

**A SURVEY OF CULTURAL RESOURCES IN THE  
PROPOSED SIGMA COLLIERY NORTH WEST STRIP MINE,  
SASOLBURG DISTRICT, FREE STATE PROVINCE**

For:

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REPORT: 96KH10

Date of survey: October 1996

Date of report: November 1996



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**NATIONAL CULTURAL HISTORY MUSEUM**

## SUMMARY

### **A survey of cultural resources in the proposed Sigma Colliery North West Strip Mine, Sasolburg District, Free State Province**

A survey to establish the nature, extent and significance of cultural resources was made in the area of the proposed Sigma Colliery North West Strip Mine, Sasolburg District, Free State Province.

A number of archaeological sites were found. Most of these are judged to be of no significance and will not prevent the mining operations from continuing. However, two cemeteries, which are of possible emotional significance, were found. These will either have to be relocated, or the project design will have to be modified, before mining operations can continue.

One Iron Age site might be impacted upon by the building of the proposed conveyor. It is suggested that the route for this conveyor is realigned in order not to cross the archaeological site.

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## **1. AIMS OF THE SURVEY**

The National Cultural History Museum was requested by **Walmsley Environmental Consultants** to survey a section of land south of the Vaal River, Free State. The aim was to locate, identify, evaluate and document sites, objects and structures of archaeological, historical and cultural importance within the boundaries of the proposed mining area.

## **2. TERMS OF REFERENCE**

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

- 2.1 Identify all sites, occurrences and structures of an archaeological or historical nature (cultural resources) located on the site of the proposed mine.
- 2.2 Assess the significance of the cultural resources in terms of their historical, social, religious, aesthetic and scientific value.
- 2.3 Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
- 2.4 Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources.

## **3. CONDITIONS AND ASSUMPTIONS**

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

- **Cultural resources** are all non-physical and physical human-made as well as natural occurrences that are associated with human activity. These include all sites, structures and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

- The **significance** of the sites and artifacts is 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.
- Significance is site specific and relates to the content and context of the site. 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.
- The latitude and longitude of an archaeological site is to be treated as sensitive information by the developer, and should not be disclosed to members of the public.

## 4. METHODOLOGY

### 4.1 Preliminary investigation

#### 4.1.1 Survey of the literature

A survey of all relevant literature was conducted with the aim of reviewing the previous research done and to determine the potential of the area. In this regard various anthropological, archaeological and historical sources were consulted -see list of references.

#### 4.1.2 Data sources

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

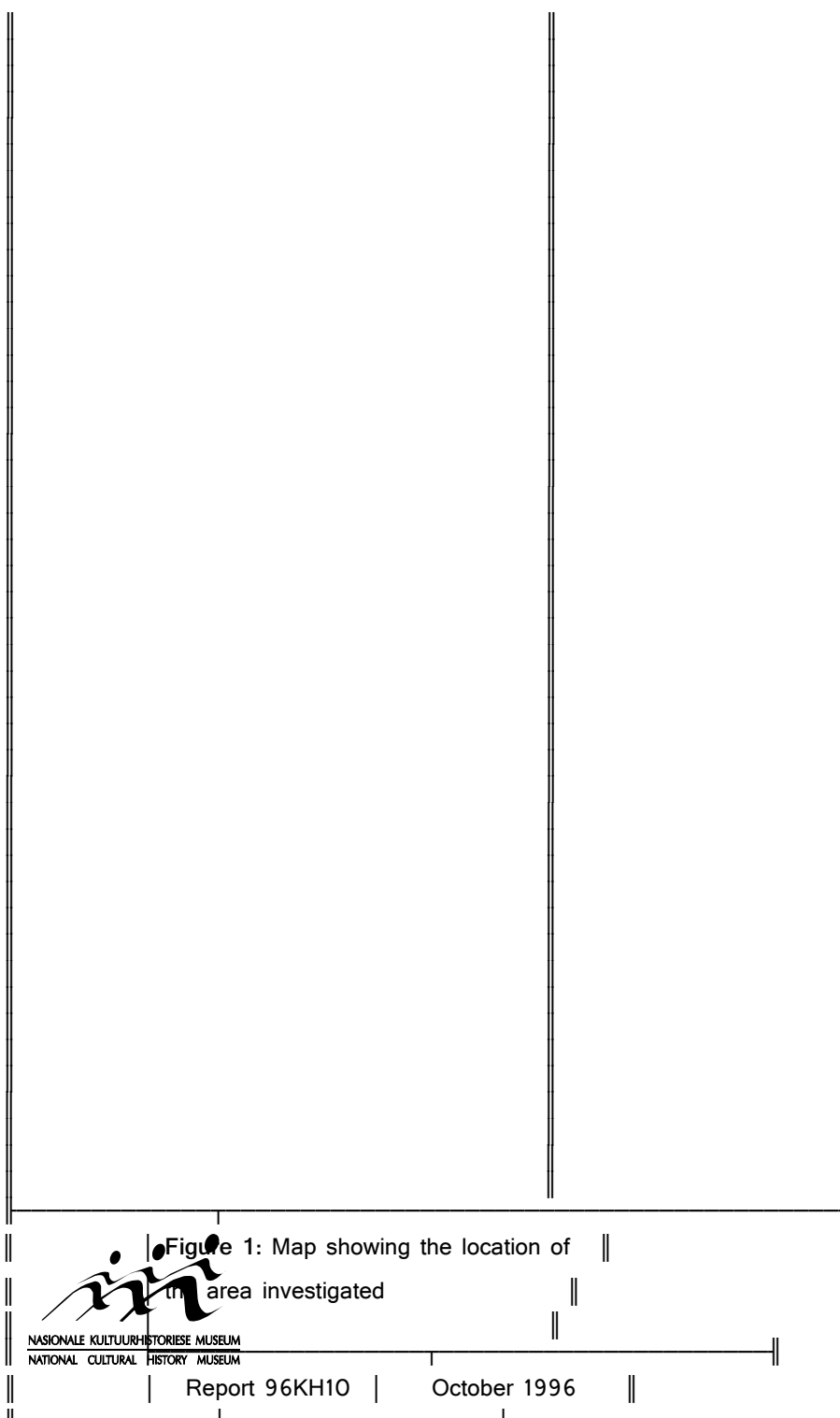
#### 4.1.3 Other sources

The relevant topocadastral and other maps were studied.

### 4.2 Field survey

The survey was conducted according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. This was done by dividing the whole area into blocks, making use of natural and human-made topographical elements. Areas with a potential for human use were investigated. Special attention was given to outcrops, cliffs were inspected for rock shelters, while stream beds and unnatural topographical occurrences such





as trenches, holes and clusters of exotic (and indigenous) trees were investigated.

#### 4.3 Documentation

All sites, objects and structures identified were documented according to the general minimum standard accepted by the archaeological profession.

Coordinates of individual localities were determined by means of the Global Positioning System (GPS)<sup>1</sup> and plotted on a map. The information was added to the description to facilitate the identification of each locality.

#### 4.4 Presentation of the information

In discussing the results of the survey, a chronological rather than a geographical approach was followed to present an overview of human occupation and land use in the area. This helps the reader to better understand and facilitate the potential impact of the development.

### 5. DESCRIPTION OF THE AREA SURVEYED

The area surveyed (Figure 1) is located on the farms Rivierplaats 404, Rietfontein 123, Uitkomst 413, Petronella 313 and Boschbank 12 of the Sasolburg district (Free State Province).

The vegetation of the study area is classified by Acocks (1978:88) as Cymbopogon-Themada Veld, featuring gentle rolling highveld, with the most important geographical feature being the Vaal River. A few rocky outcrops are present. Large parts of the area is subject to intensive agricultural activities, with the result that any archaeological indicators visible on the surface would have been destroyed or disturbed out of context.

Three geological formations are found in the area. The largest area consists of sandstone, shale and coal of the Vryheid Formation of the Ecca Group of the Karoo Sequence and is of Permian Age. The second formation is intrusive dolerite of Jurassic Age. Lastly, some alluvium of Quaternary Age is also found in the area. This latter material is in all probability part of the so-called Vaal River gravels.

### 6. DISCUSSION

#### 6.1 Stone Age

The Vaal River basin is well-known for its river gravels which in some places produce Early Stone Age tools as well as faunal material. The original identification and dating (eg. Söhnge, P.G., Visser, D.J.L. & Lowe, C. van Riet

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<sup>1</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.



1937; Archaeological Survey 1948) of these were later proved to be wrong (Partridge & Brink 1967). It is advisable to be on the lookout for these gravels when mining operations start, and to have an archaeologist present to investigate it if necessary.

A number of Middle Stone Age tools were found. All of these are open surface finds (in contrast to stratified sites in shelters). In all cases the artifacts were disturbed completely out of context due to agricultural and road construction activities. Most of the artifacts were made from quartzite.

One site containing Late Stone Age artifacts were also found (see Appendix 2, no. 1).

## 6.2 Iron Age

Two Iron Age stone walled settlement sites were identified in the area (see Appendix 2, no. 2 & 5). Maggs (1976:44, 38-39) labelled these the "Vredefort Dome settlements", to distinguish it from other types of settlement clusters found in other parts of the central highveld region. These settlements date to the last couple of centuries and can be associated with the Sotho-Tswana speaking people.

## 6.3 Historic

Nothing could be found in the available literature on the recent history of the area, and no monuments are known to exist in the area.

Two cemeteries, containing approximately 120 graves in total, were located (see Appendix 2, no. 3 & 4). The contents of the graves will have to be relocated if the development is to take place. Though none were identified, it must be kept in mind that if any of the headstones are older than 50 years, a permit for their removal will have to be obtained from the National Monuments Council.

## 7. CONCLUSIONS AND RECOMMENDATIONS

Three archaeological sites were found (see Appendix 2). They are judged of little

Table 1: Summary of impact description and assessment of the North West Strip Mine (see Appendix 2)

Site no.	Type of site	Significance of impact	Certainty of prediction	Status of impact	Recommended management action	Legal requirement
D2627DC1	Stone Age	Low	Definite	Neutral	None	
D2627DC2	Iron Age	Low	Definite	Neutral	None	
D2627DC3	Historic	Medium	Definite	Negative	Relocation of graves	Permit: Dept Health
D2627DC4	Historic	Medium	Definite	Negative	Relocation of graves	Permit: Dept Health
D2327DD1	Iron Age	Low	Probable	Neutral	Possible slight realignment of route	

significance and will not prevent the mining operation from continuing, or require modification of the project design. The two cemeteries, which are of possible emotional significance, will either have to be relocated, or the project design will have to be modified, before mining operations can continue.

One Iron Age site might be impacted upon by the building of the proposed conveyor. It is suggested that the route for this conveyor is realigned in order not to cross the archaeological site.

## 8. REFERENCES

### 8.1 Unpublished sources

#### 8.1.1 Data base:

Archaeological Data Recording Centre, (former) TVI section, National Cultural History Museum, Pretoria.

### 8.2 Published sources

#### 8.2.1 Books and journals

Acocks, J.P.H. 1975. Veld Types of South Africa. Memoirs of the Botanical

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Söhnge, P.G., Visser, D.J.L. & Lowe, C. van Riet. 1937. The geology and

Van Riet Lowe, C. 1952. The Vaal River chronology. An up-to-date summary.

### 8.2.2 Maps

1: 50 000 Topocadastral maps - 2627DC (Weiveld), 2627DD (Sasolburg)  
1:250 000 Geological Series - 2626 Wes-Rand

### 9. PROJECT TEAM

J van Schalkwyk - project leader  
M Naude  
S Smith

## 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: Over 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only over 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

### Status of the impact:

With mitigation and the resultant recovery of material, a negative impact can be turned positive. Describe whether the impact is positive (a benefit), negative (a cost) or neutral

### 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

### Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project

## APPENDIX 2: SURVEY RESULTS

### 1. Site number: D2627DD1

Description: Some Late Stone Age tools and flakes found on a rocky outcrop.

Location: Uitkomst 413IQ: 26°47'43" S; 27°44'48.4" E [X 2964925.152; Y - 74244.817]

Discussion: As these are surface finds, most of the artifacts have undoubtedly been disturbed out of context.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: None necessary as the site is already fully documented.

### 2. Site number: D2627DD2

Description: Some low stone walling, found on a rocky outcrop. The walls were constructed to form small terraces for settling on.

Location: Uitkomst 413IQ: 26°47'42" S; 27°44'48.5" E [X 2964894.392; Y - 74258.456]

Discussion: This site is part of Late Iron Age settlement that took place in the larger geographical area. Apart from the stone walls, which are very insignificant, no other cultural material was found.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: None necessary as the site is already fully documented.

### 3. Site number: D2627DD3

Description: Cemetery consisting of approximately 20 graves, indicated by head stones, stone cairns and grave goods.

Location: Smaldeal 330IQ: 26°47'28.8" S; 27°42'53.7" E [X 2964476.159; Y - 71098.573]

Discussion: Some of the graves are of recent (1980s) origin and are still visited by descendants of the people buried here. It is located on the corner where the realignment of the Barrage Road will start.

Significance of impact: Medium

Certainty of prediction: Definite

Status of impact: Negative - it will cost money to relocate the graves.

Recommended management action: If the road is to be realigned at this point, the graves will have to be relocated. This is a matter of obtaining permission from descendants (directly), or advertising in the newspapers about the pending move. This must be followed by permission, from the Department of Health and the Premier of the Province. The work is usually undertaken by a professional firm of undertakers.



4. Site number: D2627DD4

Description: Cemetery consisting of approximately 100 graves, indicated by head stones, stone cairns and grave goods. As the site is very overgrown with grass and not all the graves are clearly marked, it is difficult to count all the graves.

Location: Rietfontein 123|Q: 26°47'40.0" S; 27°43'20.4" E [X 2964818.772; Y - 71814.792]

Discussion: Some of these graves are of recent (1980s) origin and are still being visited by descendants of the people buried here. They are located in the area that will be strip mined.

Significance of impact: Medium

Certainty of prediction: Definite

Status of impact: Negative - it will cost money to relocate the graves.

Recommended management action: If mining takes place at this point, these graves will have to be relocated. This is a matter of obtaining permission from descendants (directly), or advertising in the newspapers about the pending move. This must be followed by permission, from the Department of Health and the Premier of the Province. The work is usually undertaken by a professional firm of undertakers. It may be an easier option not to mine this part as it is located in the extreme south western corner of the proposed mine.

5. Site number: D2627DC1

Description: Low, circular stone walls.

Location: Boschbank 12|Q: 26°48'32.8" S; 27°45'50.3" E [X 2966474.216; Y - 75947.994]

Discussion: This forms part of Late Iron Age settlement in the larger geographical area. Apart from the stonewalling, no other cultural material was found on the surface.

Significance of impact: Low

Certainty of prediction: Probable

Status of impact: Neutral

Recommended management action: As the site is located on the route of the proposed conveyor, it is suggested that the latter be moved 50 metres south to bypass the site. If this is not possible, it is suggested that an archaeologist be present during construction to identify any material of significance. In this case a permit from the National Monuments Council will be necessary.

### APPENDIX 3: GLOSSARY

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	1 500 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

#### IRON AGE

Early Iron Age	AD 200 - AD 1000
Late Iron Age	AD 1000 - AD 1830

#### HISTORICAL PERIOD

Since the arrival of the white settlers - c. AD 1830 in this part of the country