

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

For:

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SUMMARY

Archaeological survey of a section of the Mozambique-Secunda pipeline, Bethal and Highveld Ridge 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 two Iron Age sites must be avoided. As the proposed pipeline is passing quite close to the one site, it is recommended that an archaeologist is present when trenching takes place.
- The areas where the graves are located must 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.

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	7
10. PROJECT TEAM	8
APPENDIX 1	9
APPENDIX 2	10
APPENDIX 3	12

ARCHAEOLOGICAL SURVEY OF A SECTION OF THE SECUNDA-MOZAMBIQUE GAS PIPELINE, BETHAL AND HIGHVELD RIDGE 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)**¹¹ 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).

¹¹ 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

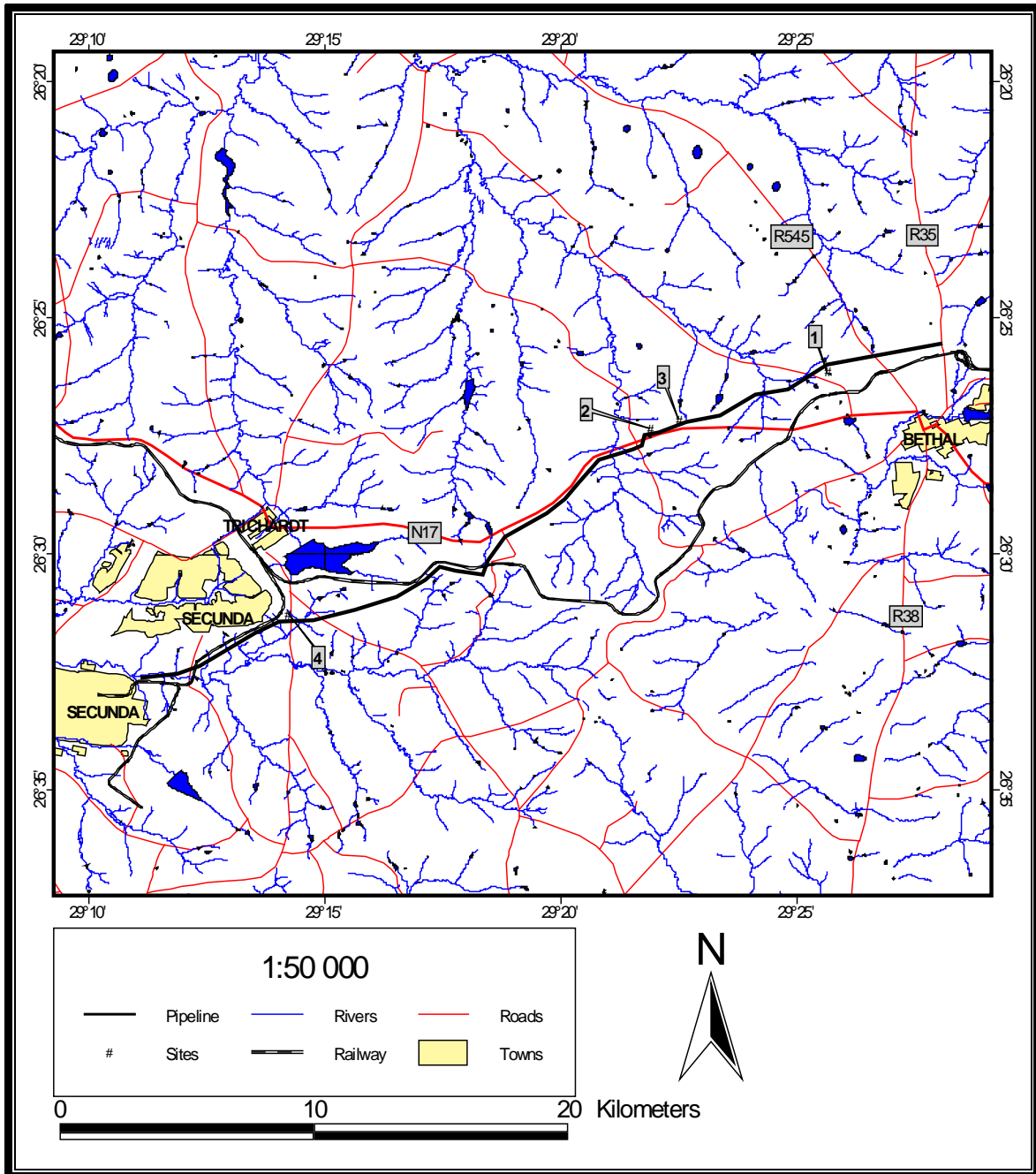


Figure 1. Section of the pipeline surveyed for this report and the location of the identified sites (numbered black dots).

The area surveyed was determined by the proposed development (see Fig. 1). It include the following farms, in the Bethal and Highveld Ridge districts of Mpumalanga: Rustfontein 109IS, Palmietfontein 110ISElandsfontein147IS, Rietfontein 146IS, Rooipoort 144IS, Grootvlei 293IS

and Goedehoop 230IS. As such it covers km. 38 to 0 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

Two Iron Age sites were identified that would be impacted on by the development. However, in both cases it was possible to adjust the alignment of the pipeline in order to bypass the sites.

An informal cemetery and a single grave were also identified. Although some of these are located close to the proposed development (see Figure 1), they would be missed and the alignment would not have to be adjusted 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 two Iron Age sites must be avoided. As the proposed pipeline is passing quite close to the one site, it is recommended that an archaeologist is present when trenching takes place.
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- 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.

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.

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 – 2629AD, 2629AC

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 RESULTS²

[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: 2629AD103

Location: Rustfontein 109IS: S 26°26'10.1"; E 29°25'39.4"

Description: Cemetery containing five graves of the Van Zyl family, some dating back to 1918.

Discussion: Although the pipeline passes close by, the cemetery is well marked and it would be easy to avoid it.

Significance of impact: Low

Certainty of prediction: Definite

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

Legal requirements:

2. Site number: 2629AD104

Location: Palmietfontein 110IS: S 26°27'23.6"; E 29°21'55.4"

Description: Stone walled site dating to the Late Iron Age

Discussion: This site is located inside the proposed pipeline route. However, on the south side of the site, between the road (N17) and the site, there is a section of ± 30-40 metres that seem to be clear and it would be possible to squeeze the pipeline through here.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Avoid by rerouting the pipeline, if not possible: 2 = controlled sampling and/or mapping of the site necessary. However, it is recommended that once trenching starts here, an archaeologist be present to monitor and document any possible features that are exposed.

Legal requirements: If avoided, no legal requirements

3. Site number: 2629AD105

Location: Palmietfontein 110IS: S 26°27'11.2"; E 29°22'31.3"

Description: A number of ash middens, probably the remains of old cattle kraals. Short sections of stone walling occur among the middens.

Discussion: Although these features are located within the borders of the proposed pipeline route, there is enough space available to reroute the pipeline around the site.

Significance of impact: High

Certainty of prediction: Definite

Recommended management action: Avoid by rerouting the pipeline, if not possible: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: If avoided, no legal requirements

4. Site number: 2629CA16

Location: Goedehoop 290IS: S 26°31'18.6"; E 29°14'13.5"

Description: Single grave marked with stone

Discussion: The pipeline would pass approximately 20 metres from this feature

Significance of impact: Low

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

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