

**ARCHAEOLOGICAL SURVEY OF A SECTION OF  
THE SECUNDA-MOZAMBIQUE GAS PIPELINE,  
CAROLINA DISTRICT, MPUMALANGA**

For:

**GLMC JOINT VENTURE**

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## **SUMMARY**

### **Archaeological survey of a section of the Mozambique-Secunda pipeline, Carolina District, 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 areas where the graves are located should be avoided. It would be the preferred option, as relocation of such graves is usually a time consuming process that would stop the proposed development in the area for a number of weeks.
- The various Iron Age sites are all missed by the proposed development and therefore do not present a problem.
- 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.

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 . . . . . 7

8. RECOMMENDATIONS . . . . . 7

9. REFERENCES . . . . . 8

10. PROJECT TEAM . . . . . 8

APPENDIX 1 . . . . . 9

APPENDIX 2 . . . . . 10

APPENDIX 3 . . . . . 13

## ARCHAEOLOGICAL SURVEY OF A SECTION OF THE SECUNDA-MOZAMBIQUE GAS PIPELINE, CAROLINA DISTRICT, 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 South African Heritage Resources Act

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

Section 35(4) of this act states that no person may, without a permit issued by the responsible heritage resources authority:

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency.

###### **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.

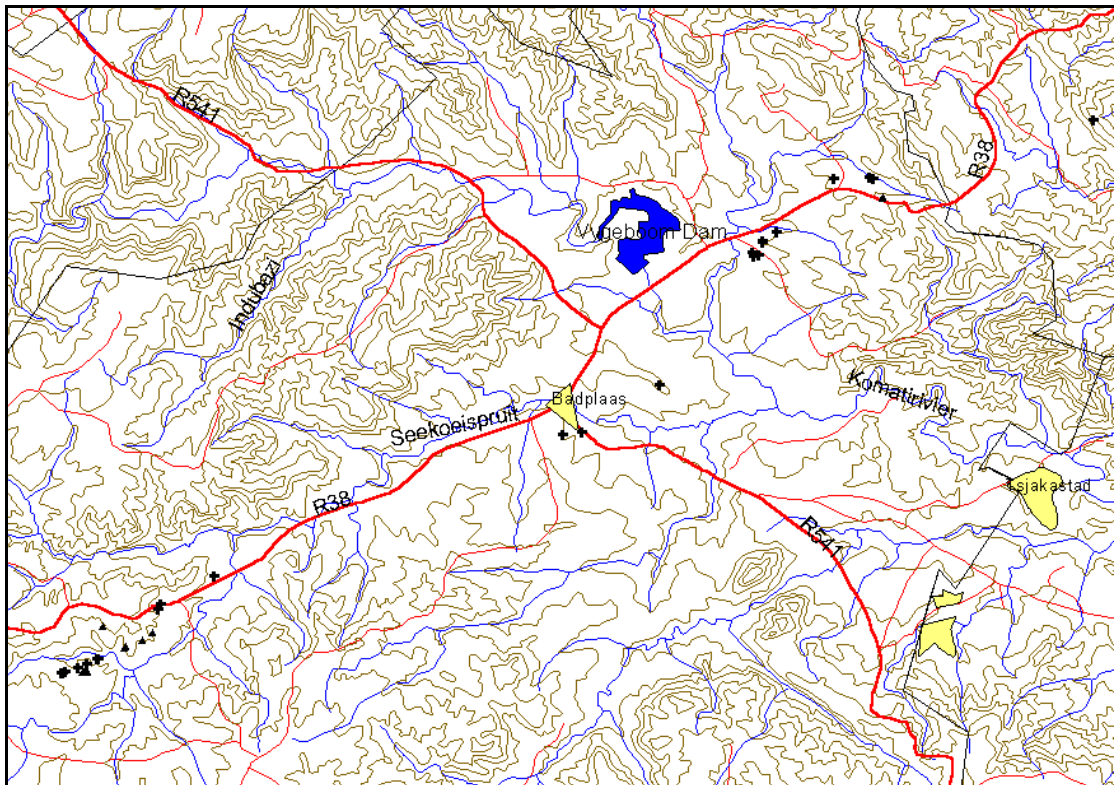
### 5.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by GLMC Joint Ventures. 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>1</sup> and plotted on a map. This information was added to the description in order to facilitate the identification of each locality.

## 6. DESCRIPTION OF THE AREA



**Figure 1.** Section of the pipeline surveyed for this report and the location of the additional identified sites (black triangles). Sites identified during the original survey indicated as black crosses.

<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.

The area surveyed was determined by the proposed development (see Fig. 1). It include the following farms, all in the Carolina district of Mpumalanga: Goedehoop 622JT, Vriesland 620JT, Vygeboom 619JT, Keeszyndoorns 708JT, Doornpoort 724JT, Avontuur 725JT, Boshhoek 442JT, Zilverkop 422JT, Goedverwacht 25JT, Rietfontein 19JT, Buffelspruit 27IT and Barneveld 16IT.

The topography of the area varies from mountains, to plains, bisected by a number of rivers. Although large sections of the area still have its original vegetation, a lot of it is also used for commercial forestry plantations, which would have impacted negatively on cultural resources.

## 7. DISCUSSION

Stone tools dating to the Middle Stone Age are found all over. However, this material is all surface material, eroding or being ploughed out. The implication is that it is not in primary context any more and therefore do not have much significance.

Myburgh (1956) indicates that there are a number of sites with rock art in the area. This is supported by information in the ADRC. Fortunately, none of these are close to the area of impact.

Myburgh (1956) also indicates that there are a large number of stone walled sites dating to the Late Iron Age and early historical period in the area. This is also supported by the current survey. Many of these sites are small and do no warrant further investigation. A few larger sites occur, although none are located in the area of impact.

A number of sites containing graves were identified.

## 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. It would be the preferred option, as relocation of such graves is usually a time consuming process that would stop the proposed development in the area for a number of weeks.
- The various Iron Age sites are all missed by the proposed development and therefore do not present a problem.
- 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. 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.

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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.

### 9.2.2 Maps

1: 50 000 Topocadastral maps – 2530DC, 2530DD, 2630AB

## 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: 2630AB3

Location: Barneveld 16IT: S 26°03'39.8"; E 30°20'53.4"

Description: Old farm labourer homestead, built from stone

Discussion: This site falls well outside the line of the proposed development. It is mentioned as its former inhabitants might be linked to some of the graves found in the area.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

### 2. Site number: 2630AB4

Location: Barneveld 16IT: S 26°04'17.5"; E 30°21'33.5"

Description: Possible cemetery with seven graves marked with stone cairns. It is possible that these graves link to a huge borrow pit found close by.

Discussion: It would be possible to reroute the pipeline around this site

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Avoid site. If not possible, relocate graves.

Legal requirements: If relocation takes place, then: notification, consultation and permits

### 3. Site number: 2630AB5

Location: Barneveld 16IT: S 26°04'17.5"; E 30°21'35.0"

Description: Two short sections of stone wall. The origin and significance of these walls are not known. It is possible that it relate to the previous site.

Discussion: The development would just miss the walls.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

### 4. Site number: 2630AB6

Location: Buffelspruit 22IT: S 26°04'03.5"; E 30°22'05.0"

Description: Large site with stone walling, possible graves, and stone markers (*diphiri*), signifying that it might be an old initiation site.

Discussion: It would be possible to reroute the pipeline around this site.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Avoid site. If not possible, relocate graves

Legal requirements: If relocation takes place, then: notification, consultation and permits

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

5. Site number: 2630AB7

Location: Barneveld 16IT: S 26°05'01.6"; E 30°20'26.8"

Description: Small stone walled site consisting of two concentric circles. No other material was found here and no other walling occurs in the area.

Discussion: The development would just miss this site.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

6. Site number: 2630AB8

Location: Barneveld 16IT: S 26°05'01.3"; E 30°20'16.3"

Description: Big stone walled circle, with smaller scallops on the outside.

Discussion: This site falls well outside the line of the proposed development.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

7. Site number: 2630AB9

Location: Barneveld 16IT: S 26°03'50.0"; E 30°22'23.7"

Description: Number of stone cairns, that might be graves. However, due to the dense vegetation, it is impossible to make a definite statement

Discussion: It would be possible to reroute the pipeline around this site as it falls on the edge of the alignment.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Avoid site. If not possible, relocate graves

Legal requirements: If relocation takes place, then: notification, consultation and permits

8. Site number: 2530DC1

Location: Goedehoop 622JT: S 25°50'48.2"; E 30°44'18.4"

Description: Small stone walled settlement, consisting of a single homestead

Discussion: This site falls just outside to alignment

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

9. Site number: 2530DC2

Location: Goedehoop 622JT: S 25°50'48.2"; E 30°44'16.9"

Description: Circle of stone, approximately 5 metres in diameter

Discussion: This site falls outside the alignment

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

10. Site number: 2530DC3

Location: Goedehoop 622JT: S 25°50'48.9"; E 30°44'17.4"

Description: Stone walled circle, possibly a cattle kraal linked to the previous two sites.

Discussion: This site falls outside the proposed development.

Significance of impact: Low

Certainty of prediction: Definite

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

### 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