Prepared for:

PILANESBERG PLATINUM MINES (PPM)

A HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR PILANESBURG PLATINUM MINES' (PPM) PROPOSED ROCK WASTE DUMP EXTENSION NEAR THE PILANESBERG IN THE NORTH-WEST PROVINCE OF SOUTH AFRICA

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EXECUTIVE SUMMARY

Pilanesberg Platinum Mines (PPM) intends to extend an existing rock waste dump on the farm Tuschenkomst 135JP north of the Pilanesberg in the North-West Province of South Africa. The rock waste dump is located between an existing open cast pit and an arbitrary established cultural landscape which has been identified during earlier heritage impact assessments studies for PPM (Pistorius 1996a, 1996b).

Given the possibility that heritage resources may exist on the surface area onto which the proposed rock waste dump will be extended (referred to as the Project Area), PPM commissioned the author to conduct a Phase I Heritage Impact Assessment (HIA) study for the proposed extended rock waste dump with the following aims, 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 (extended rock waste dump) 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 extended rock waste dump.
- To determine whether the extended rock waste dump may impact on the arbitrary established cultural landscape with its numerous stone walled sites.

The Phase I HIA study for the Project Area (proposed extended waste rock dump) revealed none of the types and ranges of heritage resources as identified in Section 3 of the National Heritage Resources Act (No 25 of 1999). Consequently, the proposed extended waste rock dump as outlined in Figure 1 need not to affect any of the stone walled sites along the foot of either Mogare or Phatswane and can therefore be constructed in this location.

PPM has proposed that a corridor, which is approximately 50m wide, has to be maintained between the proposed extended waste rock dump and the eastern leg of the cultural landscape. This corridor will ensure that the rock waste dump does not encroach upon the cultural landscape. The corridor between the cultural landscape and the rock waste dump has to be maintained and can only be altered after PPM has received

approval from the South African Heritage Resources Agency (SAHRA) that encroachment on the cultural landscape may occur.

It was also pointed out that if development activities, particularly of large mining infrastructure (e.g. tailings dams or waste rock dumps) should occur in close proximity of the cultural landscape such activities could cause a physical or a non-physical impact on the cultural landscape. Non-physical impacts would occur on the intangible aspects of cultural landscapes, the sense of place associated with the stone walled sites and their setting in the landscape or on the visual appearance of these historical townscapes.

The historical and cultural context, as well as the research and educational (tourism) potential of the cultural landscape will diminish significantly if any development occurs on the level plain (between) these mountains or too close to the foot slopes of Mmatone, Mogare or Phatswane. A gradual encroachment on the cultural landscape will affect its unique natural and cultural features and inevitably cause physical (even if accidental) damage to elements of this complex.

Cultural landscapes such as the stone walled sites associated with Mmatone, Mogare and Phatswane are protected by Section 3 of the National Heritage Resources Act (Act No 25 of 1999). However, the cultural landscape in the PPM's premises need not be viewed as an obstacle to future mining operations. This cultural phenomena must be incorporated, unaffected and imaginatively, in any future mining operations. These resources can then be utilized to fulfil some of the mine's social obligations. The National Heritage Resources Act (Act No 25 of 1999) encourages the use of heritage resources for leisure, enjoyment, education and training (social upliftment).

Consequently, the cultural landscape as well as sites such as Mabjaneng and Motsotsodi outside the cultural landscape can be managed and protected by implementing a cultural heritage management programme. Such a programme would provide for the conservation of these heritage sites; unlock the wealth of information associated with these sites and retrieve some of the abundance of material remains housed in these sites by means of excavations. This information can be used (in conjunction with the sites) to train heritage and field guides; allow for the cultural landscape and other heritage sites to be incorporated in the Pilanesberg tourism industry and for heritage resources in the Pilanesberg mining

area to be monitored by means of annual audits. (The Rio Tinto group has implemented cultural heritage management programmes for their mines world-wide. Palabora Mining Company (PMC) in South Africa in conjunction with the author is also currently pursuing such a programme).

CONTENTS

1 INTRODUCTION

This document contains the report on a Phase I Heritage Impact Assessment (HIA) study which was done for Pilanesberg Platinum Mines (PPM) proposed extension of its waste rock dump on the farm Tuschenkomst 135JP north of the Pilanesberg in the North-West Province of South Africa**.**

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

Pilanesberg Platinum Mines (PPM) intends to extend an existing rock waste dump on the farm Tuschenkomst 135JP north of the Pilanesberg in the North-West Province of South Africa. The rock waste dump is located between an existing open cast pit and an arbitrary established cultural landscape which has been identified during earlier heritage impact assessments studies for PPM (Pistorius 1996a, 1996b).

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- 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 (extended rock waste dump) 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 extended rock waste dump.
- To determine whether the extended rock waste dump may impact on the arbitrary established cultural landscape with its numerous stone walled sites.

3 METHODOLOGY

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

- Considering and evaluating data collected during earlier surveys for the PPM (previously Boynton Platinum) during 2005 (see 'Select Bibliography', Part 8).
- Briefly surveying literature relating to the pre-historical and historical context of the Pilanesberg region.
- Surveying on foot the proposed extended waste rock dump area (Project Area) and the perimeter of the adjoining cultural landscape which borders on the Project Area.
- Synthesising the information obtained from the literature survey and maps with the evidence derived from the fieldwork.

3.1 Earlier data

Phase I HIA studies were done for Boynton (Pilanesberg) Platinum Mine during 2005 and 2006. The results of these studied were published in the following reports:

- Pistorius, J.C.C. 2006a. *A Phase I Heritage Impact Assessment (HIA) study for Boynton Platinum's new proposed mining areas near the Pilanesberg in the North-West Province of South Africa.* Unpublished report prepared for Metago Environmental Engineers.
- Pistorius, J.C.C. 2006b. *An extended Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mines (PPM) new proposed mining areas near the Pilanesberg in the North-West Province of South Africa.* Unpublished report prepared for Metago Environmental Engineers.

3.2 Literature survey and maps

Literature relating to the pre-historical and the historical unfolding of the Pilanesberg area was reviewed. This review focused on local Tswana groups such as the Kgatla Kgafêla and the Tlhako who live along the northern perimeters of the Pilanesberg. (The history of the origins of the Tlôkwa who live slightly further to the west of the Pilanesberg was not reviewed). The presence and influence of Mzilikazi of the Ndebele in the Pilanesberg was also emphasised, as the remains found in the course of this study suggest that one of his village complexes may have stood in what is now the proposed mining area.

It is important to contextualise the pre-historical and historical background of the Pilanesberg area in order to comprehend the identity and meaning of heritage sites in the Project Area and subsequently to determine the significance of any remains which may be affected by the extended waste rock dump (see Parts 4 & 8).

In addition, the project and wider area were also studied by means of the 1:50 000 topographical maps on which the mining and project areas appear (2527AA Saulspoort, 1:50 000).

3.3 Fieldwork

The Project Area covers part of the farm Tuschenkomst 135JP to the north-west and north of the Pilanesberg in the North-West Province. The proposed new extended waste rock dump area was surveyed on foot where there were accessible foot paths.

3.4 Mapping heritage resources

All the stone walled sites in the identified cultural landscape were geo-referenced using a GPS instrument and they were thereafter mapped in Arch View. The Late Iron Age sites occur in exceptionally large numbers and concentrations and not all of the individual sites were geo-referenced and mapped. Only the sites occurring along the foot slopes of Matone, Mogare and Phatswane were mapped (Figure 1; Tables 1-3).

3.5 Assumptions and limitations

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 extension of the waste rock dump 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.

3.6 Some remarks on terminology

Terms that may be used in this report are briefly outlined in Box 2.

Box 2- Terminology relevant to this report

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act , Act 25 of 1999 (see Box 1).

Heritage 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.

The term 'pre-historic' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the project area, to the first appearance or use of 'modern' Western writing brought to the Rustenburg, Marikana and Pilanesberg areas in the North-West Province by the first colonists who settled in this area after c. 1839.

The term 'relatively 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 may, however, be almost sixty years old and these may qualify as heritage resources in the near future.

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

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

The term '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 200 years ago).

The term '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.

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

The term 'mining area' ('critical area') refers to the area where the developer wants to focus development activities.

The term 'peripheral area' refers to the area that will not be affected by the proposed new development activities.

The 'project area' refers to both the mining and peripheral areas.

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given 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 bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the cooperation and approval of SAHRA.

4 THE PROJECT AREA

4.1 Location

PPM's extended waste rock dump will be located on the farm Tuschenkomst 135JP to the north of the Pilanesberg in the North-West Province of South Africa. The extended waste rock dump (Project Area) covers an elongated piece of land which stretches from the north, near the south-eastern foot of Mogare southwards to the north-eastern foot of a second mountain called Phatswane.

Mogare and Phatswane in conjunction with Mmatone, a third mountain which is located to the west of these two mountains, is associated with large numbers of single and clustered stone walled sites which together constitute a cultural landscape with high archaeological, historical and cultural significance (2527AA Saulspoort, 1:50 000) (Pistorius 2006a, 2006b) (Figure 1).

The Project Area therefore is located between an open cast mine pit and existing rock dump (east) and the cultural landscape (west). This area will be negative affected due to the fact that thousands of tons of waste rock will be dumped in the Project Area. The waste rock will be re-dumped in the open cast pit when PPM's rehabilitation program is activated in the future.

4.2 The Pilanesberg as a natural heritage resource

The Project Area is located near the Pilanesberg which is a unique natural landmark and therefore forms part of South Africa's natural heritage. This complex of mountains consists of an eroded circular alkaline volcanic structure, 1 250 million years old, in the low-lying Bushveld Complex. This extinct volcano is 27km in diameter and it is surrounded by six rings of mountains. The result is a circular mountainous region which stands in stark contrast to the surrounding

open plains, creating a unique enclave for human occupation and utilisation from the earliest times. During the Late Iron Age, access to the Pilanesberg was controlled by well-positioned and extensive settlements near the periphery of this circular mountain range, close to some of the entrances leading to the pathway-like valleys which criss-cross the central part of the Pilanesberg.

The Pilanesberg National Park was developed in and around this extinct volcano and covers a surface of 500km². The park was opened in 1979 and it now contains examples of most southern African mammals and some 300 bird species. The central feature of the park is a man-made lake known as Mankwe on the river by the same name.

Sun City, on the edge of the Pilanesberg, was the first of several casinos and holiday resorts to be established on the South African veldt soon after the Bophuthatswana homeland was granted independence in 1977. The complex incorporates the Superbowl, a huge concert area, four luxury hotels, including the Palace of the Lost City, as well as many sporting and gambling facilities and an artificial beach, the Valley of the Waves.

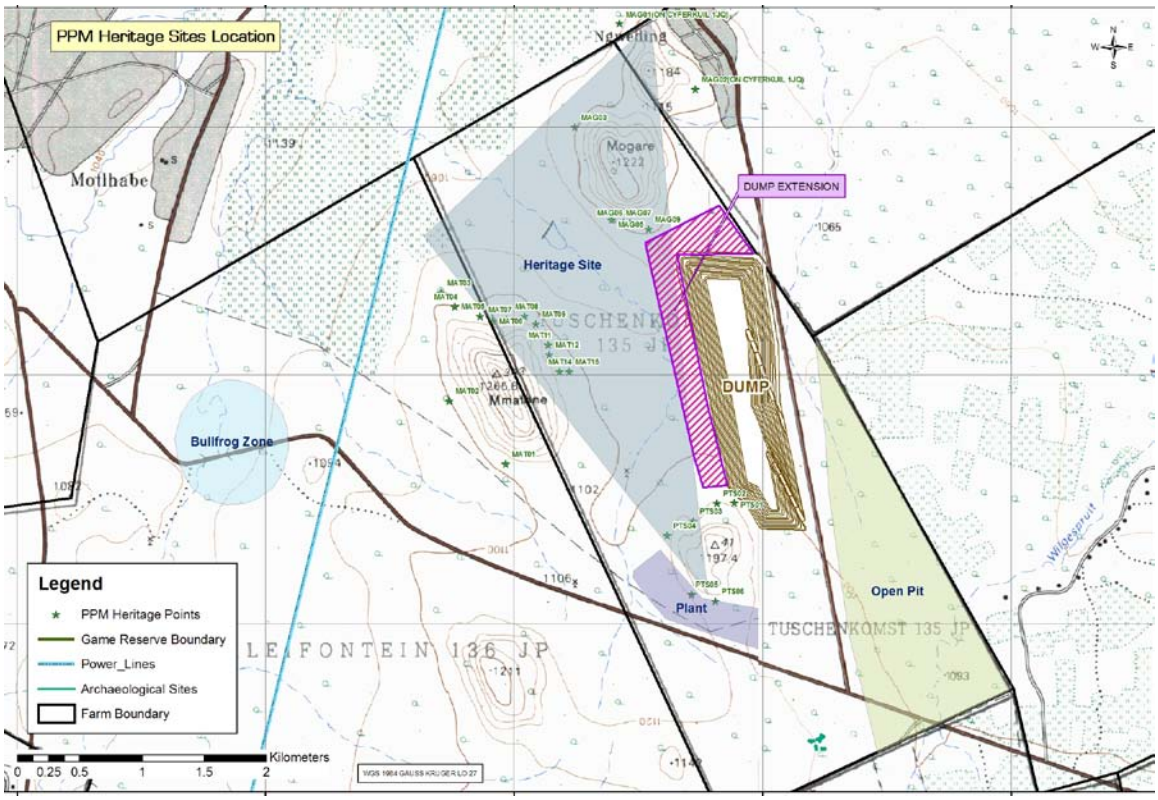


Figure 1- Pilanesberg Platinum Mines' (PPM) proposed extended rock waste dump is located between an arbitrary cultural landscape with high significance in the west and an existing waste rock dump and open cast pit in the east.

The cultural landscape is constituted by large concentrations of stone walled sites which are located along the base lines of Mmatone, Mogare and Phatswane (above).

5 CONTEXTUALISING THE PROJECT AREA

A brief overview of pre-historical and historical information is provided below to contextualise the Project Area in order to help to determine the significance of any heritage resources that may occur in the Project Area.

5.1 Stone Age sites

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or that are part of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (the period from 22 000 years ago to about 2 000 years ago).

These three Stone Ages can be divided into different ‘cultural’ periods, each of which is characterised by specific hominids, artefact types and lifestyles. These cultural periods existed under different climatic conditions and did not necessarily cover the same periods in different regions of South Africa.

A few isolated, haphazardly scattered stone tools were observed throughout the Pilanesberg Platinum Mines Project Area. These tools date from the Middle Stone Age and include two Mousterian cores, a blade and an end scraper. These stone tools were not geo-referenced, as they were too limited in number.

The Late Stone Age is associated with rock paintings and engravings done by the San, Khoi Khoi and, in more recent times, by Negroid (Iron Age) farmers. More than one spokesperson told the author that there are caves higher up Mmatone Mountain. Such phenomena, if they do exist, may contain stone tools dating from the Stone Age, Late Iron Age remains and even rock paintings. A few rock paintings have already been recorded in the Pilanesberg.

5.2 Late Iron Age remains

The Pilanesberg area is dominated by stone walled sites that date from the Late Iron Age, some of which were occupied into the historical period. These sites are associated with Tswana groups such as the Kgatla Kgafêla, the Tlhako, the Tlôkwa and Nguni-affiliated clans who were either living in the area from an earlier time, before the Sotho-Tswana arrived, or who were descended from Mzilikazi's Ndebele who temporarily occupied several settlement complexes in the area before they moved to the Zeerust-Marico area in AD1832. Large numbers of the descendants of these original Nguni-speaking people today live in Groenfontein, Rhenosterhoek and Kraalhoek, to the north of the project area.

The following contextual evidence serves as background to the project area: the origins of the Kgatla group; the history of the Kgatla Kgafêla and the Tlhako; the arrival of the first colonists and early chrome mining in the area.

5.2.1 Origins of the Kgatla group

The ancestral Kgatla were composed of the Kgatla, the Tlôkwa, the Makgolokwe and probably the Bahlakwana and the Basia sections. (The latter three clans no longer exist). The Kgatla also maintained that there was an early relationship with the Hurutshe (under common chiefs such as Malekele-Masilo-Legabo) which may date back to AD1450 when the Hurutshe and Kwena separated. These earliest Kgatla groups initially lived in the central part of the former Transvaal province, somewhat to the south of what is today Thabazimbi, near the Rooiberg Tin Mines.

Phohoti, the son of Mokgatle, is usually regarded as the first Kgatla chief. His son and successor was Botlholo (Mashiasebara), whose sons Mogale, Pule and Modise split up. Pule initially ruled on behalf of Mogale's son Mosetlha, who died

before he could succeed, and this encouraged Pule (whose son Masego died before his father) to leave the tribe and to form a separate tribe under his grandson Kgafele. The Bothlolo's third son, Modise, and his son Tabane were the forefathers of the sections of the Mmakau, the Motša and the Seabe.

Today there are numerous subsections of the Kgatla. In 1953, a leading anthropologist distinguished at least eleven tribes within this group.

The totem of the Kgatla is the blue monkey (*kgabo*), although they also had another totem, the 'kgabo ya mollo', or the 'tip of the flame', which they used when the Kgatla were on the warpath.

Mogale, the ancestor of the Mosetlha, lived at a place called Dirolong/Direleng in the Bela Bela area (some say in the Rustenburg area). Mogale (Mosetlha) or Mashego (Kgafela) moved to Momuseng (the old Makapans Location). Towards the end of the 17th century, the Kgafela section broke away under Mahego (the son of the regent, Pule). However, Kgafela and his son Tebele remained east of the Crocodile River and Kgafela's grandson Masellane moved to Molokwane ('Vlieggepoort') near the confluence of the Crocodile and Pienaars Rivers. (This split was the result of a dispute whether Mosetlha, a woman, should rule the tribe). This was also the time when Tabane (the Mmakau section) broke away and settled at Mogwete (Varkfontein, in the Premier Mining area).

While the Kgatla Mosetlha remained one section, Tabane's branch later broke up into several tribes. Modise or Moptsha had a young wife who left the tribe while she was pregnant, as she was accused of witchcraft, saying that her child was crying in her womb. It was called 'lelela teng' ('crying inside'). This child later became the great Pedi chief Thulare, who was also called 'Thulare a Mmakau'. Further divisions of the Kgatla were caused by internal strife during the time of Mzilikazi.

5.2.2 Brief history of the Kgatla Kgafêla and the Tlhako

After the Kgafêla broke away from the Mosetlha at Momusweng (Makapans Location, Hammanskraal), probably during the first half of the 17th century, they settled in various places on their way to the north-west and the Crocodile River. Known places of settlement were Ntuane (to the north-west of Makapans Location near the Pienaars River), Momoseu (near Ntwane), and Tshekane (Leeuwpoort, south of the Rooiberg Tin Mine). Tshekane proved to be unhealthy, so they dwelt at Matone (Tuschenkomst) for a while and then settled at Molokwane ('Vlieggepoort', at the confluence of the Crocodile and Pienaars Rivers) near Ramakokas Location.

At the start of the 18th century, they lived at Mabule, Kruidfontein (near Saulspoort). During the first half of the 18th century, Kgwefane lived at Saulspoort in the Dithubaruba section of Moruleng. Molefe lived at Maramapong at Saulspoort. Towards the end of the 18th century, Phetso lived at Sefikile (Spitskop, 8km to the west of Northam). Letsebe ruled at Mabule (Kruidfonten) at the confluence of the Modderkuil and Middelkuil. When Senwelo was invested as chief, he moved from Mabule to Tlokwane (Rhenosterkop). Motlotle ruled at Magakwe or Dithubarubu (Kruidfontein).

Pilane built his village at Monamaneng (Kafferskraal). Later he moved to Bogopana (Witfonteinrand), to the north-east of Witfontein, and from there to Mmamodimokwana (Schilpadsnest) near the Crocodile River.

After the Matabele invasion in 1827, Pilane went to live at Motsitle (Mabeskraal). After 1837, he settled at the Elands River at Mmasebudule (Rhenosterfontein).

During the Matabele invasion, the Kgatla were too weak to defend themselves. Consequently, they paid a tribute to the Ndebele. Nevertheless, their villages

were destroyed and the young men were incorporated into the Ndebele army. After the Ndebele had left the Pilanesberg area in 1832, Ndebele raiders returned to the area and took three of Pilane's sons with them in 1842. Molefi, Pilane's uncle, negotiated their release. Molefi, who maintained good relations with the Ndebele, took charge of the tribe when Pilane fled to the Langa Ndebele.

The far northern part of Kgatla territory, incorporating the farms Holfontein, Cyferfontein and Rhenosterkraal, was a separate tribal section for some years under the authority of a sub-chief, Dikema Pilane. He played an important role in the times of Paul Kruger. It was also in this far northerly area that the descendants of one of Mzilikazi's sons lived.

Kgamanyana lived at Moruleng, the present tribal headquarters at Saulspoort. In 1869, Kgamanyana and many tribesmen left the country to settle at Mochudi, on the banks of the Nkgotwane River in Botswana, after camping one year at Tshwene-Tshwene (near Vleesfontein). The other part of the tribe remained at Saulspoort and acquired most of the farms to the north of the Pilanesberg.

Many of these Tswana clans were uprooted during the *difaqane* when Mzilikazi's Matabele (Ndebele) entered the North-West Province, crossing the Magaliesberg at Mpame (Kommandonek) in the middle of August 1832.

From this brief historical overview, it is clear that the mountain Mmatone was occupied by the Kgatla, while the Pilanesberg Platinum Minesproject area to the north of the Pilanesberg covers much of the sphere of influence of one section of the Kgatla. This group probably intermarried with Mzilikazi's Ndebele, especially given that some of his sons remained in the area after the Ndebele moved westwards. Descendants of this mixed Ndebele/Tswana population still live in the area today. A similar situation occurred to the north of Rustenburg, south of Phokêng, where the Ndebele intermarried with their Tswana neighbours, the Fokeng.

The Tlhako is one of the numerous Nguni-related clans who lived in the central part of the former Transvaal province from early on. They branched off from the Ndzundza-Ndebele who lived near what is today the Premier Mine (Cullinan, Mangolwana) and Wonderboom (Pretoria). Thereafter they dwelt in the Boshoek (Pharami) area for some time, before settling along the Thulani River near Pella towards the end of the 17th century.

Chief Seutlwane settled on the northern slope of Pilwe Mountain. His son, Mabe, who lived about the middle of the 18th century, moved six kilometres further to the north to Mothoutlung on the eastern part of Palmietfontein. Mabe's youngest son, Motsisi, went to live at Legatalle, to the north-east of Ruighoek 426, where he became involved with a long struggle with the Kgatla Kgafêla. His son, Molotsi, also lived and died at Legatalle, probably around AD 1820 to 1830.

Mabe became chief in 1820 and settled at Motsitle, today known as Mabieskraal. When Mzilikazi invaded the region, the Tlhako did not leave the area, but were subjugated by the Ndebele. Many of the Tlhako later accompanied the Ndebele and crossed the Marico River to settle with the Ndebele at Silkaatskop. However, when the Ndebele were defeated by the Voortrekkers in the far North-Western Transvaal, many returned to their old home at Motsitle in 1837.

Maabe and the Voortrekkers' relationship deteriorated. After he was flogged by the Boers in c 1860, the tribe moved to Molepolole and settled at Magagarape, where Maabe died in 1869. His sons Moetle, Mokgatele, Leotwane and Setadi returned to Mabeskraal.

Moetle Mabe became chief in 1870. He raided the cattle of the local white farmers and also supplied labour to surrounding white farmers. He died on 15 May 1908.

The Tlhako's sphere of influence overlaps the southern and western parts of the Pilanesberg Platinum Mines. Stone walled sites on Ruighoek 169JP can therefore possibly be associated with this group.

5.3 Arrival of the first colonists

During the first half of the 19th century, the first colonial traders who operated between the far north-west and the central part of the Bankeveld used the gap between the northern tip of the Magaliesberg and the south-western edges of the Pilanesberg, near the Pilanesberg Platinum Mines, as a corridor. Wagons passed through this corridor on their way to Rustenburg and further to the east. Several traders, missionaries, a scientific expedition and adventurers trekked between the Magaliesberg and the Pilanesberg and they observed numerous Late Iron Age communities living in this part of the north-west.

Rustenburg, to the far south of the PPM, was the first colonial town to be established by Europeans (Voortrekkers) during the first half of the 19th century. Closer to Pilanesberg, Boshoek was established along the railway line from Pretoria, and the town initially served as a terminus.

5.4 Early chrome mining

It has long been known that there were chrome ores in the Bushveld Igneous Complex. They were indicated on Carl Mauch's geological map of the area close to the Hex River near Rustenburg, which he visited in 1865. Chromite is also mentioned in official reports that were compiled by a certain Molengraaf. The first exploration for chrome occurred in 1917, and general production of the metal began in 1924, when 4 570 tons were mined.

Chromite is present in the Bushveld Igneous Complex as layers in the piroxinite, norite and anorthosite units and to a certain extent also in the harzburgiet unit. The deposits in the Complex can be divided into a Western Zone and an Eastern Zone.

The deposits in the Western Zone stretch for approximately 200km from Brits to Rustenburg, further northwards to the west of the Pilanesberg, and from there, with some interruptions of seven to thirteen kilometres, to near the Crocodile River. The Eastern Complex starts near Draailkraal at the upper reaches of the Dwars River in the Lydenburg district. Further northwards the deposit crosses the Steelpoort River near the Steelpoort station and gradually turns north-westwards as far as Scheiding – a total distance of 120 kilometres.

The Western Zone can be divided into four sections, namely a sector to the north of Rustenburg, two sectors to the west and to the north of the Pilanesberg, and a sector in the Brits-Rustenburg area.

The sector to the west of the Pilanesberg seems to have been exploited the most. Here two distinct layers were distinguished, namely the Groenfontein layer and the Main Layer higher up in the sequence. These layers vary in thickness on farms such as Palmietfontein 208JP, Groenfontein 138JP and Ruighoek 169JP.

By the start of 1974, seventeen chrome mines were already operating: eight in the Western Zone, six in the Eastern Zone, two in Marico and one near Mokopane.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY (HIA)

6.1 Types and ranges of heritage resources

The Heritage Impact Assessment study for the Project Area (extended waste rock dump) revealed none of the types and ranges of heritage resources as identified in Section 3 of the National Heritage Resources Act (No 25 of 1999).

The Phase I HIA study is briefly described an illuminated with a few photographs.

Figure 2- The Project Area as seen from the dirt road running to. The extended waster rock dump will run southwards from the south-eastern foot of Mogare (in the north) to the north-eastern foot of Phatswane (above).

Fig 3 & 4- The Project Area is a degraded piece of land as a result of the collecting of firewood over a long period of time (above). The open cast pit east of the proposed extended waste rock dump which will end at the north-eastern foot of Phatswane (background) (below).

6.2 Earlier studies

Earlier Phase I HIA studies which were done for the PPM (Pistorius 2006a & b) 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):

- Large numbers of isolated stone walled sites and clusters of stone walled sites dating from the Late Iron Age on Ruighoek 169JP, Witkleifontein 136JP and Tuschenkomst 135JP. The individual and clusters of stone walled sites along the foot slopes of Phatswane, Mogare and Mmatone were identified and demarcated in an arbitrary cultural landscape.
- Informal abandoned graveyards dating from the historical period and formal graveyards which are still being used in all the rural villages surrounding the Project Area.
- Historical remains dating from the more recent past are present, such as the old village of Motlhabe and an extensive homestead on Witkleifontein 136JP.
- Mining heritage remains which can be divided into remains reflecting rudimentary prospecting activities and formal mining heritage remains which include infrastructure and technological equipment.
- A limited number of stone tools occur haphazardly across the larger Project Area.
- Historical houses occur in villages such as Ngweding, Ntsana-le-Metsing and Motlhabe on the perimeter of the Project Area.

Only the stone walled sites demarcated in the cultural landscape adjacent (to the west of the Project Area) have a bearing on the extended waste rock dump. These stone walled sites were geo-referenced. Their co-ordinates were determined by means of a GPS instrument and most of these stone walled sites were mapped. The stone walled sites have been assigned a code (MOG [Mogare], MAT [Mmatone] and PS [Phatswane]) in order to simplify their identification and description (Figure 1; Tables 1-3).

6.3 Heritage resources in the cultural landscape

A broad description of the stone walled sites in the triangular cultural landscape to the west of the extended waste rock dump is provided below. Some of these stone walled sites are also illustrated by means of photographs.

Large numbers of Late Iron Age stone walled sites - some individual others clustered in groups - occur along the lower slopes of Mogare, Mmatone and Phatswane. The clusters of stone walled sites are composed of varying numbers of individual sites (*dikgôrô* or *imisi*) that were grouped together to form villages which covered large areas. All these clusters are located along the lower contours or along the spurs of these mountains. The majority of the stone walled sites are confined to four mountains on the farms Tuschenkomst 135JP and Witkeifontein 136JP, namely Mogare, Mmatone, Patswane and Mukukunupu (the latter falls outside the Project Area).

The following settlement types can be distinguished:

- Zulu or Ndebele villages *(*singular *umuz*i, plural *imizi*) were composed of oval outer walls that enclosed an inner set of structures consisting of several isolated or linked (cattle) enclosures and dwellings for the various *ezigabeni* (regiments) on opposite sides of centrally situated cattle enclosures, as well as an upper *isigodlo* area, where the village chief (*induna*) lived. Several of these Zulu (Ndebele) *imizi* were observed on Mogare and Mmatone.
- Tswana villages (singular *motse*, plural *metse*) were composed of a single village (*kgôrô*) or a conglomeration of villages (*dikgôrô*). A typical *kgôrô* is characterized by an outer scalloped wall that encircles central kraal complexes that were usually linked together. The outer scalloped walls still contain the remains of dwellings (huts) within their surrounding yards (*malapa*) that were occupied by the various family groups (*masika*), central kraal complexes composed of courts (*makgotla*) and enclosures for

domestic stock. Tswana sites are common on Phatswana, but also occur on Mmatone and Mogare.

- There are some sites that are composed of long terrace walls that are 'stepped' down the slopes of mountains. The terrace walls are associated with a few small and large enclosures. These sites are not demarcated with clear outer boundary walls. It is possible that these sites, which also occur elsewhere in the Rustenburg and Brits areas, may have been built by Ndebele people.
- Sites were found that display a combination of Zulu (Ndebele) and Tswana features, such as Site MAG07 on Mogare, which has well-defined regimental quarters (*ezigabeni*). Such quarters are a characteristic feature of Zulu villages. These quarters occur in one half of the settlement and *malapa*, a Tswana feature, occur in the other half of the site. It seems as if sites with mixed Tswana and Zulu features also occur on Mmatone.
- There were some sites with spatial compositions that could not be interpreted as yet, due to the dense vegetation cover on these sites at the time of the year when the study was done. However, it is expected that settlement types not previously recorded may occur in the clusters that were discovered on Mmatone, Magore and Phatswane.

Figures 5 & 6- Clusters of stone walled settlements on Mmatone, Mogare and Phatswane were occupied by Tswana, Zulu (Ndebele) and mixed populations of Tswana and Zulu (Ndebele) populations from the 17th century onwards. These settlements constitute a cultural landscape of formidable proportions (above and below).

LATE IRON AGE SITES (MMATONE	CO-ORDINATES	DESCRIPTION
MAT01	25º 05.774' 26º 58.770'	Medium-sized *umuzi* on western slope.
MAT02	25º 05.498' 26º 58.501'	Site with terraces on western slope.
MAT03	25º 05.026' 26º 58.462'	Large site on northern spur.
MAT04	25º 05.088' 26º 58.526'	Site with inferior walls, differ from other sites.
MAT05	25º 05.130' 26º 58.647'	Extensive site next to northern spur.
MAT06	25º 05.149' 26º 58.709'	*UmuzI* next to stream, below kloof.
MAT07	25º 05.143' 26º 58.776'	Composed of long terraces. Niches with quartzite and iron ore.
MAT08	25º 05.129' 26º 58.860'	Extensive walls.
MAT09	25º 05.164' 26º 58.916'	Extensive and elaborate walls.
MAT10	25º 05.206' 26º 58.962'	Below saddle in mountain. Could be a main site.
MAT11	25º 05.255' 26º 58.973'	Inferior walls, next to stream.
MAT12	25º 05.297' 26º 58.978'	Extensive, seems to contain scalloped walls.
MAT13	25º 05.321' 26º 59.016'	Covers very large surface. Could be a main site with large open spaces.
MAT14	25º 05.371' 26º 59.027'	Large site.
MAT15	25º 05.372' 26º 59.075'	Inferior, compared with the cluster.

Table 1- Co-ordinates for Late Iron Age sites along the foot of Mmatone on the farms Witkleifontein 136JP and Tuschenkomst 135JP.

LATE IRON AGE SITES (MAGORE)	CO-ORDINATES	COMMENTS
MAG01 (ON CYFERKUIL 1JQ)	25º 03.852' 26º 59.314'	Located on northern spur of Mogare. Square dwellings and enclosures (historical).
MAG02 (ON CYFERKUIL 1JQ)	25º 04.139' 26º 59.678'	Located on southern spur of Mogare (probably historical).
MAG03	25º 04. 306' 26º 59.101'	On northern slope of Mogare.
MAG04	From: 25 04. 590' 26º 59.115' To: 25º 04. 504' 26º 59.085'	Single, large *umuzi* as part of a cluster of sites.
MAG05	25º 04.710' 26º 59.279'	Zulu *umuzi.*
MAG06	25º 04.721' 26º 59.335'	*Umuzi* with *izigabeni* on one side and *malapa* on other side.
MAG07	25º 04.721' 26º 59.366'	Located above TSK06. Haphazard spatial location.
Complex MAG08	From: 25º 04.695' 26º 59.453' To: 25º 04.605' 26º 59.529'	This complex is composed of numerous sites with no definite settlement style.
MAG09	25º 04.749' 26º 59.454'	Situated on south-western spur of mountain.

Table 2- Co-ordinates for Late Iron Age sites along the slopes and spurs of Mogare on Tuschenkomst 135JP and part of Cyferkuil 1.

LATE IRON AGE SITES (PATSWANE)	CO-ORDINATES	DESCRIPTION
PTS01	25º 05.943' 26º 59.864'	Large terraced site. Tswana *kgoro* with extensive *malapa.*
PTS02	25º 05.945' 26º 59.780'	Terraced site. Tswana kgoro.
PTS03	25º 06.024' 26º 59.669'	Tswana *kgoro.*
PTS04	25º 06.087' 26º 59.543'	Large Tswana *motse*, probably composed of several *dikgoro.*
PTS05	25º 06.343' 26º 59.661'	Tswana *kgoro.*
PTS06	25º 06.372' 26º 59.774'	Large Tswana *kgoro* on several terraces with large cattle enclosures.

Table 3- Co-ordinates for Late Iron Age sites along the foot and higher up Phatswane on Tuschenkomst 135JP.

7 THE SIGNIFICANCE OF THE CULTURAL LANDSCAPE

The stone walled complexes associated with Mogare, Mmatone and Phatswana can be rated as highly significant in terms of the criteria discussed in earlier reports which were done for PPM (Pistorius 2006a, 2006b). A few can briefly be summarised here, namely:

- The three complexes of sites represent different villages which were simultaneously occupied by thousands of people from the pre-historical into the historical period, i.e. over a period of at least two centuries but perhaps longer (AD1700 to AD1880).
- The three mountains, the village complexes and the surrounding area represent a 'cultural landscape' which is unique, as it reflects a regional history, in particular that of the Kgatla and the impact of Mzilikazi's Ndebele on this clan.
- The village complexes are also unique in the context of the Late Iron Age, as they contain settlements that are characteristic of Tswana, Zulu (Ndebele) and mixed Tswana/Zulu (Ndebele) populations.
- The village complexes are in a pristine condition and offer outstanding research opportunities; moreover they offer excellent educational and tourism potential.

It was also pointed out that if development activities, particularly of large mining infrastructure (e.g. tailings dams or waste rock dumps) should occur in close proximity of the cultural landscape such activities could cause a physical or a non-physical impact on the cultural landscape. Non-physical impacts would occur on the intangible aspects of cultural landscapes, the sense of place associated with the stone walled sites and their setting in the landscape and on the visual appearance of these historical townscapes.

The historical and cultural context, as well as the research and educational (tourism) potential of the cultural landscape will diminish significantly if any development occurs on the level plain (between) these mountains or too close to the foot slopes of Mmatone, Mogare or Phatswane. A gradual encroachment on the cultural landscape will affect its unique natural and cultural features and inevitably cause physical (even if accidental) damage to elements of this complex.

Cultural landscapes such as the stone walled sites associated with Mmatone, Mogare and Phatswane are protected by Section 3 of the National Heritage Resources Act (Act No 25 of 1999). However, the cultural landscape in the PPM's premises need not be viewed as an obstacle to future mining operations. This cultural phenomena must be incorporated, unaffected and imaginatively, in any future mining operations. These resources can then be utilized to fulfil some of the mine's social obligations. The National Heritage Resources Act (Act No 25 of 1999) encourages the use of heritage resources for leisure, enjoyment, education and training (social upliftment).

Consequently, the cultural landscape as well as sites such as Mabjaneng and Motsotsodi outside the cultural landscape, can be managed and protected by implementing a cultural heritage management programme. Such a programme would provide for the conservation of these heritage sites; unlock the wealth of information associated with these sites and retrieve some of the abundance of material remains housed in these sites by means of excavations. This information can be used (in conjunction with the sites) to train heritage and field guides; allow the Mmatone-Mogare-Patswana cultural landscape and other heritage sites to be incorporated in the Pilanesberg tourism industry and heritage resources in the Pilanesberg mining area to be monitored by means of annual audits. (The Rio Tinto group has implemented cultural heritage management programmes for their mines world-wide. Palabora Mining Company (PMC) in South Africa in conjunction with the author is also currently pursuing such a programme).

8 SUMMARY

The Heritage Impact Assessment study for the Project Area (extended waste rock dump) revealed none of the types and ranges of heritage resources as identified in Section 3 of the National Heritage Resources Act (No 25 of 1999).

However, earlier Phase I HIA studies which were done for the Pilanesberg (previously Boynton) Platinum Mine during 2005 and 2006 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):

- Large numbers of isolated stone walled sites and clusters of stone walled sites dating from the Late Iron Age on Ruighoek 169JP, Witkleifontein 136JP and Tuschenkomst 135JP. The individual and clusters of stone walled sites along the foot slopes of Phatswane, Mogare and Mmatone were identified and demarcated in a conceptualised cultural landscape.
- Informal abandoned graveyards dating from the historical period and formal graveyards which are still being used in all the rural villages surrounding the Project Area.
- Historical remains dating from the more recent past are present, such as the old village of Motlhabe and an extensive homestead on Witkleifontein 136JP.
- Mining heritage remains which can be divided into remains reflecting rudimentary prospecting activities and formal mining heritage remains which include infrastructure and technological equipment.
- A limited number of stone tools occur haphazardly across the larger Project Area.
- Historical houses occur in villages such as Ngweding, Ntsana-le-Metsing and Motlhabe on the perimeter of the Project Area.

Only the stone walled sites demarcated in the cultural landscape adjacent (to the west of the Project Area) have a bearing on the extended waste rock dump. These

stone walled sites were geo-referenced. Their co-ordinates were determined by means of a GPS instrument and most of these stone walled sites were mapped. The stone walled sites have been assigned a code (MOG [Mogare], MAT [Mmatone] and PS [Phatswane]) in order to simplify their identification and description (Figure 1; Tables 1-3).

The three stone walled complexes associated with Mogare, Mmatone and Phatswana can be rated as highly significant in terms of the criteria discussed in earlier reports which were done for PPM (Pistorius 2006a, 2006b). A few can briefly be summarised here, namely:

- The three complexes of sites represent different villages which were simultaneously occupied by thousands of people from the pre-historical into the historical period, i.e. over a period of at least two centuries but perhaps longer (AD1700 to AD1880).
- The three mountains, the village complexes and the surrounding area represent a 'cultural landscape' which is unique, as it reflects a regional history, in particular that of the Kgatla and the impact of Mzilikazi's Ndebele on this clan.
- The three village complexes are also unique in the context of the Late Iron Age, as they contain settlements that are characteristic of Tswana, Zulu (Ndebele) and mixed Tswana/Zulu (Ndebele) populations.
- The three village complexes are in a pristine condition and offer outstanding research opportunities; moreover they offer excellent educational and tourism potential.

It was also pointed out that if development activities, particularly of large mining infrastructure (e.g. tailings dams or waste rock dumps) should occur in close proximity of the cultural landscape such activities could cause a physical or a non-physical impact on the cultural landscape. Non-physical impacts would occur on the intangible aspects of cultural landscapes, the sense of place associated with the

stone walled sites and their setting in the landscape or on the visual appearance of these historical townscapes.

The historical and cultural context, as well as the research and educational (tourism) potential of the cultural landscape will diminish significantly if any development occurs on the level plain (between) these mountains or too close to the foot slopes of Mmatone, Mogare or Phatswane. A gradual encroachment on the cultural landscape will affect its unique natural and cultural features and inevitably cause physical (even if accidental) damage to elements of this complex.

Cultural landscapes such as the stone walled sites associated with Mmatone, Mogare and Phatswane are protected by Section 3 of the National Heritage Resources Act (Act No 25 of 1999). However, the cultural landscape in the PPM's premises need not be viewed as an obstacle to future mining operations. This cultural phenomena must be incorporated, unaffected and imaginatively, in any future mining operations. These resources can then be utilized to fulfil some of the mine's social obligations. The National Heritage Resources Act (Act No 25 of 1999) encourages the use of heritage resources for leisure, enjoyment, education and training (social upliftment).

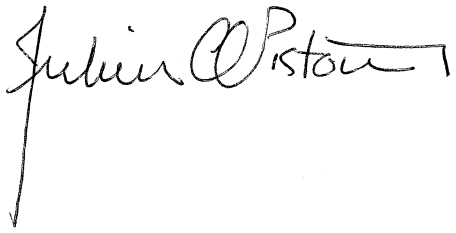
Consequently, the cultural landscape as well as sites such as Mabjaneng and Motsotsodi outside the cultural landscape, can be managed and protected by implementing a cultural heritage management programme. Such a programme would provide for the conservation of these heritage sites; unlock the wealth of information associated with these sites and retrieve some of the abundance of material remains housed in these sites by means of excavations. This information can be used (in conjunction with the sites) to train heritage and field guides; allow for the cultural landscape and other heritage sites to be incorporated in the Pilanesberg tourism industry and for heritage resources in the Pilanesberg mining area to be monitored by means of annual audits. (The Rio Tinto group has implemented cultural heritage management programmes for their mines world-

wide. Palabora Mining Company (PMC) in South Africa in conjunction with the author is also currently pursuing such a programme).

9 CONCLUSION AND RECOMMENDEATIONS

The Phase I HIA study for the Project Area (proposed extended waste rock dump) revealed none of the types and ranges of heritage resources as identified in Section 3 of the National Heritage Resources Act (No 25 of 1999). Consequently, the proposed extended waste rock dump as outlined in Figure 1 need not to affect any of the stone walled sites along the foot of either Mogare or Phatswane and can therefore be constructed in this location.

PPM has proposed that a corridor, which is approximately 50m wide, has to be maintained between the proposed extended waste rock dump and the eastern leg of the cultural landscape. This corridor will ensure that the rock waste dump does not encroach upon the cultural landscape. The corridor between the cultural landscape and the rock waste dump has to be maintained and can only be altered after PPM has received approval from the South African Heritage Resources Agency (SAHRA) that encroachment on the cultural landscape may occur.



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11 SPOKESPERSONS CONSULTED

Elias Pilane, local chief and community leader living in Motlhabe village.

Sameul Sebole (Mponyane), member of the Kgatla community in Motlhabane

Seti (surname unknown), employee of Pilanesberg Platinum Mines and community member in the village of Ntsana-le-metsing.

Numerous *badisa* (cattle herders) operating to the west of the Pilanesberg Platinum Mines.