846'E	Med-High	Impacted
LIA08	25° 34.629'S 27° 53.870'E	Med-High	Impacted
LIA09	25° 34.656'S 27° 53.820'E	Med-High	Impacted
LIA10	25° 34.699'S 27° 53.940'E	Med-High	Impacted
LIA11	25° 34.721'S 27° 53.948'E	Med-High	Impacted
LIA12	25° 34.732'S 27° 53.934'E	Med-High	Impacted
LIA13	25° 34.719'S 27° 53.968'E	Med-High	Impacted
LIA14	25° 34.675'S 27° 53.923'E	Med-High	Impacted

Table 1- Coordinates for Late Iron Age stone walled sites in the Project Area (above).

Historical House Historical Period	Coordinates	Significance	Pristine/Impacted
HH01	25° 34.684'S 27° 53.817'E	Low	Pristine

Table 2- Coordinates for a Historical House in the Project Area (above).

Graveyards Historical Period & contemporary	Coordinates	Significance	In use/abandoned
GY01	25° 34.710'S 27° 53.951'E	HIGH	Abandoned
GY02	25° 33.991'S 27° 52.650'E	HIGH	In use

Table 3- Coordinates for graveyards in the Project Area (above).

7 THE SIGNIFICANCE, POSSIBLE IMPACT ON AND MITIGATION OF THE HERITAGE RESOURCES

7.1 The significance of the heritage resources

The significance of the heritage resources is outlined according to stipulations derived from the National Heritage Resources Act (No 25 of 1999) as well as criteria relating to each of the types and ranges of heritage resources that are scrutinized.

7.1.1 Historical remains

All remains older than sixty years are protected by Section 34 and Section 38 of the National Heritage Resources Act (No 25 of 1999).

The Historical House (HH01) may be as old as sixty years but has low heritage significance when considering criteria such as the following:

- The house is in a severe state of dilapidation.
- Very little can be learned from this remains due to its derelict state whilst it also have no further (e.g. educational, research) value.
- This kind of historical remains dating from the last sixty years or longer are relatively common in the area.

7.1.2 Late Iron Age remains

All Late Iron Age remains such as the stone walled sites qualify as archaeological sites and therefore are protected by Section 35 and Section 38 of the National Heritage Resources Act (No 25 of 1999).

However, the fourteen occurrences (possible sites) that were documented vary with regard to their significance as some of these sites have been damaged in

the past whilst others are pristine. The level of significance for the sites which are still pristine (LIA01, LIA02) can be described as high whilst those sites that have been affected (LIA03 to LIA14) can be classified as medium to high due to the following criteria:

- The sites have research and educational value.
- The investigation of the sites can contribute to a better understanding of the regional Tswana pre-history as the sites fall within the sphere of the influence of the Kgatla and Bakwena Bamôgôpa two clans who were subjugated by Mazilikazi's Ndebele during 1827 to 1832.
- The sites are located in close proximity of Mzilikazi's settlement complex from where he controlled this part of the Bankeveld during the early nineteenth century.

7.1.3 Graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

7.2 Possible impact on the heritage resources

It is possible that the heritage sources may be affected (destroyed) during operations of the mine such as the extension of the open cast pit (GY02) or the expansion of the waste rock dumps (GY01 and LIA01 to LIA14). Therefore, the following mitigation measures have to be undertaken if the heritage resources may be affected by mining operations in the future.

7.3 Mitigating the heritage resources

7.3.1 Historical remains

The Historical House (HH01) has low significance and needs no mitigation measures. This structure can be destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA).

7.3.2 Late Iron Age remains

The Late Iron Age remains have to be investigated by an archaeologist who is accredited with the Association for Southern African Professional Archaeologists (ASAPA) before these remains can be destroyed. The archaeologist has to obtain a permit from SAHRA in order to conduct a Phase II archaeological investigation of these sites. The Phase II investigation will entail the documentation and excavation of these remains the results of which must be published in a report to SAHRA. After the Phase II investigation has been completed the archaeologist or developer must obtain a demolition permit from SAHRA which would authorise the demolishing of these remains.

7.3.3 Graveyards

The graveyards must be managed by the following strategies, namely:

- By means of establishing secure fences or walls around these features. Whilst GY01 is demarcated with a new fence which is fitted with an entrance gate GY02 is unprotected as the fence around this feature has fallen into disrepair. Considering the busy nature of the area where this graveyard is located - near the edge of the open pit where trucks and other vehicles are used in the open pit's operation - accidental damage to the graveyard may occur at any time. It also seems as if no controlled access to this graveyard

is in place. This may have repercussions with regard to the safety of visitors who must have safe and controlled access to the graveyards

If the graveyards existence may be affected by the expansion of the rock waste dumps or the expansion of the open pit these features have to be mitigated by means of the following strategy:

- The exhumation and relocation of the graveyards. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

8 CONCLUSION AND RECOMMENDATION

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