

**HERITAGE IMPACT ASSESSMENT FOR THE  
PROPOSED ROODERAND PLATINUM MINE,  
MANKWE DISTRICT, NORTH WEST PROVINCE**

For:

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## **SUMMARY**

### **Heritage impact assessment for the proposed Rooderand Platinum Mine, Mankwe District, North West Province**

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to develop a new mine and its infrastructure.

Based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

- It is recommended that the mitigation measures indicated in Appendix 2 for each identified site be implemented, i.e. preservation of the sites if possible, otherwise extensive salvage excavation and/or mapping necessary.
- The developer should be notified that archaeological sites might be exposed during the construction work. If anything is noticed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

CONTENTS

SUMMARY . . . . . 1

CONTENTS . . . . . 2

1. AIMS OF THE SURVEY ..... 3

2. TERMS OF REFERENCE..... 3

3. DEFINITIONS ..... 3

4. LEGISLATIVE REQUIREMENTS ..... 4

5. METHODOLOGY..... 5

6. DESCRIPTION OF THE AREA ..... 6

7. DISCUSSION ..... 6

8. RECOMMENDATIONS ..... 7

9. REFERENCES..... 7

10. PROJECT TEAM..... 8

APPENDIX 1 ..... 9

APPENDIX 2 ..... 10

APPENDIX 3 ..... 12

## HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED ROODERAND PLATINUM MINE, MANKWE DISTRICT, NORTH WEST PROVINCE

### 1. AIMS OF THE SURVEY

The National Cultural History Museum was contracted by Strategic Environmental Services to survey an area in which it is proposed to develop a new platinum mine. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area that is to be impacted by the developed.

### 2. TERMS OF REFERENCE

The **Terms of Reference** for the study were to:

- 2.1 Identify all objects, sites, occurrences and structures of an archaeological or historical nature located in the area of the proposed development.
- 2.2 Assess the significance of the cultural resources in terms of their historical, social, religious, aesthetic and scientific value.
- 2.3 Determine the possible impacts on the known and potential cultural resources in the area of interest.
- 2.4 Develop mitigation or control measures for impact minimization and cultural resources preservation.
- 2.5 Develop procedures to be implemented if previously unidentified cultural resources are uncovered during the construction.

### 3. DEFINITIONS AND ASSUMPTIONS

The following aspects have a direct bearing on the survey and the resulting report:

- X **Cultural resources** are all nonphysical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.
- X The **significance** of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- X Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.

- X The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not be disclosed to members of the public.

#### 4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are mainly dealt within two acts. These are the South Africa Heritage Resources Act (Act 25 of 1999) and the Environmental Conservation Act (Act 73 of 1989).

##### 4.1 South African Heritage Resources Act

###### **Archaeology, palaeontology and meteorites**

In terms of Section 35(4) of this act, no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; bring onto, or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

###### **Structures:**

Section 34(1) of this act states that no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

“Structure” means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

“Alter” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

###### **Human remains:**

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

(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.

Human remains that are less than 60 years old is subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations.

Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925). Permission must also be gained from the descendants (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 (ie 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 (Act 65 of 1983 as amended)**.

## 4.2 Environmental Conservation Act

This act states that a survey and an evaluation of cultural resources should be undertaken in areas where development, which will change the face of the environment, is to be made. The impact of the development on the cultural resources should also be determined and proposals to mitigate this impact are to be formulated.

## 5. METHODOLOGY

### 5.1 Preliminary investigation

#### 5.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted - see the list of references below. Nothing pertaining to the archaeology of this particular area was found, although a number of survey reports from adjacent areas exist.

#### 5.1.2 Data bases

The **Archaeological Data Recording Centre** (ADRC), housed at the National Cultural History Museum, Pretoria, was consulted. The **Environmental Potential Atlas** was also consulted.

#### 5.1.3 Other sources

The topocadastral and other maps were also studied - see the list of references below.

### 5.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was indicated to the consultant by Strategic Environmental Focus by means of maps. The area was investigated by walking and driving across it. Special attention was given to unnatural topographical occurrences such as trenches, holes, outcrops and clusters of trees were investigated.

Where possible, local people were interviewed in an effort to obtain information on the existence of known sites.

### 5.3 Documentation

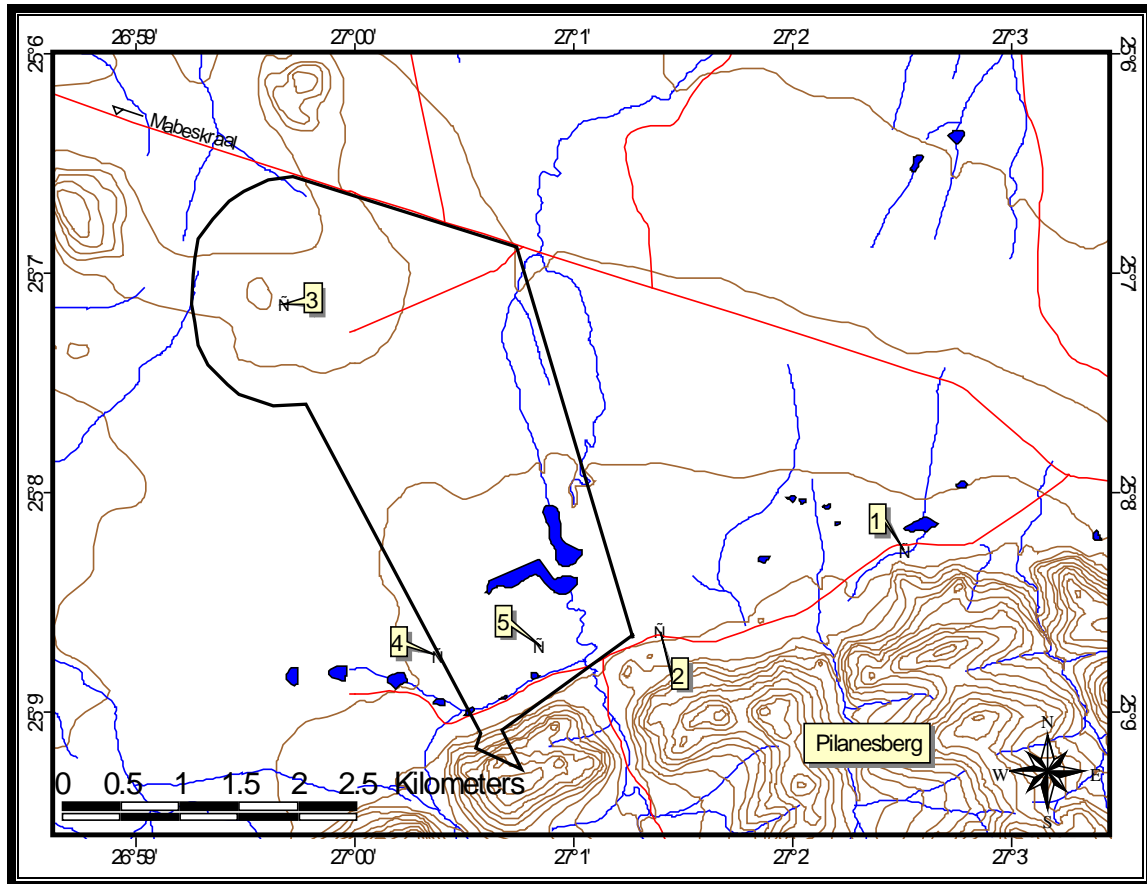
All sites, objects and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities were determined by means of the **Global Positioning System** (GPS)<sup>11</sup> and plotted on a map. This information was added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

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<sup>11</sup> According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then correlate it with reference to the physical environment before plotting it on the map.

## 6. DESCRIPTION OF THE AREA



**Figure 1.** Study area with the location of the identified sites of cultural significance.

The survey area was determined by the proposed development, and is located on portion 2 of the farm Rooderand 46JQ and a section of the farm Tuschenkomst 135JP. The topography of the area can be described as flat to rolling plains, with a few small hills.

The geology of the area consists of norite, in places covered by broad bands of sand. The norite outcrops have been quarried in the past. Several smaller streams cross the area, but are dry for most part of the year. Two vegetation zones are identified for the area. The northern and largest section is classified by Acocks as Clay Thorn Bushveld, whereas the southern section is classified as Mixed Bushveld. The vegetation have been impacted on by agricultural activities such as ploughing and grazing.

## 7. DISCUSSION

A number of sites were identified.

### 7.1 Stone Age

A number of stone tools, dating mostly to the Middle Stone Age, were identified during the survey. These, however, are surface occurrences and as such have no significance.

## 7.2 Iron Age

Three sites dating to the Iron Age were identified (see Appendix 2). Site number three is a late Iron Age stone walled site, located on a small norite outcrop. Unfortunately, this site has been damaged by earlier quarrying activities.

Site number four is an iron smelting site. It is impossible to determine the extent of this site due to the dense vegetation, but it is possible that quite a number of smelting furnaces could be located here.

Site number 5 is possibly an Early Iron Age site. This interpretation is based solely on the occurrence of hut features and the environment in which it is found.

## 7.3 Historical period

Two cemeteries (sites one and two – Appendix 2) have been identified during a previous survey. These are still in use and are therefore well known. However, it is possible that additional individual graves and smaller cemeteries can still be located in the future.

## 8. RECOMMENDATIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to develop a new mine and its infrastructure.

Based on what was found and its evaluation, it is recommended that the proposed development can continue in the area, on condition of acceptance of the following recommendations:

- It is recommended that the mitigation measures indicated in Appendix 2 for each identified site be implemented, i.e. preservation of the sites if possible, otherwise extensive salvage excavation and/or mapping necessary.
- The developer should be notified that archaeological sites might be exposed during the construction work. If anything is noticed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

## 9. REFERENCES

### 9.1 Data bases

Archaeological Data Recording Centre, National Cultural History Museum, Pretoria.

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.



## 9.2 Literature

Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik.

Mason, R.J. 1962. *Prehistory of the Transvaal*. Johannesburg: Witwatersrand University Press.

Van Riet Lowe, C. n.d. *The distribution of Prehistoric rock engravings and paintings in South Africa*. Archaeological Survey, Archaeological Series No. 7.

Van Schalkwyk, J.A. 2002. *A survey of cultural resources in the proposed Kruidfontein mining area, Mankwe district, North west Province*. Unpublished report 2002KH05. Pretoria: National Cultural History Museum.

Van Warmelo, N.J. 1935. *A Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

Van Warmelo, N.J. 1977. *Anthropology of Southern Africa in Periodicals to 1950*. Pretoria: Government Printer.

## 9.3 Maps

1: 50 000 Topocadastral maps –2527AA, 2526BB

## 10. PROJECT TEAM

J van Schalkwyk

## **APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES**

### **Significance of impact:**

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

### **Certainty of prediction:**

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

### **Recommended management action:**

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

### **Legal requirements:**

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

## APPENDIX 2: SURVEY RESULTS<sup>2</sup>

[Previous site numbers relate to other known sites on a particular ¼ degree sheet already documented in the ADRC, and does not necessarily refer to sites occurring on or close to the specific area of development.]

1. Site number: 2527AA7

Location: Rooderand 46JQ: S 25E08'16.0"; E 27E02'31.4"

Description: Cemetery

Discussion: Still in use by local community

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: None

Legal requirements: Permits and notification

2. Site number: 2527AA8

Location: Rooderand 46JQ: S 25E08'39.3"; E 27E01'24.0"

Description: Cemetery

Discussion: Still in use by local community

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: None

Legal requirements: Permits and notification

3. Site number: 2526BB3

Location: Witleifontein 136JP: S 25E07'08.8"; E 26E59'40.8"

Description: Stone walled site dating to the Late Iron Age

Discussion: This site is located close to the area of highest development and the chances of future impacts on it are therefore quite high.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit

4. Site number: 2527AA16

Location: Rooderand 46JQ: S 25E08'45.0"; E 27E00'22.9"

Description: Iron smelting site with big concentrations of iron slag, tuyere pieces and potshards

Discussion: This site is located on the border of the development area. However, such sites are quite rare and therefore of high significance.

Significance of impact: Medium

Certainty of prediction: Probable

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit

5. Site number: 2527AA17

Location: Rooderand 46JQ: S 25E08'42.3"; E 27E00'50.9"

Description: Burned hut clay, potshards, etc. Probably Early Iron Age village site

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<sup>22</sup> See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.

Discussion: Although located quite close to the edge of the proposed development area, this site might be of high significance if it's identification as Early Iron Age is correct, as there are not many such sites known in the area.

Significance of impact: Medium

Certainty of prediction: Probable

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit

### APPENDIX 3: GLOSSARY AND ABBREVIATIONS

This section is included to give the reader some necessary background. It must be kept in mind, however, that these dates are all relative and serve only to give a very broad framework for interpretation.

#### STONE AGE

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

#### IRON AGE

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

#### HISTORICAL PERIOD

Since the arrival of the white settlers - c. AD 1840 in this part of the country

ADRC - Archaeological Data Recording Centre

core - a piece of stone from which flakes were removed to be used or made into tools

SAHRA - South African Heritage Resources Agency