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A PHASE I HERITAGE IMPACT ASSESSMENT FOR IMPALA PLATINUM LIMITED (IMPLATS) PROPOSED NEW SHAFT 18 COMPLEX IN THE RUSTENBURG (BAFOKENG) DISTRICT IN THE NORTH-WEST PROVINCE (WITH AMENDMENTS TO THE SHAFT 18 COMPLEX IN ORDER TO AVOID SITES LIA03 AND SITE LIA04)

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May 2013
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EXECUTIVE SUMMARY

A Phase I Heritage Impact Assessment (HIA) study as required in terms of Section 38 of the National Heritage Resources Act (No 25 of 1999) was done for Impala Platinum Limited Rustenburg Operations (Implats) proposed Shaft 18 Complex in the Rustenburg (Bafokeng) District in the North-West Province. The Shaft 18 Complex and its associated linear infrastructure corridors are referred to as the Impala Project whilst the collective footprints of these developmental components are referred to as the Impala Project Area.

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 Impala 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 proposed Impala Project and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the project.

The Phase I HIA study for the Impala Project Area revealed the following types and ranges of heritage resources as are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Shaft 18 Complex, namely:

- Stone walled sites which date from the Late Iron Age.

This study did not provide for a paleontological study.

The stone walled sites near the shaft complex were geo-referenced and mapped (Figures 9; Table 1). Their significance is indicated as well as the significance of the impact of the Impala Project on these stone walled sites (Tables 3 & 4). Mitigation measures are outlined for those stone walled sites which will be affected by the Impala Project.

Possible impact on the stone walled sites

It is highly likely that the Impala Project will affect (impact) Site LIA03 and Site LIA04 along the base lines of Tlhatlhe and Sefakwe. The significance of these settlements therefore is indicated as well as the significance of the impact on these stone walled sites. Mitigation measures are outlined for those stone walled sites which will be affected (destroyed or altered) by the Impala Project.

It is highly unlikely that Site LIA01 and Site LIA02 will be affected by the Impala Project.

The significance of the stone walled sites

The significance of the stone walled sites can be described as medium to high when considering the following criteria (Table 3):

- The sites represent a cultural landscape. Each and every site is unique as it contributes to the significance of the cultural landscape which served as a cultural and historical unit representing the life-ways, customs and cultures of the pre-historical and historical Tswana and other indigenous groups who lived in the Bankeveld three to four hundred years ago.
- The investigation of the cultural landscape can contribute to a better understanding of the region's pre-history and history as the landscape fall within the sphere of the influence of the Bafokeng who was subjugated by Mazilikazi's Ndebele during 1827 to 1832.
- The settlements have educational and research value which have to be unlocked by means of a further (Phase II) study.

The significance of the impact on Site LIA01 and Site LIA02 is very low. The significance of the impact on Site LIA03 and Site LIA04 is high (Table 4).

Mitigating the stone walled sites

The following mitigation measures have to be applied to Site LIA03 and Site LIA04 if these stone walled settlements are to be affected by the Impala Project.

The Late Iron Age and historical 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 the South African Heritage Resources Authority (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 will be published in a report to SAHRA. After the Phase II investigation has been completed Implats must obtain a demolition permit from SAHRA which would authorise the demolishing of these remains.

AMENDMENTS TO THE IMPALA SHAFT 18 COMPLEX IN ORDER TO AVOID STONE WALLED SITES LIA03 AND SITE LIA04

Impala has indicated that Eskom's substation which will impact on Site LIA03 and Site LIA04 will be moved in order not to impact on any of the Late Iron Age settlements (Site LIA01 to Site LIA04) which are located on the north-eastern perimeter of the Shaft 18 Complex.

A further investigation (Phase II) of Site LIA03 and LIA04 therefore would not be necessary if the Eskom Substation is moved not to impact on (collide with) the stone walled sites.

Recommendations

It is recommended that the Eskom substation be moved to the opposite side (from the north to the south) of the Shaft 18 Complex. If this is not possible it is recommended that the substation must be moved at least fifty meters away from the nearest stone walled site. No power lines may cross the stone walled settlements whist no pylons may be erected within a distance of closer than fifty metres from the stone walled sites.

No mitigation measures are recommended for the stone walled sites as they are naturally protected by their location to the 'back side' of the kopje Sefakwe, away from where the development will take place and where no roads or other development will take place.

The demarcation of the sites with a fence is not advised: this may cause unnecessary damage to the unspoilt area or may focus the attention of vandals or unsavoury characters on these remains. The security arrangements that are in place at Impala's shaft complexes (e.g. patrol of border fences) provide adequate cover to see that no damage needs to be caused to the archaeological sites in close proximity of the Shaft 18 Complex.

General

It is possible that this Phase I HIA study may have missed heritage resources in the Impala 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 project 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.

CONTENTS

1 INTRODUCTION

Impala Platinum Limited's Rustenburg Operations (hereafter referred to as Implats) intends to develop the vertical Shaft 18 Complex in the Rustenburg (Bafokeng) District in the North-West Province. This report therefore contains the results of a Phase I Heritage Impact Assessment (HIA) study which was done for Implats' proposed new mine development project.

The North-West Province of South Africa has a rich heritage comprised of remains dating from the pre-historic and from the historical (or colonial) periods of South Africa. Pre-historic and historical remains in the North-West Province present 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' (outlined in Section 3 of the National Heritage Resources Act, Act No 25 of 1999) occur in this region (see Box 1).

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 AIMS OF THIS REPORT

Implats intends to develop the vertical Shaft 18 Complex in the Rustenburg (Bafokeng) District in the North-West Province. This mining development project (referred to as the Impala Project) may have an influence on any of the types and ranges of heritage resources which are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) as some of these resources may occur in the area where the proposed development activities will take place (referred to as the Impala Project Area).

Therefore, SLR Consulting (Africa) (Pty) Ltd, the environmental company responsible for compiling the Environmental Impact Assessment (EIA) for the Impala Project, commissioned the author to conduct a Phase I Heritage Impact Assessment (HIA) study for the Impala Project Area.

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 Impala 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 proposed Impala Project and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the Impala Project.

3 METHODOLOGY

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

3.1 Desktop study

Literature relating to the pre-historical and the historical unfolding of the Rustenburg District was reviewed. This review provides a broad chronological overview of the region ranging from pre-historical times to the historical period including the development of platinum and chrome mining in the region. It also refers to the Bafokeng and other Tswana clans who, together with the colonial Voortrekkers, were the most influential pre-historic and historical groups in the region. This contextual evidence contributes to a better understanding of the identity and meaning of heritage sites which may occur in and near the Project Area.

A number of heritage studies which were done for developers near the Project Area also provided information regarding the general heritage characteristics of the larger Project Area (see 'Select Bibliography', Part 9).

The desktop study also involved consulting heritage data banks maintained at institutions such as the North-West Provincial Heritage Resources Agency in Mafikeng, the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and the national heritage resources register at the South African Heritage Resources Agency (SAHRIS) in Cape Town.

The Project Area was also studied by means of maps (Sun City 2527CA 1: 50 000 topographical map; 2527 Pretoria 1:250 000 map and Google imagery).

3.2 Fieldwork and research

The Project Area was surveyed with a vehicle and by means of a pedestrian survey. The pedestrian survey was conducted on the flat terrain to the west of Sefakwe as well as along the base lines of the other two hills in this series of the Thaba-ea-Nape

mountains. A track log which was registered with a mounted GPS instrument outlines the main route for the field survey from where pedestrian surveys were conducted. The pedestrian surveys were conducted from the vehicle in directions dictated by the archaeologists experience where to find stone walled sites. A number of photographs also outline the characteristics of the Project Area (see 'Part 6.1 Fieldwork survey', Figures 4 –8).

The Project Area was also surveyed on at least one occasion in the past, namely:

- Pistorius, J.C.C. 2011(a). A Phase I Heritage Impact Assessment (HIA) study for Impala Platinum Limited Rustenburg (Implats) proposed new Shaft 18 and Shaft 19 in the Rustenburg (Bafokeng) District in the North-West Province. *Unpublished report for Implats*.

A considerable number of heritage impact assessments studies have been done by the author in the larger Project Area, some of which are listed below (also see 'Part 10, Select Bibliography'):

- Pistorius, J.C.C. 2004. *A Heritage Impact Assessment (HIA) study for Impala Platinum's proposed new No 16 Shaft Complex on the farm Reinkoyalskraal 278JQ in the Bojkone-Bothlaba District Municipality of the North-West Province.* Unpublished report prepared for Ground Water Consulting Services CC.
- Pistorius, J.C.C. 2005. *Results on a Phase II Heritage Impact Assessment study. An investigation of a Late Iron Age site on the farm Reikoyalskraal 287JQ in the Bankeveld of North-West Province of South Africa*. Unpublished report prepared for Ground Water Consulting Services CC.
- Pistorius, J.C.C. 2006. *A Phase I Heritage Impact Assessment (HIA) study for Impala Platinum's Exploration activities near Rustenburg in North-West Province of South Africa*. Unpublished report Impala Platinum
- Pistorius, J.C.C. 2006. *A Phase I Heritage Impact Assessment (HIA) study for the Impala Platinum Shaft 17 Complex on the farm Vlakfontein 276JQ near Rustenburg in the North-West Province of South Africa*. Unpublished report for Golder Associates and for Impala Platinum.
- Pistorius, J.C.C. 2006. *A Phase I Heritage Impact Assessment (HIA) study for Impala Platinum's exploration activities near Rustenburg in the North-West*

Province of South Africa. Unpublished report for Golder Associates and for Impala Platinum.

- Pistorius, J.C.C. 2006. *A Phase 2 Heritage Impact Assessment (HIA) study for the Impala Platinum Shaft 17 Complex on the farm Vlakfontein 276JQ near Rustenburg in the North-West Province of South Africa*. Unpublished report for SAHRA and for Impala Platinum.
- Pistorius, J.C.C. 2007. *Preliminary report on a heritage survey for the Ga-Nape Late Iron Age Complex on Welbekend 117 in the Rustenburg (Bafokeng) District in the North-West Province of South Africa.* Unpublished report prepared for Royal Bafokeng Resources.

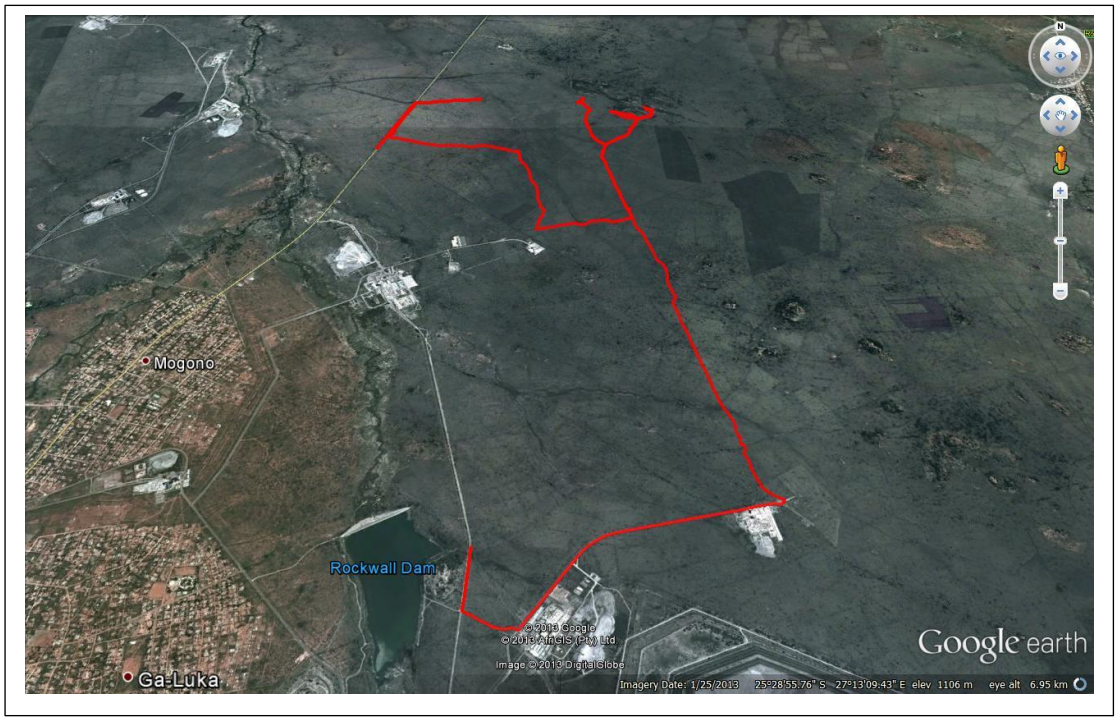


Figure 00- Track pathway registered with a mounted GPS outlines the main routes that were followed during the field survey from where pedestrian surveys were undertaken (above).

- Pistorius, JCC 2008. *A Phase I Heritage Impact Assessment for the Chaneng sewer treatment plant and sewer pipelines in the Rustenburg (Bafokeng) District in the North-West Province of South Africa.* Unpublished report prepared for Naledzi Environmental Consultants and the Royal Bafokeng Administration.

- Pistorius, J.C.C. 2010. *Report on a preliminary Heritage Survey for Impala Platinum's proposed new Shaft 18 complex on Toulon 111JQ and Roodekraalspruit 113JQ in the Rustenburg District of the North-West Province of South Africa.* Unpublished report prepared for Impala Platinum Mine.

The author has also compiled a heritage register for Implats which lists, describes and evaluate the significance of all known heritage resources in the Impala Converted Mine Lease Area, namely:

- Pistorius, J.C.C. 2011. *A survey and assessment of heritage resources and proposing the implementation of a cultural heritage management program in the Impala Platinum (Implats) mine lease area in the Rustenburg (Bafokeng) District in the North-West Province.* Unpublished report prepared for Impala Platinum Mine.

3.3 Assumptions and limitations

It must be pointed out that heritage resources can be found in the most unexpected places. It must also be borne in mind that surveys may not detect all the heritage resources in a given project area. While some remains may simply be missed during surveys (observations), others may occur below the surface of the earth and may only be exposed once mining development commences.

If any heritage resources of significance is exposed during the development project 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.

3.4 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.
- Conservation (*in-situ*): The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Cultural (heritage) 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.
- Cultural (heritage) 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.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage (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.
- 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).

- 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.
- Historical period: Refers to the first appearance or use of 'modern' Western writing in a particular area or region of the world.
- 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.
- 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.
- Maintenance: Keeping something in good health or repair.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- 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.
- 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.

- 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 Project Area.
- 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 IMPALA PROJECT AREA

4.1 Location

The Impala Project Area falls within the Converted Mining Rights area which covers a surface of approximately 330km² within the jurisdiction of the Rustenburg Local Municipality in the Bojanala Platinum District in the North-West Province (Sun City 2527AC: 1: 50 000) (Figure 1).

The Impala Converted Mining Rights area is a long, narrow swath of land running from the Pilanesberg in the north, south-eastwards to the Bospoort Dam in the south. It can be divided into a flat, featureless northern stretch of land and a southern mountainous area. A prominent feature stretching across this landscape from the north to the south is a series of norite hills which are also known as the Thaba-ea-Nape (or Thaba-ea-Maralla) range of mountains. Stone walled settlements which date from the Late Iron Age occur throughout this area, the majority of which, as clusters of sites near the base line of the Thaba-ea-Nape range of mountains whilst some scattered, isolated settlements are located near small norite protrusions on the flat plains away from the hills.

The Shaft 18 Complex is located on the farms Doornspruit 109JQ and Goedgedacht 119JQ. It incorporates norite kopjes on the north-eastern perimeter of the Shaft 18 Complex which are named as Tlhatlhane in the north, Tlhatlhe in the centre and Sefakwe in the south. This cluster of kopjes represents the northern most kopjes on the tip of the historically Thaba-ea Nape range of mountains which runs from Thekwane in the south to Sefakwe in the north. Villages closest to the Impala Project Area are Maile to the north and Diepkuil to the east (Sun City 2527CA; 1: 50 000 topographical map).

4.2 The nature of the Impala Project Area

Implats' proposed Shaft 18 Complex will be developed in the central part of the converted mine lease area. The Shaft 18 Complex is located to the north-west of the Thaba-ea-Nape range of mountains and is situated on a relatively flat piece of land

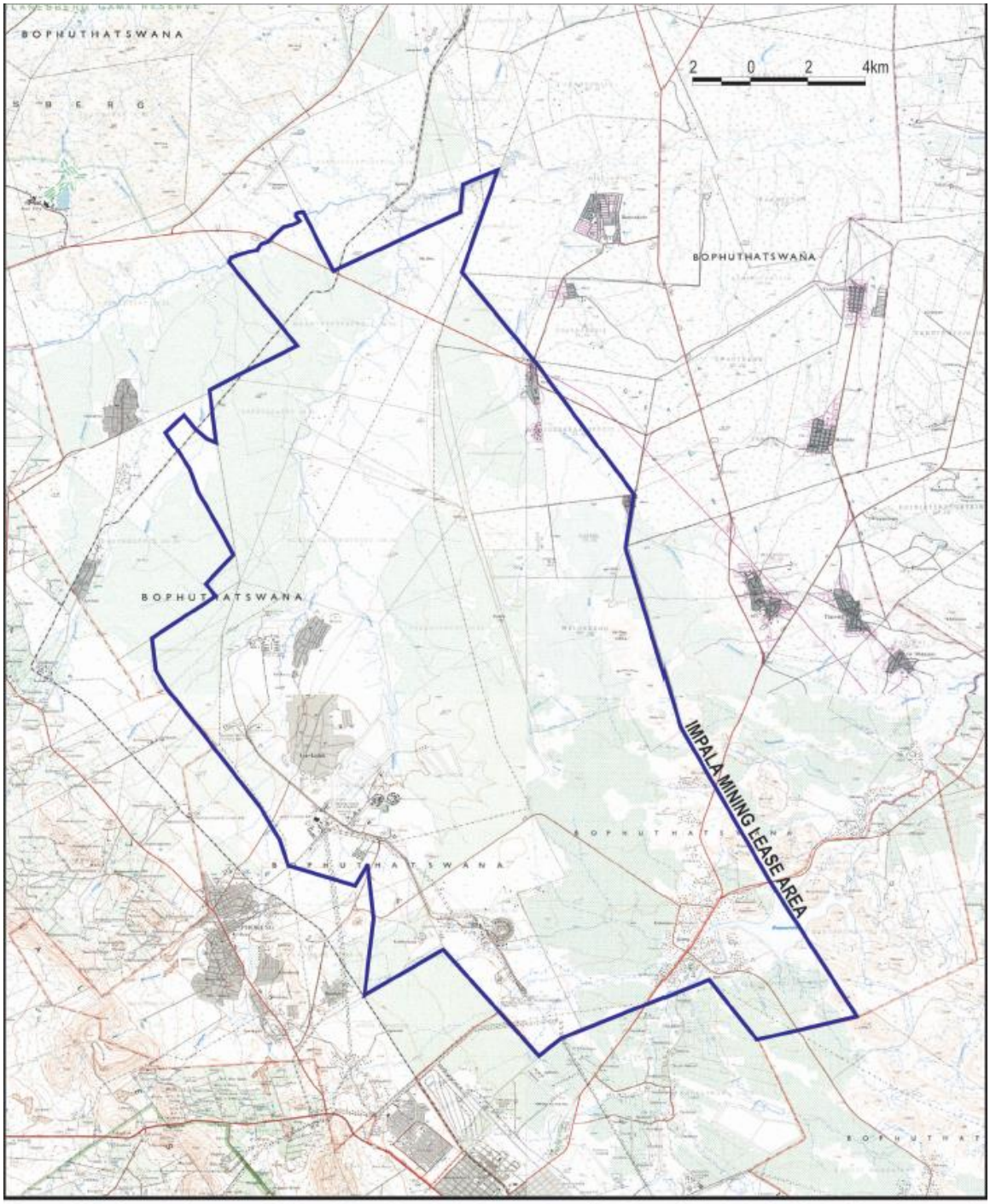


Figure 1- The Impala Converted Mining Rights Area in the Rusternburg (Bafokeng) District in the North-West Province is a long, narrow swath of land running from the Pilanesberg in the north to the Bospoort Dam in the south. Various types and ranges of heritage resources occur in this area (above).

adjacent to Sefakwe. This rather featureless plain stretches westwards without any topographical features to the eastern fringes of the bulk of Implats mining infrastructure in this part of the Bafokeng District. The limited infrastructure on this flat, outstretched piece of land includes two tract dirt roads and power lines.

The nature of the project area is revealed in more detail in Part 6.1 which outline the field survey (Figures 4-8).

The Impala Project Area is part of a cultural landscape which warrants a description to demonstrate its place in South Africa's cultural history (see Part 5, 'Contextualising the Impala Project Area').

4.3 The nature of the Impala Project

The Impala Project incorporates the construction of the Shaft 18 Complex which is a clear square demarcated area (with attachment) which skirts the western and southern base lines of the kopjes Tlhatlhe and Sefakwe. Other infrastructure comprises linear infrastructure corridors such as the following:

- The road which links the proposed Shaft 18 Complex with road D513.
- The sewage pipeline between Shaft 17 and the Sewage Treatment Plant (STP).
- Pipe lines between the Shaft 18 Complex and the Rockwall Dam. (These pipelines follow an existing railway line).

(Note that Figure 9 outlines a network of linear infrastructure [green lines] but not all these linear infrastructure is relevant to this study).

The Shaft 18 Complex comprises an underground mining operation which mostly occurs at great depths where these mining activities have no influence on any heritage resources.

The Shaft 18 Complex and its associated linear infrastructure corridors are referred to as the Impala Project whilst the collective footprints of these developmental components are referred to as the Impala Project Area.

Figures 2 & 3- The Shaft 18 Complex will be established in close proximity of the kopjes Tlhatlhane (north, left), Tlhatlhe (centre) and Sefakwe (south, right) which is part of the Thaba-ea-Nape range of mountains (above). Ga-Nape in the Thaba-ea-Nape mountain range is situated to the south-east of the Shaft 18 Complex and is associated with Nape a former Bafokeng ruler who probably lived at this settlement from AD1600 onwards (above).

5 CONTEXTUALISING THE IMPALA PROJECT AREA

The Project Area falls within the ambits of the Central Bankeveld which is a narrow stretch of land running from east to west between the Bushveld in the northern part of South Africa and the centrally situated Highveld. The core of this area is situated between Krugersdorp in the south, the Pienaars River to the north, the town of Bronkhorstspruit in the east and the Pilanesberg to the west. This region can be divided into three parallel vegetation zones: the grassveld of the Highveld in the south, the Bushveld savannah in the north and the Magaliesberg valley as a zone situated between the grassveld and the savannah veld. The region has abundant surface water supplies, because the local Pienaar, the Moretele, the Hex and the Apies Rivers all drain their waters into the Crocodile River (Horn 1996).

5.1 Stone Age

Interaction over millions of years between the climate, geology, topography, fauna and flora in the Bankeveld established a milieu in which the earliest ancestors of modern humans emerged some two to three million years ago. The remains of *Australopithecine* and *Homo habilis* were found in dolomite caves and underground dwellings at Sterkfontein and Swartkrans near Krugersdorp, outside the project area. *Homo habilis*, one of the Early Stone Age hominids, is associated with Oldowan artefacts which include crude implements manufactured from pebble stones.

The Acheul industrial complex replaced the Oldowan industrial complex during the Early Stone Age. This phase of human existence was widely distributed across the world and is associated with *Homo Erectus* who manufactured hand axes and cleavers from as early as one and a half million years ago. One of the earliest discoveries of an Acheul site was made at Wonderboompoort, in a part of the Magaliesberg to the east of the Project Area (Mason 1986).

Middle Stone Age sites dating from as early as two hundred thousand years ago have been found all over South Africa. Middle Stone Age hunter-gatherer bands lived and hunted to the north and to the south of the Magaliesberg. These people

who probably looked like modern humans occupied camp sites near water but also used cave sites in the Magaliesberg. They manufactured a wide range of stone tools, including blades and points that may have been hafted by long wooden sticks and were used as spears (Mason 1986).

The Late Stone Age commenced twenty thousand years ago or somewhat earlier. Various Late Stone Age industries are scattered across the country and are associated with the historical San and Khoi-Khoi people. The San were renowned as formidable hunter-gatherers, while the Khoi-Khoi herded cattle and small stock during the last two thousand years. Late Stone Age people manufactured microlithic tools that were small but highly effective, such as arrow heads and knives. Later Stone Age people also occupied the cave sites that were used by their predecessors. The Late Iron Age people were also known for their rock art skills. Rock engravings have been found near Maanhaarrand and Rustenburg (Mason 1986).

5.2 Iron Age

Early Iron Age farming communities practised a mixed economy consisting of plant cultivation and stock herding, in the interior of South Africa during the first half of the first millennium AD.. These Bantu-Negroid people were ironworkers of some repute and established the first permanent villages south of the Limpopo River. Some of their settlements occur in the Magalies Valley along the lower slopes of the Magaliesberg and the Witwatersberge (Mason 1986).

During the Late Iron Age**,** farming was practised in the northern, central and eastern parts of the country. Stone walled settlements built from the 17th century onwards are numerous in the Central Bankeveld, where they are associated with the Tswana. Small vanguards of these agro-pastoralists may, however, have been present in this area as early as the 14th century (Breutz 1954, 1986; Schapera 1952, Schapera. 1955). One of the earliest ancestors was known as Mogale, from whose name the Magaliesberg derives its name. The settlements of these early Tswana chiefdoms are characterised by an impressive and elaborate stone-built tradition. Hundreds of sites were built along the bases of the granite hills that run across the Central Bankeveld (Pistorius 2000c).

There were numerous pre-*difaqane* and *difaqane* wars in the Bankeveld during the last quarter of the 18th century and during the first three decades of the 19th century. These wars led to the displacement of large numbers of Late Iron Age communities. The Matabele of Mzilikazi caused chaos and havoc in the Bankeveld. The Matabele established several village complexes in the Bankeveld from whence they maintained their hold on the indigenous population. Two Matabele strongholds, one at Silkaatsnek and the second near Madibeng (Brits), were located some distance from the project area (Rasmussen 1978; Pistorius 1997a, 1997b, 1998).

The Rustenburg District which incorporates the flat stretch of land located between the Magaliesberg in the west, the Thaba-ea-Maralla range of mountain to the east the Pilanesberg in the north and the town of Rustenburg in the south used to be the sphere of influence of the Fokeng. The Project Area is located on the southern tip of this piece of land (Coertze 1987).

5.3 The Historical Period

During the first half of the 19th century, numerous traders, adventurers and explorers visited the Bankeveld (De Beer 1975). A hunting group from Somerset West and traders such as Schoon and McLuckie (1829) were the first white people to visit the area north of the Magaliesberg. Missionaries such as Robert Moffat (1829), the scientist Andrew Smith (1835) (Lye 1975) and the adventurer Cornwallis Harris (1836) (Harris 1963) moved through the Magaliesberg. Some of these traders visited Mzilikazi of the Ndebele at his villages in the region.

These early travellers were followed from the 1840's by the first colonists who settled in various places in the Magaliesberg such as Rustenburg, Marikana and Madibeng (Brits) near the Crocodile River close to the Project Area (Bergh1992). Farms near the Project Area that were occupied by the Voortrekkers were Witpensfontein and Kafferskraal which later became Rustenburg (Pretorius 1967).

5.4 Brief history of the Bafokeng

The Thaba-ea-Nape (also referred to as the Thaba-ea-Maralla) range of mountains located between Marikana and Rustenburg was home to numerous ancestral rulers of the Bafokeng people. According to oral tradition different branches (clans) of the Bafokeng settled - from the north to the south - along this range of mountains from as early as 1600AD. The places of settlement were: Serutube, Marekana, Tsitsing (Kanana), Thekoane (Thekwana) and Photsaneng (Bleskop).

Only a broad outline of the genealogy of Bafokeng rulers, from Nape (AD1700) to Môkgatle (AD1835) is outlined. Settlements that were associated with some of these rulers, although only a few are mentioned in oral tradition, are also indicated.

The oldest legends state that the Bafokeng entered the Transvaal through Tweedepoort, under the leadership of Nape, the earliest known Bafokeng chief. This was before AD1700. The group moved south-eastwards and settled on the banks of the Elands River (Kgetleng). Three Bafokeng groups detached themselves from the main branch and moved southwards on different occasions. The Bafokeng are therefore spread over the Orange Free State, Lesotho and even the former homeland of Transkei. The Bafokeng are, next to the San people, the oldest inhabitants of the Orange Free State.

The domain under Bafokeng control during the last two centuries was the following: the northern border was the Kgetleng River (and the Tlôkwa and Kgatla Kgafêla chiefdoms); the western boundary was the Kwena Modimosana chiefdoms and the southern boundary the Magaliesberg. The eastern boundary was determined by the presence of the Kwena Môgôpa and the Kwena Mogale chiefdoms.

The history of the Bafokeng begins with Sekete III (Maleriba) who probably ruled in AD1700. He had three sons Kgantsi, Pitswe and Diale. (The last two had the same mother). Kgantsi was born from a Hurutshe father after the Hurutshe had abducted his mother. (Controversy surrounded Sekete's III position until his death, although he was the oldest son).

Diale succeeded Sekete III and his reign probably began in AD1720. His sons were Mokuru, Mogotsi, Ramarwa, Ramogase, Tlase and Ntê. (The first two died young). Diale's sons freed the Bafokeng from the Hurutshe's custom to castrate the bulls of the Bafokeng, an act that was considered offensive by the Bafokeng as it indicated the Hurutshe's seniority above the Bafokeng. This particular incident put an end to the Hurutshe's domination of the Bafokeng.

With the exception of Ramorwa all the known sons of Diale became leaders of *dikgoro*, Ntê, the progenitor of the *kgoro* Seloko, Tlase, of Mathebetswaane and Ramogware of Metlapeng.

Ramorwa succeeded Diale as chief and had four sons: Mmutle, Sekete, Katane and Mpie.

Sekete succeeded Ramorwa in about AD1790. He was a formidable warrior and is remembered as one of the greatest Bafokeng chiefs. The following individuals were sons of Sekete: Thete, Nameng, Nôge, Mogotsi, Molefe, Pitswe, Ramarue, Mohue, Manaana, Rantsogwana and Marahtsane (more can be added). Important individuals were Thete, Nameng and Nôge.

Katane, or Raikane acted as regent for Thethe (also known as Mmakgongwana) who became the next chief. He had the following sons: Diale, Mokgatle, Molotlegi, Molefe, Liphatse and Pogwe. (The first, third and fifth died young). Môkgatle, Molefe and Pogwe played important parts in the next phase of Bafokeng history.

Thethe was very fond of his two younger brothers, Namemg and Nôge. The two brothers, however, turned against him. (The main concentration point in Thethe's time was at Makotshaneng [Makojaneng], east of Rustenburg near the Hex River). Thethe fled with his followers and took refuge with the Modimosana Mmatau. The Bafokeng accepted Nameng as chief.

Nameng reigned for only eight months after the enforced departure of Thethe as he was killed by the doings of Nôge, who now became chief.

Nôge's rule commenced in about 1820 and ended when he was ousted in 1829 to 1830. Nôge's reign represents a stormy period in Bafokeng history. Thethe invited the Pedi to attack the Bafokeng whereupon Malekutu destroyed the Bafokeng in 1823 to 1824. The devastation caused by the Pedi accounts for the fact that Mzilikazi amassed very little from the Bafokeng's territory in 1826 to 1829.

Nôge killed Ndebele visitors to his village. He occupied the summit of Ntlhane, a 'hillock near Malejane', with his followers and bolstered the foot and slopes with wooden stockades. The Bafokeng pounded the Ndebele with stones forcing them to retreat.

Nôge became unpopular and fled to Moshoeshoe in the Orange Free State.

Môkgatle's accession was somewhere between 1834 and 1836. His reign had hardly begun when the Voortrekkers drove the Ndebele out of the Transvaal. He remained in office until his death in 1891 when he was about eighty years old. His principal village was named Mmakgongwana (after Thethe), today located in Rustenburg and partly on Paardekraal. Dirêpotsana Hill, where Phokeng now stands, was also re-occupied as residential area in Mokgatle's time (Coertze 1987; Môkgatle 1971).

5.5 Early platinum mining

The Merensky Reef is part of the crescent-shaped Bushveld Complex that stretches across the central part of South Africa. This Reef is known for its wealth of mineral resources, generally referred to as the platinum-group metals (PGM's). These two limbs of the Complex are confined to the North-West Province and to the Northern and the Mpumalanga Provinces of South Africa. The eastern limb of the Reef is geologically less well known than the western limb, because mining activities in this part of the Reef have been limited.

The discovery of platinum in South Africa dates back to the late 19th century. In 1892, William Bettel identified osmium-iridium alloy particles in concentrate from the Witwatersrand gold mines. Bettel (1902) and Hall and Humphrey (1908) also recorded

the presence of platinum in the chromatite layers of the Bushveld Complex. Wagner (1924) reported the presence of sperrylite in the ore bodies at Vlakfontein near the Pilanesberg. However, none of these discoveries were considered to be of any economic significance. The first deposits that were economically viable, called the Waterberg Platinum, were found by Adolf Erasmus in the Rooiberg fellsites between Nylstroom and Potgietersrust. These deposits did not prove to be significant. Andries Lombaard's discovery of platinum nuggets in the Moopetsi River on the farm Maandagshoek in the Steelpoort area in 1924 can be considered the initial discovery of the Merenky Reef.

During the great platinum boom of 1925 over fifty companies were started in the Union of South Africa to exploit the mineral resources of the Bushveld Complex and the Waterberg district. Oxidized ores were initially taken from the Merensky Reef. When these ores had been exhausted, they were replaced by sulphide ores.

The world's consumption of platinum and its price became extremely depressed by 1930. This led to the collapse of all the mining companies in the 1930's. Many of the companies faded from memory. More prosperous companies absorbed others, while some companies transferred their activities from the Lydenburg District to the more favourably circumstanced Rustenburg district, while retaining their Lydenburg properties. Some companies went bankrupt and suspended their operations which they never resumed.

Further fluctuations in the price of platinum during the 1940's and 1950's did not encourage an expansion of mining activities. The demand also did not support or necessitate the enormous scale of mining seen around the Bushveld Complex until the early 1970's.

Currently, the platinum mining fraternity in and immediately beyond the Impala Project Area is made up by Anglo Platinum and Lonmin Platinum, the first two acting as two of the biggest producers of platinum in the world.

Historical platinum mining activities with infrastructure may still occur in the Impala mine right area (Viljoen & Reimold 1999; Wagner 1973).

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

The Phase I HIA study is now briefly discussed and illuminated with photographs.

6.1 The field survey

The following photographs outline some of the characteristics of the Project Area.

Figures 4 & 5- The Shaft 18 Complex will be established in close proximity of the foot of Sefakwe on a level piece of land which is dotted with small acacia trees away from the hill (above) whilst rocky outcrops with different types of trees occur closer to the hill (below).

Figures 6, 7 & 8- Linear infrastructure comprising roads, pipelines and sewage pipelines (some of the green lines and the black dotted line on Figure 9) runs across level grass veld (with agricultural fields) (above, centre and below).

6.2 Types and ranges of heritage resources

The Phase I HIA study for the Impala Project Area revealed the following types and ranges of heritage resources as are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Shaft 18 Complex, namely:

- Stone walled sites which date from the Late Iron Age.

The stone walled sites near the shaft complex were geo-referenced and mapped (Figures 9; Table 1). Their significance is indicated as well as the significance of the impact of the Impala Project on these stone walled sites (Tables 3 & 4). Mitigation measures are outlined for those stone walled sites which will be affected by the Impala Project.

6.2.1 Stone walled settlements

Several Late Iron Age sites occur along the base lines of Tlhatlhe and Sefakwe in close proximity of the access road and north-eastern boundary of the proposed Shaft 18 Complex. These settlements comprise the following:

- An archaeological deposit which probably dates from the Late Iron Age against the northern foot of Tlhatlhane (Site LIA01).
- A stone walled site along the north-western foot of Sefakwe (Site LIA02).
- A large stone walled site along the north-eastern foot of Sefakwe (Site LIA03).
- A stone walled site along the south-eastern foot of Sefakwe (Site LIA04)

The settlements are now briefly discussed and illuminated with photographs.

6.2.1.1 Site LIA01

Site LIA02 is located along the northern foot of Tlhatlhane and is characterised by the absence of any stone walls. However, it is highly likely that the site date from the Late Iron Age. It seems as if the site may cover a large surface area although its outer boundary is unclear due to the presence of a dense tree cover along the base of the kopje.

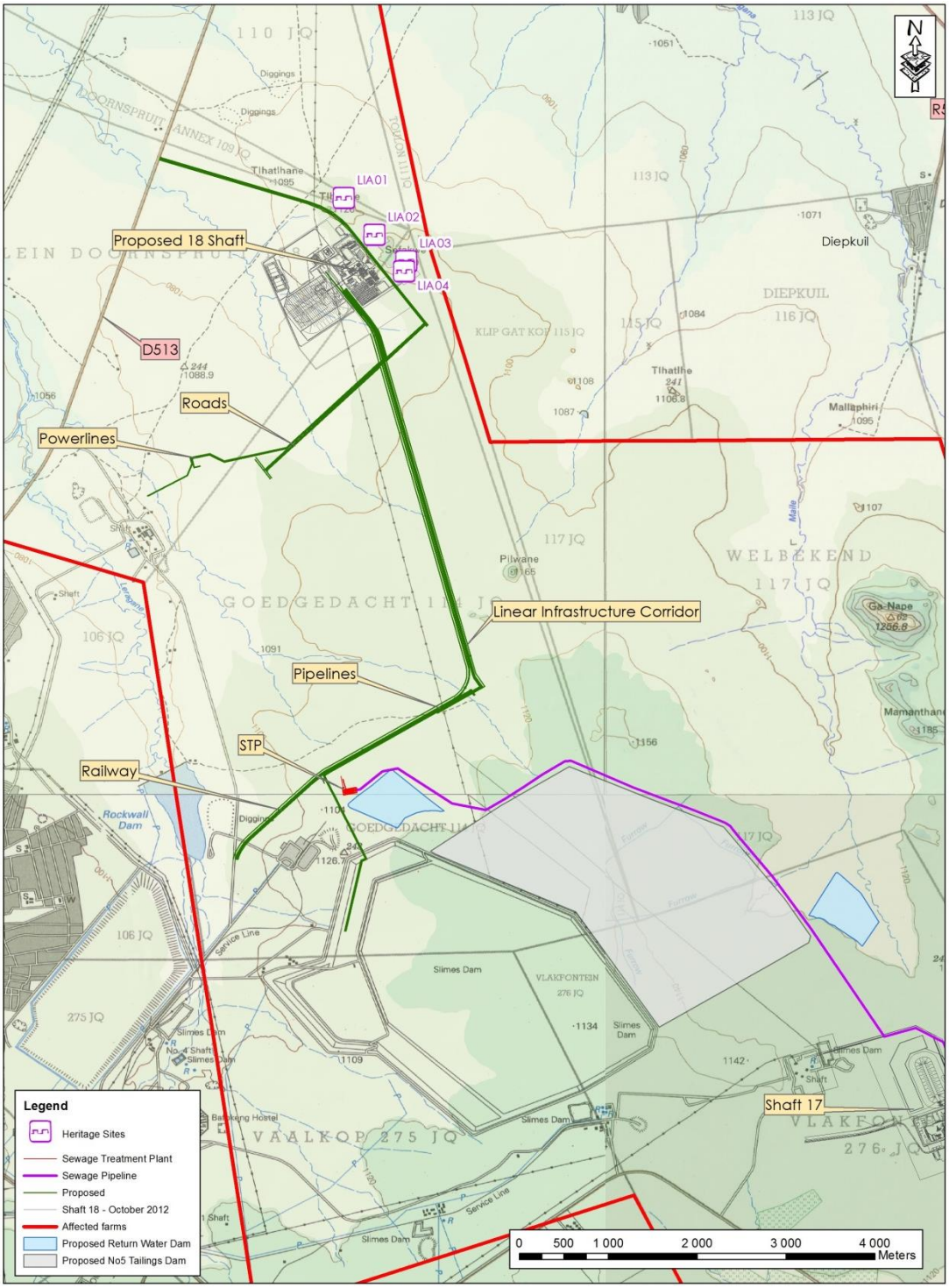


Figure 9- The Impala Project Area comprising the Shaft 18 Complex including linear infrastructure. Note the presence of Late Iron Age stone walled sites on the northern and eastern border of the project area (above).

Figures 10 & 11- Site LIA01 is located against the northern foot of Tlhatlhe and is without any visible stone walls but holds extensive middens with archaeological remains (above). Site LIA02 is located against the foot of Sefakwe. The site has limited stone walls (below).

6.2.2.2 Site LIA02

Site LIA02 is located along the northern foot of Sefakwe and is characterised by the absence of any stone walls. However, it is highly likely that the site date from the Late Iron Age.

It seems as if the site may cover a large surface area although its outer boundary is unclear due to the presence of a dense tree cover across the site.

6.2.2.3 Site LIA03

This large settlement is located on a plateau along the north-eastern slope of Sefakwe. It comprises a level area in the east which merely consists of an archaeological deposit without any stone walls and a dense concentration of stone walls in the west. These stone walls include enclosures with relatively high walls. The settlement style of the site does not reveal a typical Tswana pattern.

6.2.2.4 Site LIA04

Site LIA04 comprises a simple stone walled site against the south-eastern foot of Sefakwe. This settlement is composed of a half-circular wall which embraces what the site entails whilst the opposing ends abut against the lower foot of the hill.

No visible surface features occur on Site LIA04 and no archaeological remains were observed. The site is partly covered with trees and other vegetation which does not allow for the detection of archaeological remains.

Figures 12 & 13- Site LIA03 is an extensive stone walled site which is located along the north-eastern foot of Sefakwe. This site is partly covered with stone walls whilst the remainder of the site is characterised by an archaeological deposit (above and below)

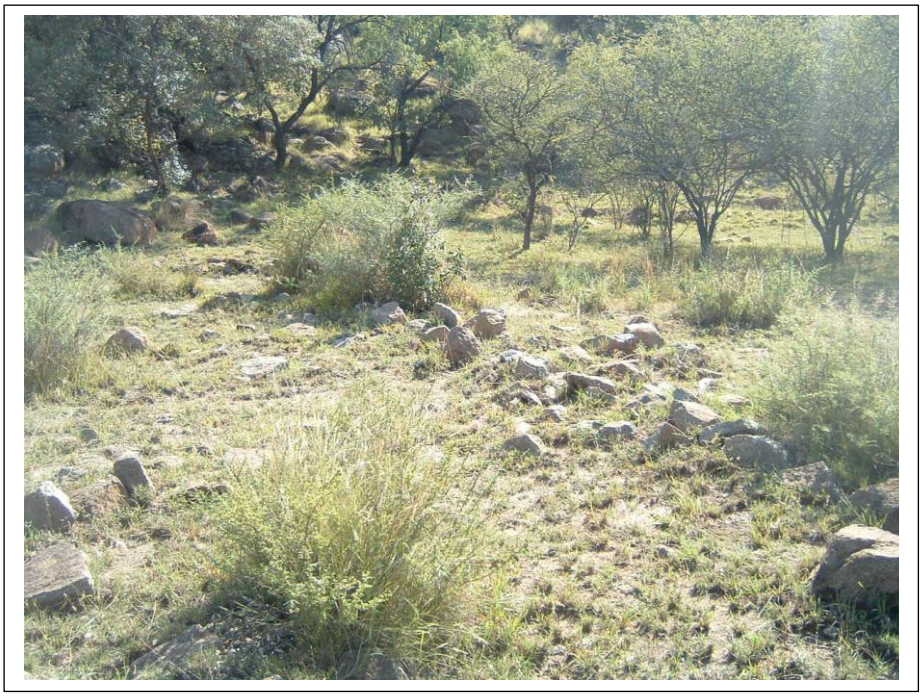


Figure 14- Site LIA04 hugs the lower foot of Sefakwe as it comprises and outer wall which joins the settlement with the hill. The site has limited features and other archaeological remains (above).

6.3 Table

Stone walled site	Coordinates	Description
LIA01	25º 26.379' 27º 13.411'	Archaeological deposit northern foot of Tlhatlhane
LIA02	25º 26.601' 27º 13.599'	Site with stone walls but not as prominent as most other atone walled sites northern foot of Tlhatlhe
LIA03	25º 26.762' 27º 13.791'	Extensive stone walled site along northern foot of Sefakwe
LIA04	25º 26.823' 27º 13.777'	Simple stone walled site with outer boundary wall eastern foot of Sefakwe

Table 1- Coordinates for a Late Iron Age settlements along the base lines of Tlhatlhane and Sefakwe in the Shaft 18 Complex (above).

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

7.1 Possible impact on the stone walled sites

It is highly likely that the Impala Project will affect (impact) Site LIA03 and Site LIA04 along the base lines of Tlhatlhane and Sefakwe. The significance of these settlements therefore is indicated as well as the significance of the impact on these stone walled sites. Mitigation measures are outlined for those stone walled sites which will be affected (destroyed or altered) by the Impala Project.

It is highly unlikely that Site LIA01 and Site LIA02 will be affected by the Impala Project.

7.2 The significance of the stone walled sites

The significance of the stone walled sites can be described as medium to high when considering the following criteria (Table 3):

- The sites represent a cultural landscape. Each and every site is unique as it contributes to the significance of the cultural landscape which served as a cultural and historical unit representing the life-ways, customs and cultures of the pre-historical and historical Tswana and other indigenous groups who lived in the Bankeveld three to four hundred years ago.
- The investigation of the cultural landscape can contribute to a better understanding of the region's pre-history and history as the landscape fall within the sphere of the influence of the Bafokeng who was subjugated by Mazilikazi's Ndebele during 1827 to 1832.
- The settlements have educational and research value which have to be unlocked by means of a further (Phase II) study.

:

Significance rating	Criteria for significance rating	Mitigation/Management Measures
High (3)	National/provincial value Educational, research, aesthetical conservation value Future use	Conserve unaffected for posterity (preferably) *in situ*
Medium (2)	Provincial value Medium educational, research, aesthetical conservation value No future use	Phase II investigation before demolishing. Permitting required
Low (1)	Local and site specific value Low educational, research, aesthetical conservation value No future use	Document during Phase I HIA Demolish during construction. No permitting required

Table 2- The significance rating for LIA settlements in the Project Area (above).

7.3 The significance of the impact on the stone walled sites

The significance of potential impact on the stone walled site was determined using a ranking scale, based on the following:

- Occurrence
  - Probability of occurrence (how likely is it that the impact may/will occur?), and
  - Duration of occurrence (how long may/will it last?)
- Severity
  - Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
  - Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?)

Each of these factors has been assessed for each potential impact using the following ranking scales:

Probability: 5 – Definite/don't know 4 – Highly probable 3 – Medium probability 2 – Low probability 1 – Improbable 0 – None	Duration: 5 – Permanent 4 - Long-term (ceases with the operational life) 3 - Medium-term (5-15 years) 2 - Short-term (0-5 years) 1 – Immediate
Scale: 5 – International 4 – National 3 – Regional 2 – Local 1 – Site only 0 – None	Magnitude: 10 - Very high/don't know 8 – High 6 – Moderate 4 – Low 2 – Minor

The environmental significance of each potential impact was assessed using the following formula:

Significance Points (SP) = (Magnitude + Duration + Scale) x Probability

The maximum value is 100 Significance Points (SP). Potential environmental impacts are rated as very high, high, moderate, low or very low significance on the following basis:

- More than 80 significance points indicates VERY HIGH environmental significance.
- Between 60 and 80 significance points indicates HIGH environmental significance.
- Between 40 and 60 significance points indicates MODERATE environmental significance.
- Between 20 and 40 significance points indicates LOW environmental significance.
- Less than 20 significance points indicates VERY LOW environmental significance.

LIA sites	Probability of impact on site	Magnitude of impact on site	Duration of impact on site	Scale of impact on site	Significance points	Significance rating
LIA01	**2**	**2**	**5**	**1**	**8**	**Very low**
LIA02	**2**	**2**	**5**	**1**	**8**	**Very low**
LIA03	**5**	**10**	**5**	**1**	**80**	**HIGH**
LIA04	**5**	**10**	**5**	**1**	**80**	**HIGH**

Table 4: The significance of impacts on Late Iron Age sites in and near the Project Area (above).

The significance of the impact on Site LIA01 and Site LIA02 is very low. The significance of the impact on Site LIA03 and Site LIA04 is high (Table 4).

7.4 Mitigating the stone walled sites

The following mitigation measures have to be applied to Site LIA03 and Site LIA04 if these stone walled settlements are to be affected by the Impala Project.

The Late Iron Age and historical 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 the South African Heritage Resources Authority (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 will be published in a report to SAHRA. After the Phase II investigation has been completed Implats must obtain a demolition permit from SAHRA which would authorise the demolishing of these remains.

8 CONCLUSION AND RECOMMENDATION

The Phase I HIA study for the Impala Project Area revealed the following types and ranges of heritage resources as are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in and near the Shaft 18 Complex, namely:

- Stone walled sites which date from the Late Iron Age.

The stone walled sites near the shaft complex were geo-referenced and mapped (Figures 9; Table 1). Their significance is indicated as well as the significance of the impact of the Impala Project on these stone walled sites (Tables 3 & 4). Mitigation measures are outlined for those stone walled sites which will be affected by the Impala Project.

Possible impact on the stone walled sites

It is highly likely that the Impala Project will affect (impact) Site LIA03 and Site LIA04 along the base lines of Tlhatlhane and Sefakwe. The significance of these settlements therefore is indicated as well as the significance of the impact on these stone walled sites. Mitigation measures are outlined for those stone walled sites which will be affected (destroyed or altered) by the Impala Project.

It is highly unlikely that Site LIA01 and Site LIA02 will be affected by the Impala Project.

The significance of the stone walled sites

The significance of the stone walled sites can be described as medium to high when considering the following criteria (Table 3):

- The sites represent a cultural landscape. Each and every site is unique as it contributes to the significance of the cultural landscape which served as a cultural and historical unit representing the life-ways, customs and cultures of the pre-historical and historical Tswana and other indigenous groups who lived in the Bankeveld three to four hundred years ago.
- The investigation of the cultural landscape can contribute to a better understanding of the region’s pre-history and history as the landscape fall

within the sphere of the influence of the Bafokeng who was subjugated by Mazilikazi's Ndebele during 1827 to 1832.

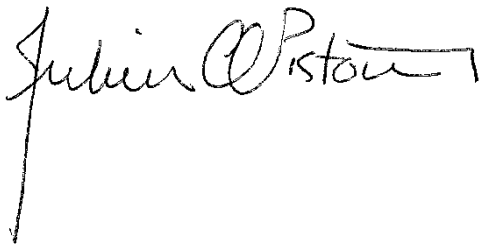
- The settlements have educational and research value which have to be unlocked by means of a further (Phase II) study.

The significance of the impact on Site LIA01 and Site LIA02 is very low. The significance of the impact on Site LIA03 and Site LIA04 is high (Table 4).

Mitigating the stone walled sites

The following mitigation measures have to be applied to Site LIA03 and Site LIA04 if these stone walled settlements are to be affected by the Impala Project.

The Late Iron Age and historical 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 the South African Heritage Resources Authority (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 will be published in a report to SAHRA. After the Phase II investigation has been completed Implats must obtain a demolition permit from SAHRA which would authorise the demolishing of these remains.



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Member ASAPA

AMENDMENTS TO THE IMPALA SHAFT 18 COMPLEX IN ORDER TO AVOID STONE WALLED SITES LIA03 AND SITE LIA04

Impala has indicated that Eskom's substation which will impact on Site LIA03 and Site LIA04 will be moved in order not to impact on any of the Late Iron Age settlements (Site LIA01 to Site LIA04) which are located on the north-eastern perimeter of the Shaft 18 Complex.

A further investigation (Phase II) of Site LIA03 and LIA04 therefore would not be necessary if the Eskom Substation is moved not to impact on (collide with) the stone walled sites.

Recommendations

It is recommended that the Eskom substation be moved to the opposite side (from the north to the south) of the Shaft 18 Complex. If this is not possible it is recommended that the substation must be moved at least fifty meters away from the nearest stone walled site. No power lines may cross the stone walled settlements whist no pylons may be erected within a distance of closer than fifty metres from the stone walled sites.

No mitigation measures are recommended for the stone walled sites as they are naturally protected by their location to the 'back side' of the kopje Sefakwe, away from where the development will take place and where no roads or other development will take place.

The demarcation of the sites with a fence is not advised: this may cause unnecessary damage to the unspoilt area or may focus the attention of vandals or unsavoury characters on these remains. The security arrangements that are in place at Impala's shaft complexes (e.g. patrol of border fences) provide adequate cover to see that no damage needs to be caused to the archaeological sites in close proximity of the Shaft 18 Complex.

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APPENDIX A: DETAILS OF THE SPECIALIST

Profession: Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide Trainer and Heritage Consultant

Qualifications:

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

Work experience:

Museum curator and archaeologist for the Rustenburg and Phalaborwa Town Councils (1980-1984)

Head of the Department of Archaeology, National Cultural History Museum in Pretoria (1988-1989)

Lecturer and Senior lecturer Department of Anthropology and Archaeology, University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Consultant (2003-)

Accreditation: Member of the Association for Southern African Professional Archaeologists. (ASAPA)

Summary: Julius Pistorius is a qualified archaeologist and heritage specialist with extensive experience as a university lecturer, museum scientist, researcher and heritage consultant. His research focussed on the Late Iron Age Tswana and Lowveld-Sotho (particularly the Bamalatji of Phalaborwa). He has published a book on early Tswana settlement in the North-West Province and has completed an unpublished manuscript on the rise of Bamalatji metal workings spheres in Phalaborwa during the last 1 200 years. He has excavated more than twenty LIA settlements in North-West and twelve IA settlements in the Lowveld and has mapped hundreds of stone walled sites in the North-West. He has written a guide for Eskom's field personnel on heritage management. He has published twenty scientific papers in academic journals and several popular articles on archaeology and heritage matters. He collaborated with environmental companies in compiling State of the Environmental Reports for Ekhurhuleni, Hartebeespoort and heritage management plans for the Magaliesberg and Waterberg. Since acting as an independent consultant he has done approximately 800 large to small heritage impact assessment reports. He has a longstanding working relationship with Eskom, Rio Tinto (PMC), Rio Tinto (EXP), Impala Platinum, Angloplats (Rustenburg), Lonmin, Sasol, PMC, Foskor, Kudu and Kelgran Granite, Bafokeng Royal Resources etc. as well as with several environmental companies.

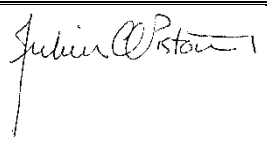
APPENDIX B: DECLARATION OF INDEPENDENCE

I, Julius CC 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 Heritage Resources Act (No 25 of 1999) 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:
Private Consultant

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Name of company:
5 January 2012

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Date:

_____
Signature of the Commissioner of Oaths:

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Date:

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Designation: