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**A HERITAGE DESKTOP STUDY FOR A PROPOSED PROSPECTING APPLICATION
FOR PORTION 5 OF THE FARM RUIGHOEK 169JP NEAR THE PILANESBERG,
NORTH- WEST PROVINCE**

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EXECUTIVE SUMMARY

This document contains the report on the results of a desktop heritage study which was done for Pilanesberg Platinum Mines (Pty) Ltd (hereafter referred to as PPM) for a Proposed Prospecting Right for Portion 5 of the farm Ruighoek 169JP near the Pilanesberg in the North-West Province.

To comply with legislation PPM requires knowledge of the presence, relevance and the significance of any heritage resources that may occur in the prospecting area to take pro-active measures about any heritage remains that may be affected, damaged, or destroyed when the prospecting activities are conducted. SLR Consulting (South Africa) (Pty) Ltd (SLR) and PPM therefore commissioned the author to undertake a heritage desktop study for the area to be affected by the prospecting activities.

The aims with the desktop study were the following:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act, 1999 (No. 25 of 1999) (NHRA) do occur in the prospecting area.
- To propose mitigation measures for those types and ranges of heritage resources that may be affected by the proposed prospecting activities.

Google Earth imagery, amongst some of the sources used for the desktop heritage study for the proposed prospecting area, revealed possible rudimentary stone walled sites in the northern part of the prospecting area. However, it is uncertain whether the images on Google imagery in fact represent stone walls or merely patterns according to which vegetation growth occurred.

If any stone walled sites may occur, they may be affected by the three northern most boreholes as well as the two northern most trenches.

Consequently, detailed chance-find procedures are outlined should any stone walled sites or any other heritage resources such as graves be encountered or exposed during the proposed prospecting activities (outlined in detail).

Mitigation measures may also include shifting the positions of the boreholes and the trenches to avoid the rudimentary stone walls.

In the event of a chance-find, whether heritage resources, graves, or graveyards a Phase 2 rescue operation may be required subject to permits issued by the South African Heritage Resources Agency (SAHRA) for this purpose.

Disclaimer:

It is possible that this desktop study may have missed heritage resources in the prospecting area because no ground survey was conducted due to security issues in the area. It is also possible that heritage resources may occur below the surface of the earth and may only be exposed once prospecting commences. Google Earth imagery was also not conclusive in outlining the possible presence of rudimentary stone walled sites in the northern part of the prospecting area.

ACRONYMS AND ABBREVIATIONS

ASAPA	Association of South African Professional Archaeologists
BP	Before Present
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIA	Early Iron Age
EMPr	Environmental Management Programme
EMPR	Environmental Management Programme Report
ESA	Early Stone Age
GPS	Global Positioning System
GY	Graveyard
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MPRDA	Mineral and Petroleum Resources Development Act, Act No 28 of 2002
MSA	Middle Stone Age
NEMA	National Environmental Management Act, Act No 107 of 1998
NEM: WA	National Environmental Management: Waste Act, Act No 59 of 2008
NHRA	National Heritage Resources Act, Act No 25 of 1999
No	Number
NWA	National Water Act, Act No 36 of 1998
PHRA	Provincial Heritage Resource Agency
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SLR	SLR Consulting (South Africa) (Pty) Ltd
ToR	Terms of Reference

TERMINOLOGY

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

1. Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration, and enhancement of the natural and cultural environment.
2. 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.
3. 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.
4. 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.
5. In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
6. 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.
7. Maintenance: Keeping something in good health or repair.

8. 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.
9. Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
10. 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, soon, qualify as heritage resources.
11. 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.
12. Reconstruction: Re-erecting a structure on its original site using original components.
13. 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.
14. Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.
15. Stone Age: Refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the Historical Period. The Stone Age is divided into an 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).

16. 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.
17. Translocation: Dismantling a structure and re-erecting it on a new site using original components.
18. Project Area: refers to the area (footprint) where the developer wants to focus its development activities.
19. Phase I archaeological 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).
20. 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 involves permitting processes, requires the input of different specialists and the co-operation and approval of the South African Heritage Resources Agency (SAHRA).

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1 INTRODUCTION

1.1 Background and context

This document contains the results of a desk top heritage study which was done for Pilanesberg Platinum Mines (Pty) Ltd (hereafter referred to as PPM) for a proposed Prospecting Right (PR) for Portion 5 of the farm Ruighoek 169JP near the Pilanesberg in the North-West Province.

For the proposed prospecting activities to be approved a Basic Assessment (BA) process is required. SLR Consulting (South Africa) (Pty) Ltd (SLR) (hereafter referred to as SLR), an independent firm of environmental consultants, has been appointed by PPM to manage the BA process. Consequently, SLR commissioned the author to undertake a heritage desk top study for the proposed prospecting area.

1.2 Aim of this report

To comply with legislation PPM requires knowledge of the presence, relevance and the significance of any heritage resources that may occur in the prospecting area to take proactive measures about any heritage remains that may be affected, damaged, or destroyed when the prospecting activities are conducted. SLR therefore commissioned the author to undertake a heritage desk top study for the area to be affected by the prospecting activities.

The aims of the desktop study were the following:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act, 1999 (No. 25 of 1999) (NHRA) do occur in the prospecting area.
- To establish the significance of these heritage resources as well as the level of significance of any possible impact on these heritage resources.
- To propose mitigation measures for those types and ranges of heritage resources that may be affected by the proposed prospecting activities.

1.3 Assumptions and limitations

The findings, observations, conclusions, and recommendations reached in this report are based on the author's best scientific and professional knowledge and available information. It is important to note that a site visit was not undertaken to the project area, due to safety concerns. However, the larger project area has been surveyed on several former occasions

in the past when heritage surveys were done for various mining companies (See Part 11, 'Bibliography relating to heritage studies'). The author reserves the right to modify aspects of the report including the recommendations when new information becomes available, particularly if this information may have an influence on the reports results and recommendations.

2 DETAILS OF THE SPECIALIST

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

Qualifications:

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

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

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

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

Work experience:

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

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

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

Independent Archaeologist and Heritage Consultant (2003-)

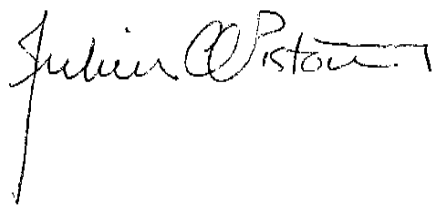
Accreditation: Member of the Association for Southern African Professional Archaeologists. (ASAPA)

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

3 DECLARATION OF INDEPENDANCE

I, Dr Julius CC Pistorius, declare the following:

- I act as an independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even, if this result in views and findings that are not favourable for the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialists report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the applications;
- I will comply with the Act, Regulations and other applicable legislation;
- I will consider, to the extent possible, the matters listed in Regulation 13;
- I understand to disclose to the applicant and the competent authority all material information in my possession
- All the particulars furnished by me in this form are true and correct that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



3 March 2022

4 LEGAL FRAMEWORK

South Africa's heritage resources ('national estate') are protected by international, national, provincial and local legislation which provides regulations, policies and guidelines for the protection, management, promotion and utilisation of heritage resources. South Africa's 'national estate' includes a wide range of various types of heritage resources as outlined in Section 3 of the NHRA (see Box 1).

At a national level, heritage resources are dealt with by the National Heritage Council Act, 1999 (No. 11 of 1999) and the NHRA. According to the NHRA, heritage resources are categorized using a three-tier system, namely Grade I (national), Grade II (provincial) and Grade III (local) heritage resources.

At the provincial level, heritage legislation is implemented by Provincial Heritage Resources Agencies (PHRA's) which apply the NHRA together with provincial government guidelines and strategic frameworks. Metropolitan or Municipal (local) policy regarding the protection of cultural heritage resources is also linked to national and provincial acts and is implemented by the SAHRA and the PHRA's.

4.1 Legislation relevant to heritage resources

Legislation relevant to South Africa's national estate includes the following:

1. National Environmental Management Act, 1999 (No. 107 of 1998) (NEMA)
2. Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA)
3. National Heritage Resources Act 1999, (No. 25 of 1999) (NHRA).

Box 1: Types and ranges of heritage resources (the national estate) as outlined in Section 3 of the NHRA

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;
 - 1. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
 - 2. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
 - 3. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
 - 1. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
 - 2. its importance in demonstrating a high degree of creative or technical achievement at a particular period;
 - 3. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; (h)
 - 4. 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.

The NEMA stipulates under Section 2(4)(a) that sustainable development requires the consideration of all relevant factors including (iii) the disturbance of landscapes and sites that constitute the nation's cultural heritage must be avoided, or where it cannot be altogether avoided, is minimised and remedied. Heritage assessments are implemented in terms of the NEMA Section 24 to give effect to the general objectives. Procedures considering heritage resource management in terms of the NEMA are summarised under Section 24(4) as amended in 2008. In addition to the NEMA, the National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003) may also be applicable. This act applies to protected areas and world heritage sites, declared as such in terms of the World Heritage Convention Act, 1999 (No. 49 of 1999).

4.1.2 MPRDA

The MPRDA stipulates under Section 5(4) no person may prospect for or remove, mine, conduct technical co-operation operations, reconnaissance operations, explore for and produce any mineral or petroleum or commence with any work incidental thereto on any area without (a) an approved Environmental Management Programme (EMPr) or approved environmental management plan, as the case may be.

4.1.3 NHRA

According to Section 3 of the NHRA the 'national estate' comprises a wide range and various types of heritage resources (refer to Box 1).

4.1.3.1 Heritage Impact Assessment studies

According to Section 38 of the NHRA, a Heritage Impact Assessment (HIA) process must be followed under the following circumstances:

1. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300 m in length;
2. The construction of a bridge or similar structure exceeding 50 m in length;
3. Any development or activity that will change the character of a site and which exceeds 5 000 m² or which involve three or more existing erven or subdivisions thereof
4. Re-zoning of a site exceeding 10 000 m²; and
5. Any other category provided for in the regulations of SAHRA, a provincial or local heritage authority or any other legislation such as NEMA, MPRDA, etc.

4.1.3.2 Section 34 (Buildings and structures)

Section 34 of the NHRA provides for general protection of structures older than 60 years. According to Section 34(1) no person may alter (demolish) any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or any other facility made by people and which is fixed to land and which includes fixtures, fittings and equipment associated with such structures.

Alter means any action which affects the structure, appearance or physical properties of a place or object, whether by way of structural or any other works such as painting, plastering, decorating, etc.

Most importantly, Section 34(1) clearly states that no structure or part thereof may be altered or demolished without a permit issued by the relevant PHRA. These permits will not be granted without a HIA being completed. A destruction permit will thus be required before any removal and/or demolition may take place, unless exempted by the PHRA according to Section 34(2) of the NHRA.

4.1.3.3 Section 35 (Archaeological and palaeontological resources and meteorites)

Section 35 of the NHRA provides for the general protection of archaeological and palaeontological resources, and meteorites. In the event that archaeological resources are discovered during the course of development, Section 38(3) specifically requires that the discovery must immediately be reported to the PHRA, or local authority or museum who must notify the PHRA. Furthermore, no person may without permits issued by the responsible heritage resources authority:

1. Destroy, damage, excavate, alter, deface, or otherwise disturb any archaeological or paleontological site or any meteorite;
2. Destroy, damage, excavate, remove from its original position, collect, or own any archaeological or paleontological material or object or any meteorite;
3. Trade in, sell for private gain, export, or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological

and paleontological material or objects, or use such equipment for the recovery of meteorites; and

4. Alter or demolish any structure or part of a structure which is older than 60 years.

Heritage resources may only be disturbed or moved by an archaeologist after being issued with a permit received from SAHRA. To demolish heritage resources, the developer has to acquire a destruction permit from SAHRA.

4.1.3.4 Section 36 (Burial grounds and graves)

Section 36 of the NHRA allows for the general protection of burial grounds and graves. Should burial grounds or graves be found during development, Section 36(6) stipulates that such activities must immediately cease, and the discovery reported to the responsible heritage resources authority and the South African Police Service (SAPS). Section 36 also stipulates that no person without a permit issued by the relevant heritage resources authority may:

- (a) Destroy, damage, alter, exhume, or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) Destroy, damage, alter, exhume, or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) Bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Section 36 of the NHRA divides graves and burial grounds into the following categories:

1. Ancestral graves;
2. Royal graves and graves of traditional leaders;
3. Graves of victims of conflict;
4. Graves designated by the Minister;
5. Historical graves and cemeteries; and
6. Human remains.

Human remains less than 60 years old are subject to provisions of the National Health Act, 2003 (No. 61 of 2003), Ordinance 12 of 1980 (Exhumation Ordinance) and Ordinance No 7 of 1925 (Graves and dead bodies Ordinance, repealed by Mpumalanga). Municipal bylaws with regard to graves and graveyards may differ. Professionals involved with the exhumation and

relocation of graves and graveyards must establish whether such bylaws exist and must adhere to these laws.

Unidentified graves are handled as if they are older than 60 years until proven otherwise.

Permission for the exhumation and relocation of graves older than sixty years must also be gained from descendants of the deceased (where known), the National Department of Health, Provincial Department of Health, Premier of the Province, and local police. Furthermore, permission must also be gained from the various landowners (i. e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker, or an institution declared under the Human Tissues Act, 1983 (No. 65 of 1983).

4.1.3.5 Section 37 (Public monuments and memorials)

Section 37 makes provision for the protection of all public monuments and memorials in the same manner as places which are entered in a heritage register referred to in Section 30 of the NHRA.

4.1.3.6 Section 38 (Heritage Resource Management)

Section 38 (8): The provisions of this section do not apply to a development as described in Section 38 (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No 50 of 1991), or any other legislation. Section 38(8) ensures cooperative governance between all responsible authorities through ensuring that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of Subsection (3), and any comments and recommendations of the relevant heritage resources authority about such development have been taken into account prior to the granting of the consent.

5 THE PROJECT AREA

5.1 Location

PPM proposes to secure a prospecting right for portion 5 of the farm Ruighoek 169JP. The area under consideration is located adjacent to an area where mining rights have been granted to PPM. Therefore, the procurement of a prospecting right is to ensure a continuation of the development of the existing operations in the area. The prospecting right area is located approximately 60 km and 28 km north-west of Rustenburg and Sun City, respectively. Various smaller towns and villages are near to the prospecting area, namely Mabeleleng (± 4 km south); Tlathaganyane (± 7 km east); Makgope (± 8 km north-west); and Mkoshong (± 4.5 km south-west). An important area of interest, the Pilanesberg National Park, is located approximately 4 km to the east (see **Error! Reference source not found.**).



Figure 1: Portion 5 of the farm Ruighoek 169JP, west of the Pilanesberg is a long, narrow strip of land (grey coloured) stretching from the western edge of the Pilanesberg to the Tlhorosane hills in the west (above).

5.2 The altered state of the study area

Parts of the wider area, including portion 5 of the farm Ruighoek 169JP, have long been utilised for agricultural activities, such as dry land agriculture. However, the nature and character of the study area and beyond has also been scarred by prospecting activities conducted for chrome and other resources during the early decades of the 1900's. However, some of these disturbances may also have been caused by illegal mining activities during the more recent past.

These disturbances comprise of long scars that stretch across the land some of which are also visible near the prospecting area.



Figure 2: Note white scar marks on the land left by earlier prospecting activities near and in the proposed prospecting area (above).

5.3 Earlier heritage studies

A considerable number of heritage studies have been conducted during the last two to three decades for different development projects in the proximity of the study area. A number of these studies are listed in Part 11, Bibliography relating to earlier heritage studies’.

These studies have pointed out that the main types and ranges of heritage resources in the area comprise stone walled sites dating from the Late Iron Age. These sites are limited to the presence of outcrops of syenite as these sites were constructed with the stone from these kopjes. Most of these sites are small and do not cover as extensive surface areas as contemporary stone walled sites elsewhere in the North-West. Very few informal graveyards or graves were recorded as burials mostly occur in formalised graveyards located in the various towns between the Pilanesberg in the east and the Tlhorosane hills further to the west.

5.4 The nature of the prospecting activities

Portion 5 of the farm Ruighoek 169JP measures approximately 130 ha in extent. The prospecting right area, located on Portion 5 of the Ruighoek 169 JP, is approximately 5 ha in extent. The prospecting right area comprises a long narrow piece of land running from the Tlhorosane hills in

the west to the Pilanesberg in the east. The target minerals for the project are Platinum Group Metals (PGM) including gold, nickel, copper, cobalt and other metals and minerals associated therewith (excluding chrome). The planned timeframe to complete the proposed prospecting work is provided in

Table 1: Proposed Work Programme

Activity	Timeframe
Phase I – Trenching and Analysis; and Initial Diamond Drilling, Logging and Reef Sample Analysis	12 months (year 1)
Phase II – Environmental Study of Prospecting Right Area; 3D Modelling; and Metallurgical Test Work and Geotechnical Investigation	24 months (year 2 – 3)

The prospecting activities would be conducted in a phased approach with each phase dependent on results of the preceding phase (Table 1). The two phases are explained in the following sections.

- **Phase I – Soil Sampling and Initial Analysis**

Phase 1 will consist of a programme where nine boreholes will be drilled, logged, and sampled. The information is required to establish the depth of the PGM-bearing reefs, comprising the UG2 Chromitite and Merensky Reef, and to check the grade and quantity of the reefs. Samples will be submitted for assay for PGMs, copper and nickel. The boreholes are planned to be between 20 – 150 m deep. In addition to the boreholes, five trenches of around 100 m long will be dug to establish the sub-outcrop position of the PGM reefs (Figure 3). The trenches will be around 1.5 m deep and 1 m wide.

- **Phase II – Final Drilling and Investigation**

A geological/structural model will be compiled so that the dimensions and locality of the mineral resource can be established. This will be followed by the compilation of a resource model. The geological and resource models will incorporate all the information from the adjacent properties, where a significant amount of drilling has been done.

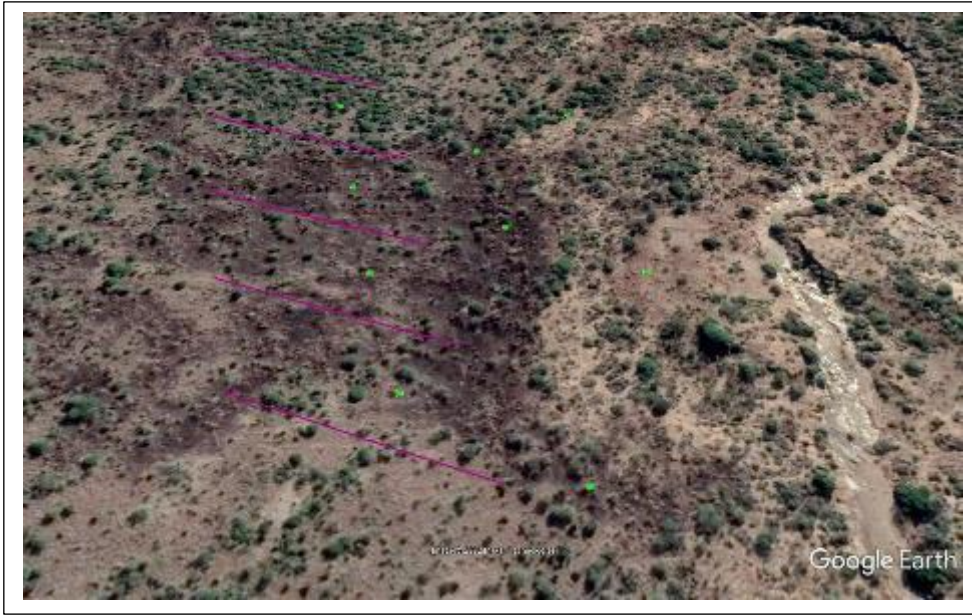


Figure 3: Proposed prospecting activities include drilling of boreholes (green dots) and excavations of trenches (red lines) (above).

6 APPROACH AND METHODOLOGY

This heritage desk top study was conducted by means of the following:

6.1 Earlier heritage surveys

A foot survey of the proposed prospecting area was not possible due to illegal mining activities which are currently ongoing near the project area and possible associated safety issues.

However, the larger project area has been subject to several heritage assessments studies in the past (see Part 11, 'Bibliography relating to heritage studies').

Google Earth imagery was used to establish the presence of any possible heritage resources in proposed developmental areas.

6.2 Databases, literature surveys and maps

Databases kept and maintained at institutions such as the PHRA, the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and SAHRA's national archive (referred to as the South African Heritage Resources Information System, [SAHRIS]) were consulted to determine whether any heritage resources of significance had been identified during earlier heritage surveys in or near the proposed prospecting area.

Literature relating to the pre-historical and the historical unfolding of the region where the project area is located was reviewed (see Part 6, 'Contextualising the Project Area' and Part 10, 'Select Bibliography').

6.3 Consultation process undertaken and comments received from stakeholders

No specific consultation process was necessary for the heritage desktop study. All the necessary stakeholder consultation processes for the project is being done by SLR as part of the public participation process.

7 THE HERITAGE DESKTOP STUDY

7.1 Earlier heritage surveys

As noted earlier, a considerable number of heritage studies have been done in the past near the proposed prospecting area (see Part 11, 'Bibliography relating to heritage studies'). These

studies indicate that the most common type and range of heritage resource which does occur in this area consists of stone walled sites which date from the Late Iron Age (AD1600 to AD1820)

The proposed prospecting area stretches across a long, narrow piece of land from the western edge of the Pilanesberg to the Tlhorosane hills in the west. This piece of land cuts across a broad swath of land situated between the Pilanesberg in the east and the Matlapynsberg further to the west and incorporates the Tlhorosane hills situated mid-way between these mountain ranges. This land belongs to the Batlhako tribe who occupied this part of the North-West from AD1690 to the present.



Figure 4- Some stone walled settlements (yellow pointers) located in the Tlhorosane hills in the village of Mabelaleng (above).

Members of the Tlhako occupy most of the towns in this region. Older, pre-historical and historical settlements constructed with stone walls belonging to this group, and perhaps other groups with unknown identities, occur along this swath of land. Most of these settlements are concentrated along the Tlhorosane hills. Lower numbers and smaller sites occur on the level plain. Some of the important key settlements in the area include Legatalle located in the Tlhorosane hills in the town of Mabelaleng.

Legatalle was the capital of the Tlhako ruler Motsitsi (AD1740 - ?). The name Mabelaleng is derived from one of his wives. This is the only place in Tswana history (according to the author) which have been named in honour of a women. Motsitsi, and his son Molotsi who also lived here

until the early nineteenth century, are well remembered from oral history. Mabelaleng may have been a successful medicine woman.

The eastern end of the prospecting area ends in the foothills of the Pilanesberg within the Tlhako Meele's sphere of influence. According to oral tradition several holy places for worship are in this part of the Pilanesberg. Their presence and location would have to be confirmed by fieldwork and advising spokespersons.

7.2 The prospecting area

Google Earth imagery suggests that some rudimentary stone walled sites may be located towards the northern part of the prospecting area. However, this is not certain as the imagery, even when using the historical timeline, is not unequivocally clear whether the outlines visible on the imagery in fact represent rudimentary stone walls or merely follow patterns of vegetation growth which can be interpreted as stone walls.

However, if any stone walled sites do occur, they may be affected by the three northern most boreholes as well as the two northern most trenches.

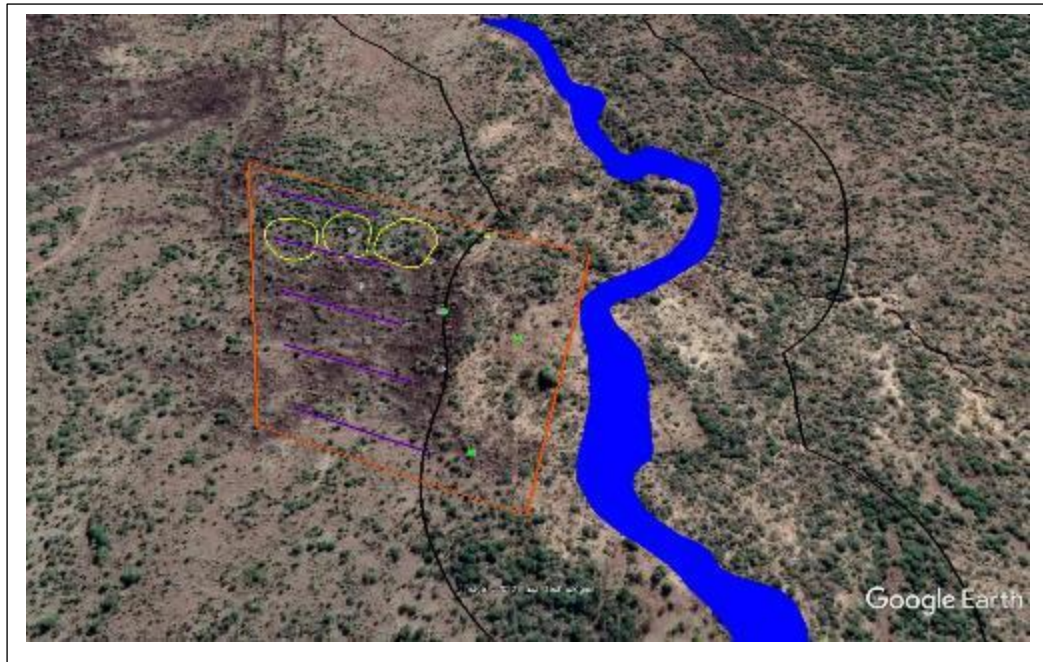


Figure 5- Possible stone walls demarcated with yellow lines according to Google imagery. However, is not clear whether these in fact represent stone walls or merely patterns according to which vegetation growth occurred (above).

7.3 Summary

The desktop heritage study for the proposed prospecting area revealed possible rudimentary stone walled sites in the northern part of the prospecting area. However, it is uncertain whether the images on Google imagery in fact represent stone walls or merely patterns according to which vegetation growth occurred.

If any stone walled sites may occur, they may be affected by the three northern most boreholes as well as the two northern most trenches.

Mitigation measures may include shifting the positions of the boreholes and the trenches to avoid these potential rudimentary stone walls.

Consequently, detailed chance-find procedures are outlined should any stone walled sites or any other heritage resources such as graves be encountered or exposed during the proposed prospecting activities (see below).

7.4 Chance-find procedures

If any heritage resources are exposed during any phase of the proposed prospecting activities the following chance-find procedures must be implemented, namely:

- The person or group (identifier) who identified or exposed the heritage resource must cease all activity in the immediate vicinity of the site.
- The identifier must immediately inform the senior on-site manager of the discovery.
- The senior on-site manager must make an initial assessment of the extent of the find and confirm that further work has stopped and ensure that the site is secured, and that controlled access is implemented.
- The senior on-site manager will inform the Environmental Officer (EO) and Health and Safety (HS) officers of the chance-find and its immediate impact on the project. The EO will then contact the project archaeologist.
- The project archaeologist will do a site inspection and confirm the significance of the discovery, recommend appropriate mitigation measures, and notify the SAHRA Archaeology, Palaeontology and Meteorites Unit (Natasha Higgitt/Phillip Hine 021 462 5402); and
- Based on the comments received from the authorities the project archaeologist will provide the mine with a Terms of References Report and associated costs if mitigation measures must be implemented.

If any graves or graveyards are exposed during any phase of the proposed prospecting activities the following chance-find procedures must be implemented, namely:

- The project archaeologist must confirm the presence of graveyards and graves and follow the following procedures.
- Inform the local SAPS and traditional authority.
- The project archaeologist in conjunction with the SAPS and traditional authority will inspect the possible graves and make an informed decision whether the remains are of forensic, recent, cultural-historical or of archaeological significance.
- Should it be concluded that the find is of heritage significance and therefore protected in terms of heritage legislation the project archaeologist will notify the SAHRA Burial Grounds and Graves Unit (Thingahangwi Tshivhase /Mimi Seetelo 012 320 8490); and
- The project archaeologist will provide advice with mitigation measures for the graveyards and graves.

Mitigation measures may also include shifting the positions of the boreholes and the trenches to avoid the rudimentary stone walls.

In the event of a chance-find, whether heritage resources, graves, or graveyards a Phase 2 rescue operation may be require subject to permits issued by SAHRA for this purpose.

8 CONCLUSION AND RECOMMENDATIONS

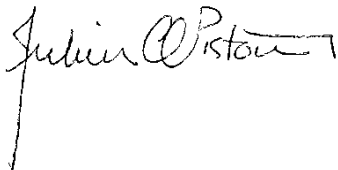
Google Earth imagery, amongst some of the sources used for the desktop heritage study for the proposed prospecting area, revealed possible rudimentary stone walled sites in the northern part of the prospecting area. However, it is uncertain whether the images on Google imagery in fact represent stone walls or merely patterns according to which vegetation growth occurred.

If any stone walled sites may occur, they may be affected by the three northern most boreholes as well as the two northern most trenches.

Consequently, detailed chance-find procedures are outlined should any stone walled sites or any other heritage resources such as graves be encountered or exposed during the proposed prospecting activities (outlined in detail).

Mitigation measures may also include shifting the positions of the boreholes and the trenches to avoid the rudimentary stone walls.

In the event of a chance-find, whether heritage resources, graves, or graveyards a Phase 2 rescue operation may be require subject to permits issued by SAHRA for this purpose.

A handwritten signature in black ink, appearing to read 'Julius CC Pistorius'. The signature is written in a cursive style with a long vertical line extending downwards from the end of the name.

DR JULIUS CC PISTORIUS

Member ASAPA

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