

**ARCHAEOLOGICAL SURVEY OF A SECTION OF  
THE SECUNDA-MOZAMBIQUE GAS PIPELINE,  
ERMELO AND BETHAL DISTRICTS, MPUMALANGA**

For:

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## **SUMMARY**

### **Archaeological survey of a section of the Mozambique-Secunda pipeline, Ermelo and Bethal Districts, Mpumalanga.**

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 lay a pipeline.

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:

- The area where the graves are located should be avoided.
- The developer should also 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.

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## **ARCHAEOLOGICAL SURVEY OF A SECTION OF THE SECUNDA-MOZAMBIQUE GAS PIPELINE, ERMELO AND BETHAL DISTRICTS, MPUMALANGA**

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

The National Cultural History Museum was contracted by **GLMC Joint Venture** to survey a section of the proposed Secunda-Mozambique pipeline. The aim was therefore 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 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;

###### **Burial grounds and graves:**

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. Although some published references to the archaeology of the larger area was found, nothing pertaining to the particular survey route was found. The original survey report by Kaplan (n.d.) should be read in conjunction with this report.

#### 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. The area that had to be investigated was identified by GLMC Joint Venture. Staff members assisted with the survey, acting as guides. The area was investigated by walking across it. Special attention was given to unnatural topographical occurrences such as trenches, holes, outcrops and clusters of trees were investigated.

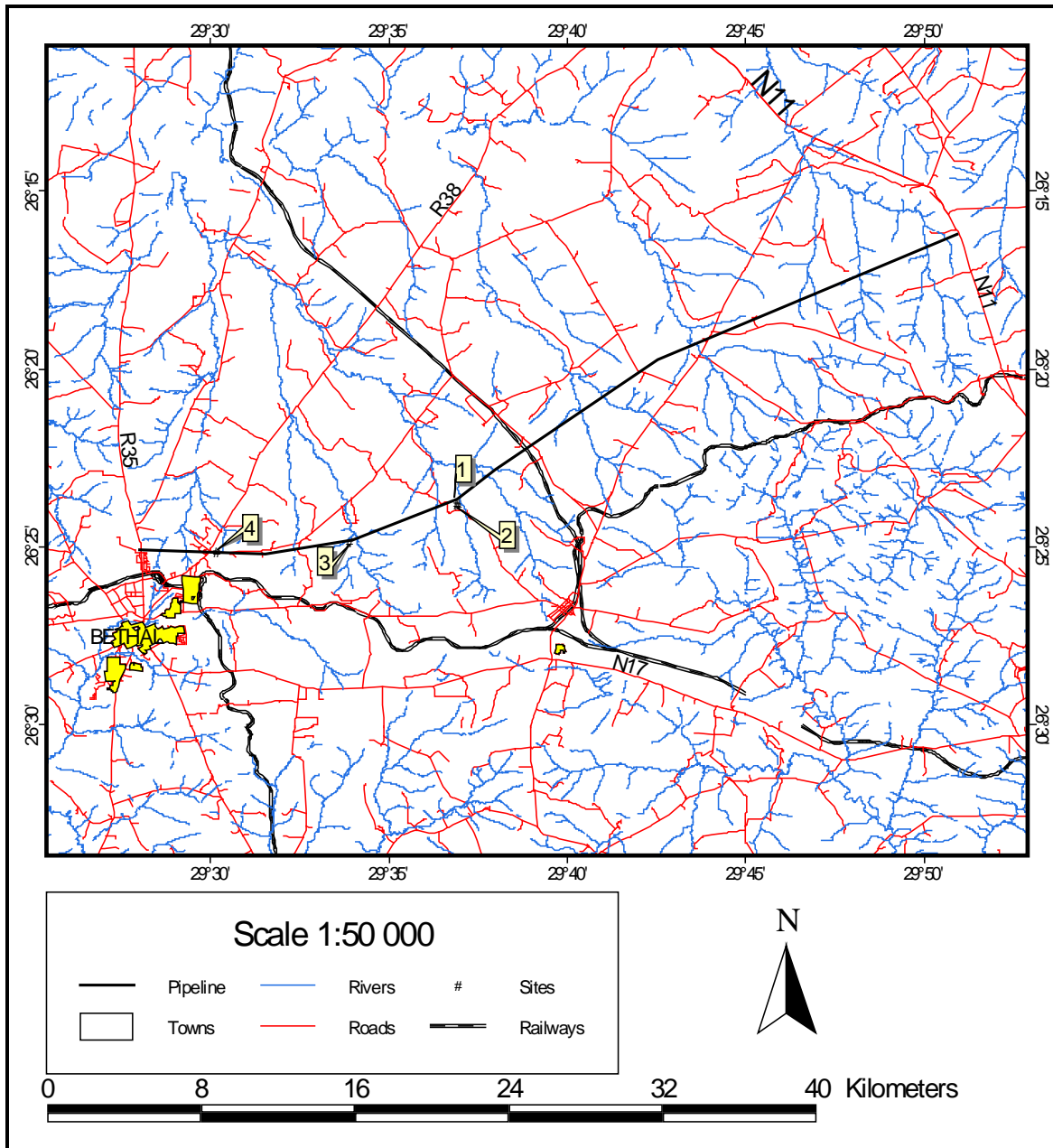
### 5.3 Documentation

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.** Section of the pipeline surveyed for this report and the location of the identified sites (numbered black dots).

The area surveyed was determined by the proposed development (see Fig. 1). It include the following farms, in the Ermelo and Bethal districts of Mpumalanga: Bankfontein 215IS, Haartebeesfontein 239IS, Boschmanskrans 217IS, Nooitgedacht 237IS, Witbank 236IS, Witbank 235IS, Kuilfontein 284IS, Spion Kop 252IS, Vaalbank 233IS, Banklaagte 254IS, Vrede 257IS, Eerste Geluk 256IS. As such it covers km. 88 to 38 of the pipeline, which was surveyed during two field trips.

The topography of the area can be described as undulating hills, bisected by a number of rivers. Although large sections of the area still have its original vegetation, a lot of it has been impacted on by development for farming, which would have impacted on cultural resources.

## 7. DISCUSSION

A number of informal cemeteries and single graves were identified. Some of these are located within the borders of the proposed development – see Appendix 2 – and the alignment would have to be adjusted in order to bypass these features.

## 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 lay a pipeline.

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:

- The areas where the graves are located should be avoided.
- The developer should also 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. FORWARD SCOPING

In the near future the development will be crossing the area on topocadastral maps 2629AB and 2629CB.

A search of available data bases have produced references to a number of sites in the area. These are mostly graves or cemeteries and old farmsteads, none of which would present a problem to the proposed development if located early.

## 10. REFERENCES

### Date base

Archaeological Data Recording Centre, National Cultural History Museum, Pretoria.  
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.



**Published sources**

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

Kaplan, J. n.d. *Sasol Gas supply project: gas pipeline from Komatipoort to Secunda*. Unpublished report: The Agency for Cultural Resource Management.

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

Myburgh, A.C. 1956. *Die stamme van die Distrik Carolina*. Etnologiese Reeks Nr. 34. Pretoria: Staatsdrukker.

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.

**10.2.2 Maps**

1: 50 000 Topocadastral maps – 2629BC, 2629BD

**11. 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.]

Map datum used: Hartebeeshoek 94 (WGS84)

1. Site number: 2629BC2

Location: Spion Kop 252IS: S 26°23'49"; E 29°36'54"

Description: Approximately four graves, marked with stone.

Discussion: These graves are located in the middle of the proposed develop and the development should be rerouted to avoid it.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Reroute line to avoid area

Legal requirements: If avoided, no legal requirements

2. Site number: 2629BC3

Location: Spion Kop 252IS: S 26°23'51"; E 29°36'56"

Description: Single grave, fenced.

Discussion: This area is outside the development, but is indicated in order that if rerouting takes place, it can be identified and avoided.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: Avoid area

Legal requirements: None

3. Site number: 2629BC4

Location: Banklaagte 254IS: S 26°24'52"; E 29°33'55"

Description: Single grave marked with stones.

Discussion: This site is close to the proposed development, but would not be impacted on.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: Avoid area.

Legal requirements: If avoided, no legal requirements

4. Site number: 2629BC5

Location: Eerste Geluk 256IS: S 26°25'09"; E 29°30'11"

Description: Cemetery with approximately 45 graves, some with headstones going back to 1918.

Discussion: The development would actually bypass this site. As the site is very big and visual, it would be easy to avoid it.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: Avoid area

Legal requirements: None

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

### 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