Prepared for:

GOLDER ASSOCIATES AFRICA (PTY) LTD

A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR CHROME MINING ACTIVITIES ON VARIOUS PORTIONS OF THE FARMS GROENFONTEIN 138JP, VLAKFONTEIN 163JP AND VOGELSTRUISNEK 174JP WEST OF THE PILANESBERG IN THE NORTH-WEST PROVINCE OF SOUTH AFRICA

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EXECUTIVE SUMMARY

This Phase I Heritage Impact Assessment (HIA) study, as required in terms of Section 38 of the National Heritage Resources Act, Act 25 of 1999, was done for proposed chrome mining activities on various portions of the farms Groenfontein 134JP, Vlakfontein 164JP and Vogelstruisnek 174JP west of the Pilanesberg in the North-West Province of South Africa.

The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Project Area and, if so to determine the significance of these heritage resources.
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the mining project.

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

- Stone walled sites that date from the Late Iron Age.
- A formal graveyard.

These heritage resources were geo-referenced. Their coordinates were determined by means of a GPS instrument and thereafter mapped (Figure 5; Tables 1-2).

The significance of the heritage resources were determined by means of various criteria while mitigation measures are proposed for those heritage resources which may be affected (altered, removed, demolished) by the mining project.

Possible impact on the heritage resources

Site LIA01 needs not to be affected by the proposed open cast mining activities as this site is located to the east of the dirt road that runs along the western side of the Tlhorosane mountain range. Mining activities will be restricted to the west of this dirt road. It is possible that Site LIA02 may be affected by the proposed open cast mining activities.

GY01 is located near the southern perimeter of the Project Area and therefore needs not to be affected directly (physically) by the proposed mining activities. However, an indirect (non-physical) impact may occur on the graveyard.

The significance of the heritage resources

The significance of the heritage resources is indicated as well as mitigation measures should they be affected by the proposed mining activities.

Late Iron Age sites

Archaeological sites (such as Site LIA02) are protected by Section 35 of the National Heritage Resources Act (No 25 of 1999). Site LIA02 holds medium-high significance when considering criteria such as the following:

- This site was probably occupied by an ancestral Batlhako community whose descendants still may live in the area.
- This site may hold graves that warrant attention before the site is demolished.
- The site is part of a number of sites which are scattered along the Tlhorosana mountain range. As such they are part of a cultural landscape (sphere of influence).
- The site is relatively pristine and has some research potential and should not be destroyed before it has been researched.

Graveyards

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

Mitigating the heritage resources

The development of an open cast pit may affect Site LIA02 as well as GY01. Therefore the following mitigation measures have to be applied to these heritage resources if they are to be affected by the proposed mining activities.

Mitigating the stone walls

Site LIA02 must be mapped before it is destroyed. Limited test excavations must also be undertaken in Site LIA02 if substantial deposits are found in this site. This Phase II investigation can only be done after the South African Heritage Resources Authority (SAHRA) has issued a permit which authorises the Phase II investigation. After this study has been completed SAHRA will issue a permit (letter) which will authorise the demolition of Site LIA02.

Mitigating the graveyard

The following strategies can be followed if GY01 may be affected by the proposed mining activities, namely:

- If GY01 is affected directly (physically) by the proposed mining activities the graveyard can be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.
- If GY01 is affected indirectly (non-physically) by the proposed mining activities, e.g. mining activities may encroach on the graveyard, a safe corridor of not less than fifty meters should be maintained between the mine's border fence and the graveyard.

It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in thick 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 Archaeologists (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorization (permits) from SAHRA to undertake the mitigation measures.

CONTENTS

1 INTRODUCTION

This document contains the report on a Phase I Heritage Impact Assessment (HIA) study which was done for chrome mining activities on various portions of the farms Groenfontein 138JP, Vlakfontein 163JP and Vogelstruisnek 174JP west 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 (No 25 of 1999) occur in this region (see Box 1).

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

The National Heritage Resources Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

(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 by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
(h) sites of significance relating to the history of slavery in South Africa;
(i) movable objects, including -
(i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and 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, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects 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;
(a) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
(b) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
(c) 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)
(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;
(i) sites of significance relating to the history of slavery in South Africa

2 AIMS OF THIS STUDY

Batlhako Mining Limited (Batlhako) intends mining chrome on portions of the farms Groenfontein 138JP, Vlakfontein 163JP and Vogelstruisnek 174JP west of the Pilanesberg in the North-West Province of South Africa. Given the possibility that heritage resources may be affected by the proposed chrome mining activities Golder Associates Africa (Pty) Ltd, who is responsible for compiling the Environmental Impact Assessment report for the project, commissioned the author to undertake a Phase I Heritage Impact Assessment (HIA) study for the Project Area.

The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Eskom Project Area and, if so to determine the significance of these heritage resources, and
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the Eskom Project.

3 METHODOLOGY

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

- Surveying on foot parts of the proposed new mining areas, as well as surveying, where appropriate, areas adjoining the mining areas (in other words, peripheral areas which will not be affected by the mining activities).
- Briefly surveying literature relating to the pre-historical and historical context of the Pilanesberg region;
- Consulting maps of the proposed new mining areas.
- Consulting archaeological (heritage) data bases such as the one kept at the North-West Provincial Heritage Resources Agency (NW PHRA).
- Synthesising all information obtained from the literature survey and from data the bases with the evidence derived from the fieldwork.

3.1 Fieldwork

The Project Area covers portions of the farms Groenfontein 138JP, Vlakfontein 163JP and Vogelstruisnek 174JP west of the Pilanesberg in the North-West Province. The Project Area was reconnoitred with a vehicle where there were accessible roads. However, tracts of the proposed new mining areas were covered on foot.

Although heritage resources in the peripheral areas (outside the mining areas) will not be affected by the proposed development project, this report does briefly refer to the presence of heritage resources such as stone walled sites and graveyards that occur in the slighter wider project area.

3.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the North-West Heritage Resources Agency (SAHRA) in Mafekeng and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to

determine whether any heritage resources had been identified during earlier archaeological surveys in the Pilanesberg area.

Literature relating to the pre-historical and the historical unfolding of the Pilanesberg area was reviewed. This review focused particularly on local Tswana groups such as the Tlhako and the Kgatla Kgafêla who live along the Pilanesberg. (The history of the origins of the Tlôkwa who lived at Marothodi and Pilwe to the south-west of the Pilanesberg was not reviewed).

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 in order to determine the significance of any remains which may be found in the project area (see Parts 4 & 8).

In addition, the Project Area was also studied by means of the 1:50 000 topographical map on which the mining areas appear (2526BD Mabaalstad & 2526BB Mabeskraal, 1: 50 000 topographical maps).

3.3 Mapping heritage resources

All the heritage resources found in the mining area and some in the peripheral area were geo-referenced using a GPS instrument and they were thereafter mapped in Arch View (Figure 5; Tables 1- 2).

3.4 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 thick 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 Archaeologists (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorization (permits) from SAHRA to undertake the mitigation measures.

3.5 Some remarks on terminology

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

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.

- Cultural resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.

- Cultural resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.

- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage resources (cultural resources) include all human-made

phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.

- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the Historical Period.

- Maintenance: Keeping something in good health or repair.

- Pre-historical: Refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.

- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.

- Recent past: Refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems. Various types of protected areas occur in South Africa.

- Reconstruction: Re-erecting a structure on its original site using original components.

- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.

- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.

- Stone Age: Refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.

- Translocation: Dismantling a structure and re-erecting it on a new site using original components.

- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to Figure 3).

- 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 (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).

- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended

excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

4 THE PROJECT AREA

4.1 Location

The Project Area covers portions of land on the farms Groenfontein 138JP, Vlakfontein 164JP and Vogelstruisfontein 173JP west of the Pilanesberg in the North-West Province of South Africa. The Project Area will be affected by mining activities such as the sinking of open cast pits and the establishing of infrastructure such as roads. These areas are also referred to as critical areas, whereas the peripheral areas cover land adjacent to the critical areas (2526BD Mabaalstad & 2526BB Mabeskraal, 1: 50 000 topographical maps) (Figure 2).

4.2 The Pilanesberg as a natural heritage resource

The Pilanesberg near the proposed new chrome mining areas is a unique natural landmark and it 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- The Project Area on Groenfontein 138JP and Vlakfontein 164JP stretches across an open flat piece of veldt with the Tlhorosane mountain range on its eastern perimeter (above).

4.3 How the Project Area has been affected

The Project Area is not a pristine piece of land any longer as the landscape has been affected by human settlement and activities from an early time period. Although Stone Age people were present they had little impact on the environment as they only occurred in small numbers and as scatters groups throughout the area.

During the Late Iron Age numerous communities established themselves in large village complexes near and on the slopes and spurs of mountains and kopjes to the north, west and south of the Pilanesberg. Whilst Ga Ramoga and Moruleng on the north-eastern perimeter of the Pilanesberg were occupied by Kgatla communities, the Batlhako had already settled to the west of the Pilanesberg with the Tlokwa still further

to the south at Marothodi and Pilwe. A mixed Tswana and Ndebele population occupied mountains sites such as Matone, Mogare, Phatswane and Mukukunupe further to the north-east.

Figure 2- The Project Area on Vogelstruisnek 174JP stretches across an open piece of veldt with low kopjes on its south-eastern perimeter (above).

The Late Iron Age farmers were followed by colonists in the second half of the 19th century. The Voortrekkers continued a mixed farming existence until the land was expropriated in order to be incorporated in the Bophuthatswana homeland.

During the early 20th century the western limb of the Merensky Reef was discovered and platinum mining commenced near Swartklip (Notham) and Rustenburg. Chrome mining also commenced on the chromite zone to the north and to the west of the Pilanesberg. The impact of these early chrome mining activities can still be observed today and to a large extent have disturbed a major part of the Project Area turning it into a non-pristine area.

4.4 Contextualising the Project Area

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

4.4.1 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.

No stone tools were observed throughout the Project Area. However, the abundance of dolerite stone, which is much sought after for the manufacturing of stone tools, particularly during the Middle Stone Age, suggest that stone tools may occur in the wider project area.

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. A few rock paintings have been recorded in the Pilanesberg.

4.4.2 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 Tlhako, Kgatla Kgafêla, 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 settlement complexes in the area before they moved to the Zeerust-Marico in AD1832. Large numbers of the descendants of these original Nguni-speaking people today live in Groenfontein, Rhenosterkraal and Kraalhoek, to the north of the Project Area.

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

4.4.2.1 Brief history of the Batlhako

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 AD1820 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.

4.4.2.2 Brief history of the Kgatla Kgafêla

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 them self. 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.

4.4.3 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, 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. Boshoek, south of the Pilanesberg was established along the railway line from Pretoria and the town initially served as a terminus.

4.4.4 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. Some historical chrome mining activities occur on Rooderand 46JP to the east of the Project Area.

5 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

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

Figures 3 & 4- The Project Area on Groenfontein 138JP, Vlakfontein 164JP and Vogelstruisnek 174JP has been scarred by earlier chrome mining activities. Shallow mining pits associated with mine dumps occur in a line from the north to the south to the west of the Tlhorosane mountain range and further to the south where the proposed new mining activities will take place (above).

5.1 Types and ranges of heritage resources

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

- Stone walled sites that date from the Late Iron Age.
- A formal graveyard.

These heritage resources were geo-referenced. Their coordinates were determined by means of a GPS instrument and thereafter mapped (Figure 5; Tables 1-2).

The significance of the heritage resources were determined by means of various criteria while mitigation measures are proposed for those heritage resources which may be affected (altered, removed, demolished) by the mining project.

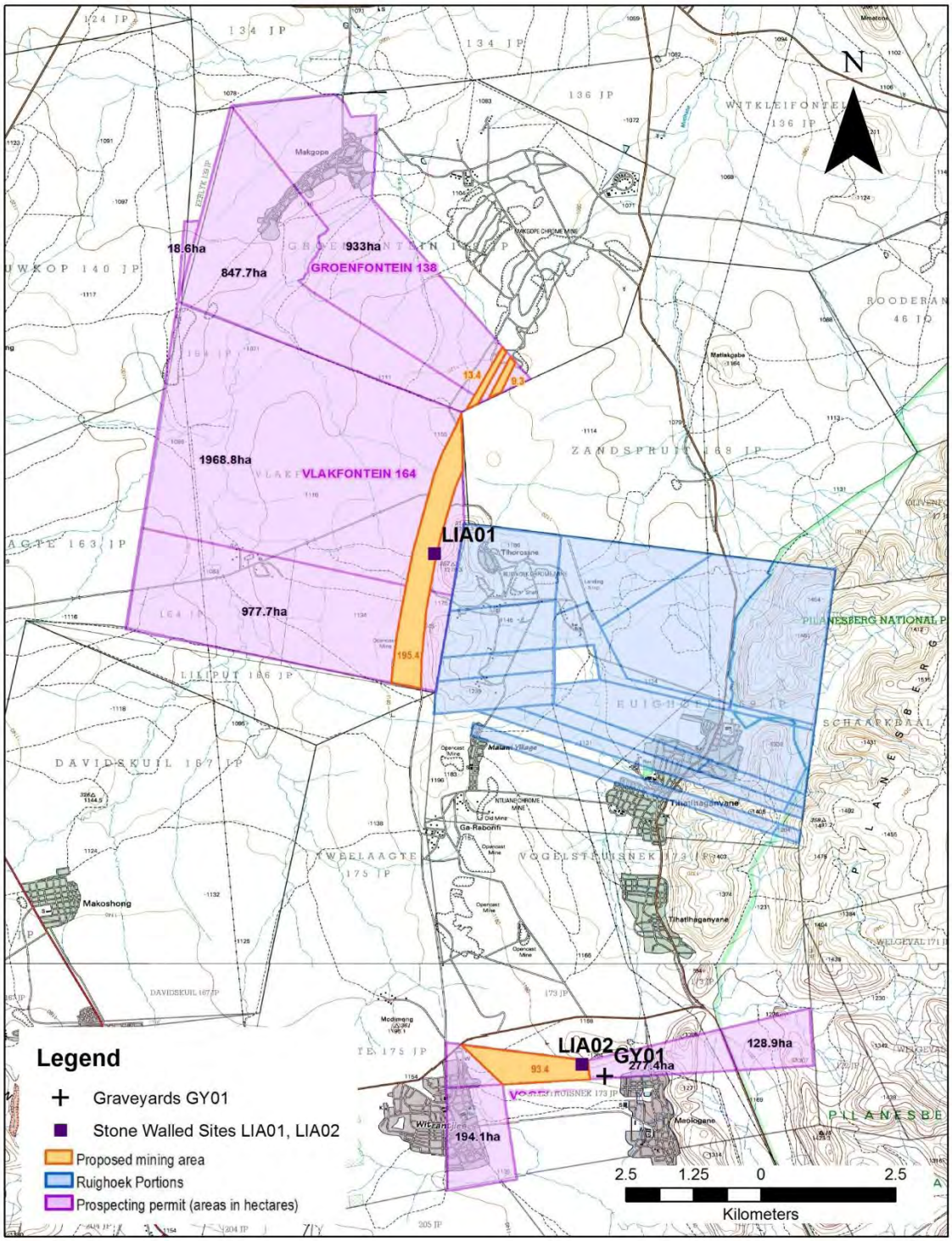


Figure 5- The Project Area on the farms Groenfontein 138JP, Vlakfontein 163JP and Vogelstruisnek 174JP west of the Pilanesberg in the North-West Province. Note the presence of stone walled sites and a graveyard in and near the Project Area (above).

5.1.1 Late Iron Age sites

Stone walled sites which date from the Late Iron Age were observed at two localities in and near the Project Area, namely:

- Site LIA01 occurs along the western foot of the Thlorosane Mountain range on Vlakfontein 163JP. This site is well preserved and occurs to the east of the dirt road which runs from the north to south along the western side of this mountain range.

Figure 6- An extended and well preserved stone walled site (Site LIA01) dating from the Late Iron Age occurs along the western foot of the Tlhorosane mountain range near the Project Area on Vlakfontein 163JP (above).

- Site LIA02 comprises rudimentary stone walls along the southern foot of the low kopje which occurs in the south-eastern corner of the Project Area. This site is relative pristine. It is marked by low walls which were constructed with small stones although heavy double row-foundation stones do occur.

Figure 7- Low rudimentary stone walls which are part of Site LIA02 occur along the southern foot of a low kopje in the Project Area on Vogelsruisnek 174JP (above).

5.1.2 Graveyard

A formal grave (GY01) is situated near the southern perimeter of the Project Area on Vogelstruisnek 174JP.

GY01 holds more than fifty graves most of which are decorated with granite headstones and trimmings.

Inscriptions on some of the tombstones read as follow:

- 'Kgasha Ruth Mmarantshwe *19 10 1919, †17 08 1999 Always remembered by your children and grandchildren Joh 1-4'.
- 'Ben Ditsele Born 10 10 1934 Died 25 12 1997 My brother rest in peace'.
- 'Josef Ratlou Botsalo 10 April 1918 O sule 20 June Pasalem 119'.

Figure 8- Formal graveyard (GY01) near the Project Area on Vogelstruisnek 174JP holds more than fifty graves most of which are decorated (above).

No on map	Stone walled sites	Coordinates	Level of significance	Magnitude of impact
LIA01	Large extended stone walled site	25º 10.898'S; 26º 54.389'E	**HIGH**	**Low**
LIA02	Rudimentary, small stone walled site	25º 16.003'S; 26º 55.864'E 25º 16.001'S; 26º 55.848'E 25º 15.991'S; 26º 55.821'E	**Medium-high**	**HIGH**

Table 1- Coordinates for Late Iron Age stone walled sites in and near the Project Area. The significance and the magnitude of the impact on these remains are indicated (above).

No on map	Graveyard	Coordinates	Level of significance	Magnitude of impact
GY01	> 50 graves near southern perimeter of Project Area	25º 16' 07.90"S 26º 56' 04.67"E	**HIGH**	**Low**

Table 2- Coordinates for a graveyard near the Project Area. The significance and the magnitude of the impact on the graveyard are indicated (above).

5.2 Possible impact on the heritage resources

Site LIA01 needs not to be affected by the proposed open cast mining activities as this site is located to the east of the dirt road that runs along the western side of the Tlhorosane mountain range. Mining activities will be restricted to the west of this dirt road. It is possible that Site LIA02 may be affected by the proposed open cast mining activities.

GY01 is located near the southern perimeter of the Project Area and therefore needs not to be affected directly (physically) by the proposed mining activities. However, an indirect (non-physical) impact may occur on the graveyard.

5.3 The significance of the heritage resources

The significance of the heritage resources is indicated as well as mitigation measures should they be affected by the proposed mining activities.

5.3.1 Late Iron Age sites

Archaeological sites (such as Site LIA02) are protected by Section 35 of the National Heritage Resources Act (No 25 of 1999). Site LIA02 holds medium-high significance when considering criteria such as the following:

- This site was probably occupied by an ancestral Batlhako community whose descendants still may live in the area.
- This site may hold graves that warrant attention before the site is demolished.
- The site is part of a number of sites which are scattered along the Tlhorosana mountain range. As such they are part of a cultural landscape (sphere of influence).
- The site is relative pristine and has some research potential and should not be destroyed before it has been researched.

5.3.2 Graveyard

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

6.3 Mitigating the heritage resources

The development of an open cast pit may affect Site LIA02 as well as GY01. Therefore the following mitigation measures have to be applied to these heritage resources if they are to be affected by the proposed mining activities.

6.3.1 Mitigating the Late Iron Age sites

Site LIA02 must be mapped before it is destroyed. Limited test excavations must also be undertaken in Site LIA02 if substantial deposits are found in this site. This Phase II investigation can only be done after the South African Heritage Resources Authority (SAHRA) has issued a permit which authorises the Phase II investigation. After this study has been completed SAHRA will issue a permit (letter) which will authorise the demolition of Site LIA02.

6.3.2 Mitigating the graveyard

The following strategies can be followed if GY01 may be affected by the proposed mining activities, namely:

- If GY01 is affected directly (physically) by the proposed mining activities the graveyard can be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the

administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

- If GY01 is affected indirectly (non-physically) by the proposed mining activities, e.g. mining activities may encroach on the graveyard, a safe corridor of not less than fifty meters should be maintained between the mine's border fence and the graveyard.

7 CONCLUSION AND RECOMMENDATIONS

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

- Stone walled sites that date from the Late Iron Age.
- A formal graveyard.

These heritage resources were geo-referenced. Their coordinates were determined by means of a GPS instrument and thereafter mapped (Figure 3; Tables 1-2).

The significance of the heritage resources were determined by means of various criteria while mitigation measures are proposed for those heritage resources which may be affected (altered, removed, demolished) by the mining project.

Possible impact on the heritage resources

Site LIA01 needs not to be affected by the proposed open cast mining activities as this site is located to the east of the dirt road that runs along the western side of the Tlhorosane mountain range. Mining activities will be restricted to the west of this dirt road. It is possible that Site LIA02 may be affected by the proposed open cast mining activities.

GY01 is located near the southern perimeter of the Project Area and therefore needs not to be affected directly (physically) by the proposed mining activities. However, an indirect (non-physical) impact may occur on the graveyard.

The significance of the heritage resources

The significance of the heritage resources is indicated as well as mitigation measures should they be affected by the proposed mining activities.

Late Iron Age sites

Archaeological sites (such as Site LIA02) are protected by Section 35 of the National Heritage Resources Act (No 25 of 1999). Site LIA02 holds medium-high significance when considering criteria such as the following:

- This site was probably occupied by an ancestral Batlhako community whose descendants still may live in the area.
- This site may hold graves that warrant attention before the site is demolished.
- The site is part of a number of sites which are scattered along the Tlhorosana mountain range. As such they are part of a cultural landscape (sphere of influence).
- The site is relatively pristine and has some research potential and should not be destroyed before it has been researched.

Graveyards

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

Mitigating the heritage resources

The development of an open cast pit may affect Site LIA02 as well as GY01. Therefore the following mitigation measures have to be applied to these heritage resources if they are to be affected by the proposed mining activities.

Mitigating the stone walls

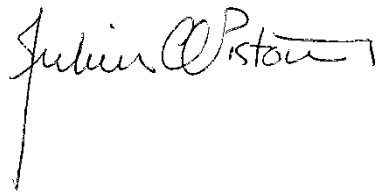
Site LIA02 must be mapped before it is destroyed. Limited test excavations must also be undertaken in Site LIA02 if substantial deposits are found in this site. This Phase II investigation can only be done after the South African Heritage Resources Authority (SAHRA) has issued a permit which authorises the Phase II investigation. After this

study has been completed SAHRA will issue a permit (letter) which will authorise the demolition of Site LIA02.

Mitigating the graveyard

The following strategies can be followed if GY01 may be affected by the proposed mining activities, namely:

- If GY01 is affected directly (physically) by the proposed mining activities the graveyard can be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.
- If GY01 is affected indirectly (non-physically) by the proposed mining activities, e.g. mining activities may encroach on the graveyard, a safe corridor of not less than fifty meters should be maintained between the mine's border fence and the graveyard.



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