



Archaetnos Culture & Cultural  
Resource Consultants  
BK 98 09854/23

---

**A REPORT ON HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED  
DECOMMISSIONING OF TRANSNET PIPILINES FROM DURBAN TO  
JOHANNESBURG (DJP)**

For:

***VGI Consulting (Pty) Ltd***

**REPORT NO.: AE01959V**

By:

***Prof. A.C. van Vollenhoven (L.AKAD.SA.)***  
***Accredited member of ASAPA (Accreditation number: 166)***  
***Accredited member of SASCH (Accreditation number: CH001)***  
**&**  
***Johan Smit, BA (Hons)***

***28 November 2019***

Archaetnos  
P.O. Box 55  
GROENKLOOF  
0027  
Tel: 083 291 6104  
Fax: 086 520 4173  
E-mail: antonv@archaetnos.co.za

Member: AC van Vollenhoven BA, BA (Hons), DTO, NDM, MA (Archaeology) [UP], MA (Culture History) [US], DPhil (Archaeology) [UP], Man Dip [TUT], D Phil (History) [US]

## **SUBMISSION OF REPORT**

**Please note that the South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report.**

**It is the client's responsibility to do the submission via the SAHRIS System on the SAHRA website. Arrangements can however be made if necessary.**

**Clients are advised not to proceed with any action before receiving the necessary comments from SAHRA.**

## **DISCLAIMER**

**Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites is as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Access to certain areas is also sometimes limited. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof. Any additional sites identified can be visited and assessed afterwards and the report amended, but only upon receiving an additional appointment.**

**©Copyright  
Archaetnos**

**The information contained in this report is the sole intellectual property of Archaetnos CC. It may only be used for the purposes it was commissioned for by the client.**

## EXECUTIVE SUMMARY

Archaetnos cc was appointed by Indawo Rentals (Pty) Ltd on behalf of VGI Consulting (Pty) Ltd to conduct a Heritage Impact Assessment (HIA) related to the decommissioning of Transnet pipelines from Durban to Johannesburg (DJP) and associated infrastructure. The pipeline and associated infrastructure are to be decommissioned. It thus is located in four provinces, being Gauteng, North-West, Free State and KwaZulu-Natal.

The pipeline was commissioned to supply refined petroleum product (petrol, diesel, jet fuel) to Gauteng. It is a 12 inch (328 mm) pipe and stretches from Durban to Waltloo. During the operational period, it was found that the pipeline had an inherent welding defect, which increased the risk of pipeline failure and the impact to the environment due to spillages. In 2004, after several studies, it was decided to retire this pipeline by 2012 to manage the inherent defect and the risk to the environment. On 28 March 2018, the DJP was stopped from operation as the replacement pipeline system was completed.

The client indicated the area to be surveyed. The field survey was confined to this route.

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the surveyed area.
2. Study background information on the area to be developed.
3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, and aesthetic and tourism value.
4. Describe the possible impact of the proposed project on these cultural remains, according to a standard set of conventions.
5. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed project.
6. Review applicable legislative requirements.

A survey of the available literature was undertaken in order to obtain background information regarding the area. This was followed by the field survey, which was conducted according to generally accepted HIA practices, aimed at locating all possible objects, sites and features of cultural significance in the area of the proposed development.

The heritage survey of the indicated area was completed successfully. No new sites were identified, although it is noted that some historical buildings and other sites may be found in towns along the pipeline route or in rural areas.

The following is recommended:

1. This report is seen as sufficient mitigation and the proposed decommissioning of the DJP may therefore continue.
2. It should be noted that although all points could not be visited, the entire line is deemed a low risk for containing heritage sites. This is due to the area around the line and servitude being disturbed when it was commissioned in 1965.
3. The interventions may be done in accordance with Figures 65-67.
4. It should nevertheless be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, work on site immediate cease and a qualified archaeologist be called in to investigate the occurrence.

In this regard the following 'Chance find Procedure' should be followed:

- *Upon finding any archaeological or historical material all work at the affected area must cease.*
- *The area should be demarcated in order to prevent any further work there until an investigation has been completed.*
- *An archaeologist should be contacted immediately to provide advice on the matter.*
- *Should it be a minor issue, the archaeologist will decide on future action. Depending on the nature of the find, it may include a site visit.*
- *SAHRA's APM Unit may also be notified.*
- *If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.*
- *The removal of such archaeological material will be done by the archaeologist in lieu of the approval given by SAHRA, including any conditions stipulated by the latter.*
- *Work on site will only continue after the archaeologist/ SAHRA has agreed to such a matter.*

It is also important to take cognizance that it is the client's responsibility to do the submission of this report via the SAHRIS System on the SAHRA website. No work on site may commence before receiving the necessary comments from SAHRA.

**CURRICULUM VITAE**  
*Prof. Anton Carl van Vollenhoven*

**PERSONAL INFORMATION**

- Born: 20 January 1966, Pretoria, RSA
- Address: Archaetnos, PO Box 55, Groenkloof, 0027
- Cell phone: 083 291 6104
- Nationality: RSA
- E-mail: antonv@archaetnos.co.za

**TERTIARY EDUCATION**

- BA 1986, University of Pretoria
- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
- MA Archaeology 1992, University of Pretoria
- Post-Graduate Diploma in Museology 1993 (cum laude), University of Pretoria
- Diploma Tertiary Education 1993, University of Pretoria
- DPhil Archaeology 2001, University of Pretoria.
- MA Cultural History 1998 (cum laude), University of Stellenbosch
- Management Diploma 2007 (cum laude), Tshwane University of Technology
- DPhil History 2010, University of Stellenbosch

**EMPLOYMENT HISTORY**

- *1988-1991*: Fort Klapperkop Military Museum - Researcher
- *1991-1999*: National Cultural History Museum. Work as Archaeologist, as well as Curator/Manager of Pioneer Museum (1994-1997)
- *1999-2002*: City Council of Pretoria. Work as Curator: Fort Klapperkop Heritage Site and Acting Deputy Manager Museums and Heritage.
- *2002-2007*: City of Tshwane Metropolitan Municipality. Work as Deputy Manager Museums and Heritage.
- *August 2007* – present – Managing Director for Archaetnos Archaeologists.
- *1988-2003*: Part-time lecturer in Archaeology at the University of Pretoria and a part-time lecturer on Cultural Resources Management in the Department of History at the University of Pretoria.
- *2014-2015*: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- *Since 2015*: Extraordinary Professor of History at the Mahikeng campus of the Northwest University

**OTHER**

- Has published 34 peer-reviewed and 42 popular articles.
- Has written 11 books/book contributions/conference proceedings .
- Has been the author and co-author of over 911 unpublished reports on cultural resources surveys and archaeological work.
- Has delivered more than 72 papers and lectures at national and international conferences.
- Member of SAHRA Council for 2003 – 2006.
- Member of the South African Academy for Science and Art.
- Member of Association for South African Professional Archaeologists.
- Member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014; 2018-

2020).

- Has been editor for the SA Journal of Cultural History 2002-2004.
- Editorial member of various scientific journals.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee (Chairperson 2012-2019).

A list of reports can be viewed on [www.archaetnos.co.za](http://www.archaetnos.co.za).

### DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management. The report complies with the SAHRA 2007 Minimum Standards for *Archaeological Components of Impact Assessment Reports*.

Signed:



Date: 28 November 2019

### LIST OF ACRONYMS:

AIA – Archaeological Impact Assessment  
CMP – Cultural Management Plan  
EAP – Environmental Assessment Practitioner  
EIA – Environmental Impact Assessment  
HIA – Heritage Impact Assessment  
PIA – Palaeontological Impact Assessment  
SAHRA – South African Heritage Resources Agency

**CONTENTS**

	Page
EXECUTIVE SUMMARY .....	3
CIRRICULLUM VITAE OF SPECIALIST .....	5
DECLARATION OF INDEPENDENCE.....	6
LIST OF ACRONYMS .....	6
CONTENTS.....	7
GNR 326 APPENDIX 6 TABLE .....	8
1. INTRODUCTION .....	10
2. TERMS OF REFERENCE .....	14
3. CONDITIONS AND ASSUMPTIONS .....	14
4. LEGISLATIVE REQUIREMENTS.....	16
5. THE INTERNATIONAL FINANCE CORPORATIONS’ PERFORMANCE STANDARDS FOR CULTURAL HERITAGE ..	19
6. METHODOLOGY .....	20
7. DESCRIPTION OF THE ENVIRONMENT.....	26
8. HISTORICAL CONTEXT.....	55
9. PUBLIC CONSULTATION.....	57
10.DISCUSSION OF HERITAGE RESOURCES IDENTIFIED DURING THE SURVEY .....	58
11.CONCLUSIONS AND RECOMMENDATIONS .....	58
12.REFERENCES .....	62
APPENDIX A – DEFINITION OF TERMS .....	64
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE.....	65
APPENDIX C – SIGNIFICANCE AND FIELD RATING .....	66
APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....	67
APPENDIX E – HERITAGE MANAGEMENT IMPACT	

No.	Appendix 6: GNRS Specialist Reports	Where covered in Report
	A specialist report prepared in terms of these Regulations must contain— (a) details of— (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	pp. 5-6
	(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	p. 6
	(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1 & 2
	(cA) an indication of the quality and age of base data used for the specialist report	Section 8
	(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Sections 7 & 11
	(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Title page & Section 6
	(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 6
	(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 11
	(g) an identification of any areas to be avoided, including buffers;	N/a
	(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	N/a
	(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 3
	(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment or activities;	Section 11
	(k) any mitigation measures for inclusion in the EMPr;	Section 11
	(l) any conditions for inclusion in the environmental authorisation;	Section 11
	(m) any monitoring requirements for inclusion in the EMPr or	N/a



No.	Appendix 6: GNRS Specialist Reports	Where covered in Report
	environmental authorisation;	
	(n) a reasoned opinion— (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 11
	(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/a
	(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/a
	(q) any other information requested by the competent authority.	N/a

# 1. INTRODUCTION

Archaetos cc was appointed by Indawo Rentals (Pty) Ltd on behalf of VGI Consulting (Pty) Ltd to conduct a Heritage Impact Assessment (HIA) related to the decommissioning of Transnet pipelines from Durban to Johannesburg (DJP) and associated infrastructure. The pipeline and associated infrastructure are to be decommissioned. It thus located in four provinces, being Gauteng, North-West, Free State and KwaZulu-Natal (Figure 1).

The pipeline was commissioned to supply refined petroleum product (petrol, diesel, jet fuel) to Gauteng. It is a 12 inch (328mm) pipe and stretches from Durban to Waltloo. During the operational period, it was found that the pipeline had an inherent welding defect, which increased the risk of pipeline failure and the impact to the environment due to spillages. In 2004, after several studies, it was decided to retire this pipeline by 2012 to manage the inherent defect and the risk to the environment. On 28 March 2018, the DJP was stopped from operation as the replacement pipeline system was completed.

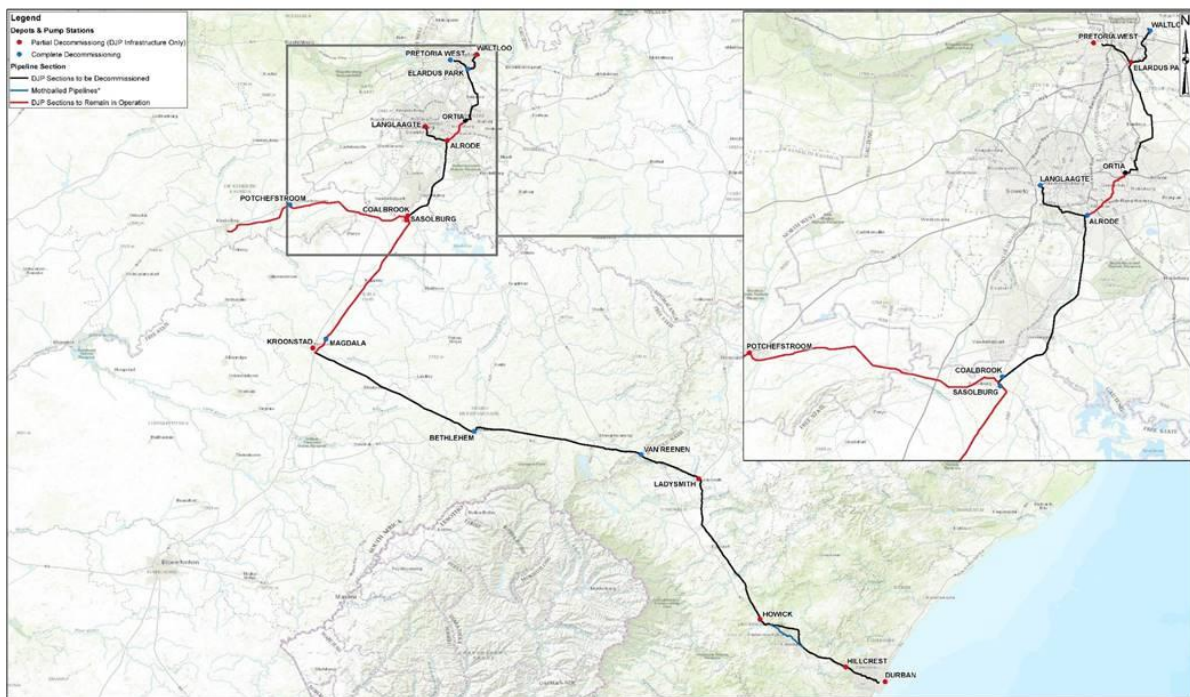
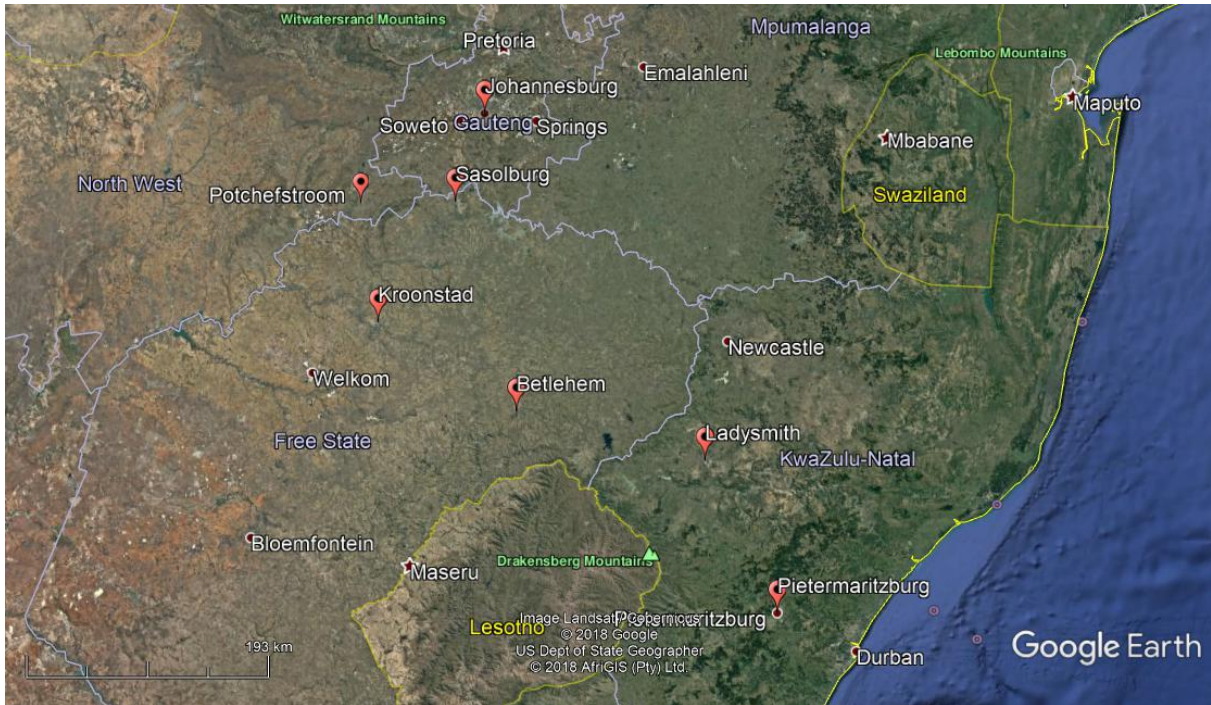


Figure 1a: Location of the project (VGI Consulting).



**Figure 1b: Map indicating the most important town on the pipeline route. North reference is to the top.**

The following infrastructure (Figure 2) is applicable-

The following depots will be fully decommissioned (demolition and dismantling):

- Van Reenen
- Bethlehem
- Magdala
- Elardus Park
- Pretoria West
- Potchefstroom

For these depots all above ground infrastructure will be demolished and removed and the sites will be rehabilitated. Above ground infrastructure include:

- Buildings
- Pumps, motors, above ground pipework, valves and associated equipment
- Spill basins and bunded areas
- Valve chambers
- Electrical and communication infrastructure
- Power and water will be tied off
- Fencing and security infrastructure

The following depots will be partly decommissioned:

- Durban
- Hillcrest
- Howick

- Ladysmith
- Kroonstad
- Langlaagte
- Alrode
- Waltloo
- Sasolburg
- Coalbrook

The following sections of the pipeline will remain:

- Kroonstad – Sasolburg
- Alrode – Airport

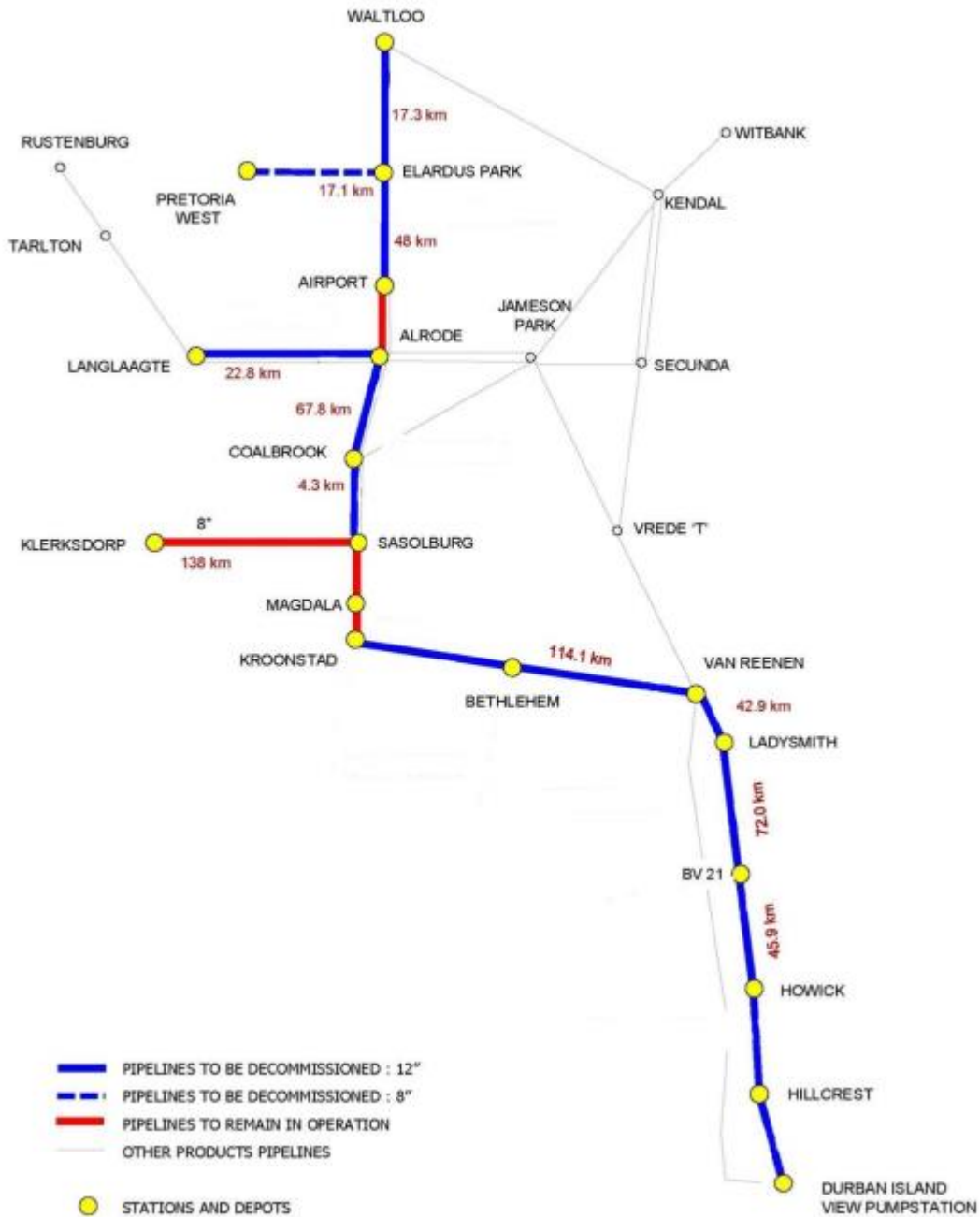
The following sections of the pipeline will be decommissioned:

- Durban – Hillcrest
- Hillcrest - Howick
- Howick – Ladysmith
- Ladysmith – Van Reenen
- Van Reenen – Bethlehem
- Bethlehem – Kroonstad
- Sasolburg – Alrode
- Airport – Waltloo
- Elardus Park – Pretoria West
- Alrode – Langlaagte

The following mothballed sections will also be decommissioned:

- Ashburton
- Pietermaritzburg old main Pipeline
- Ladysmith Dam
- Koppies
- Airport to Benoni
- Airport to Isando
- Atlas Road
- Bethlehem TOP

Feeder lines in Durban, Pietermaritzburg, Ladysmith, Bethlehem, Airport, Pretoria west and Potchefstroom will also be decommissioned.



**Figure 2: Diagram indicating the pipeline to be decommissioned (VGI Consulting).**

Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned. Sections of the pipeline and certain depots will be decommissioned. Decommissioning will take place after deactivation which would involve the displacement of product (removal of product) and cleaning (purging of pipeline with preferably an inert substance such as nitrogen). At the decommissioning phase, the pipeline is therefore classified as empty and clean.

The pipe will be left in the ground (in-situ) as this is deemed international accepted practice due to the extensive environmental impact that would occur in uplifting the pipe. The pipe will be segmented at regular intervals to limit its ability to act as a conduit. Certain sections of the pipe will also be filled with grout (i.e. at road and railway crossings) to avoid any risk of subsidence. Limited sections may be uplifted, where it inhibits development or where stakeholders require such (i.e. in road reserves). These sections will be identified in the next phase of planning.

The client indicated the area to be surveyed. The field survey was confined to this route.

## **2. TERMS OF REFERENCE**

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the surveyed area (see Appendix A).
2. Study background information on the area to be developed.
3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, and aesthetic and tourism value (see Appendix B).
4. Describe the possible impact of the proposed project on these cultural remains, according to a standard set of conventions.
5. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed project.
6. Review applicable legislative requirements.

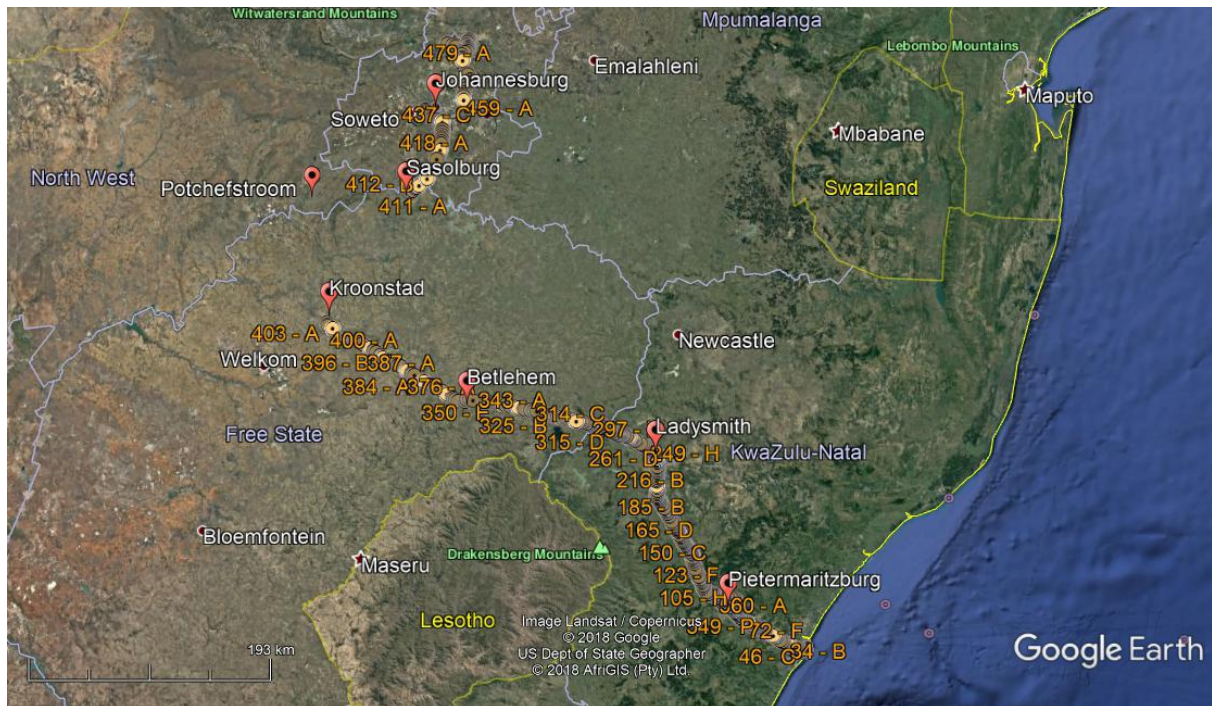
## **3. CONDITIONS & ASSUMPTIONS**

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

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artefacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The

various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. In this case it was physically impossible to visit the entire route. It also needs to be indicated that only certain sections of the entire pipeline will be decommissioned (Figure 3), and these were concentrated on.
7. Developers should however note that this report should make it clear how to handle any unexpected other finds that might occur.
8. Almost the entire surveyed route is disturbed by recent developments. This includes industrial areas and townscapes as well as roads. Even the rural areas were disturbed when the pipe was laid, and certain sections thereof has thereafter been used for agricultural purposes. Most importantly a servitude was created for the pipeline and thus disturbed during the commissioning thereof.
9. Natural vegetation is therefore limited to small sections, but actually consist of regrowth. Resultingly both the vertical as the horizontal archaeological visibility varied between good and reasonable.
10. It needs to be indicated that access could not be obtained on certain sections of the line due to the servitudes being on private property.
11. However, since the line is deemed to run in an entirely disturbed landscape it is regarded to be a low risk area for finding cultural resources. Even if the vegetation has regrown it still is on already impacted areas, due to the installation of the pipeline in 1965.



**Figure 3: Applicable sections of the pipeline to be decommissioned (Orange dots).**

#### **4. LEGISLATIVE REQUIREMENTS**

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

##### **4.1 The National Heritage Resources Act**

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate (see Appendix D) includes the following:

- a. Places, buildings, structures and equipment of cultural significance



- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. The different phases during the HIA process are described in Appendix E.

An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

The applicable subsection in this case is 'c'.

### **Structures**

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

A 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 the decoration or any other means.

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

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite;
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites, or
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

### **Human remains**

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. 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.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the **National Health Act (Act 61 of 2003)** 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 (i.e. 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 **National Health Act (Act 61 of 2003)**.

#### **4.2 The National Environmental Management Act**

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

### **5. THE INTERNATIONAL FINANCE CORPORATIONS' PERFORMANCE STANDARD FOR CULTURAL HERITAGE**

This standard recognizes the importance of cultural heritage for current and future generations. It aims to ensure that clients protect cultural heritage in the course of their project activities.

This is done by clients abiding to the law and having heritage surveys done in order to identify and protect cultural heritage resources via field studies and the documentation of such resources. These need to be done by competent professionals (e.g. archaeologists and cultural historians). Possible chance finds, encountered during the project development, also needs to be managed by not disturbing it and by having it assessed by professionals.

Impacts on the cultural heritage should be minimized. This include the possible maintenance of such sites in situ, or when impossible, the restoration of the

functionality of the cultural heritage in a different location. When cultural historical and archaeological artefacts and structures need to be removed it should be done by professionals and by abiding to the applicable legislation.

The removal of cultural heritage resources may however only be considered if there are not technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the effected communities. Again professionals should carry out the work and adhere to the best available techniques.

Consultation with affected communities should be engaged in. This entails that access to such communities should be granted to their cultural heritage if this is applicable. Compensation for the loss of cultural heritage should only be given in extra-ordinary circumstances.

Critical cultural heritage may not be impacted on. Professionals should be used to advise on the assessment and protection thereof. Utilization of cultural heritage resources should always be done in consultation with the effected communities in order to be consistent with their customs and traditions and to come to agreements with relation to possible equitable sharing of benefits from commercialization.

## **6. METHODOLOGY**

### **6.1 Survey of literature**

A survey of literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

This was however limited to broad background information on the history of the areas since detailed information on each farm is unlikely to yield any substantial information on disturbed areas. If needed, the SAHRIS information system of SAHRA can be consulted. General observations regarding heritage sites along the route will however be made.

### **6.2 Field survey**

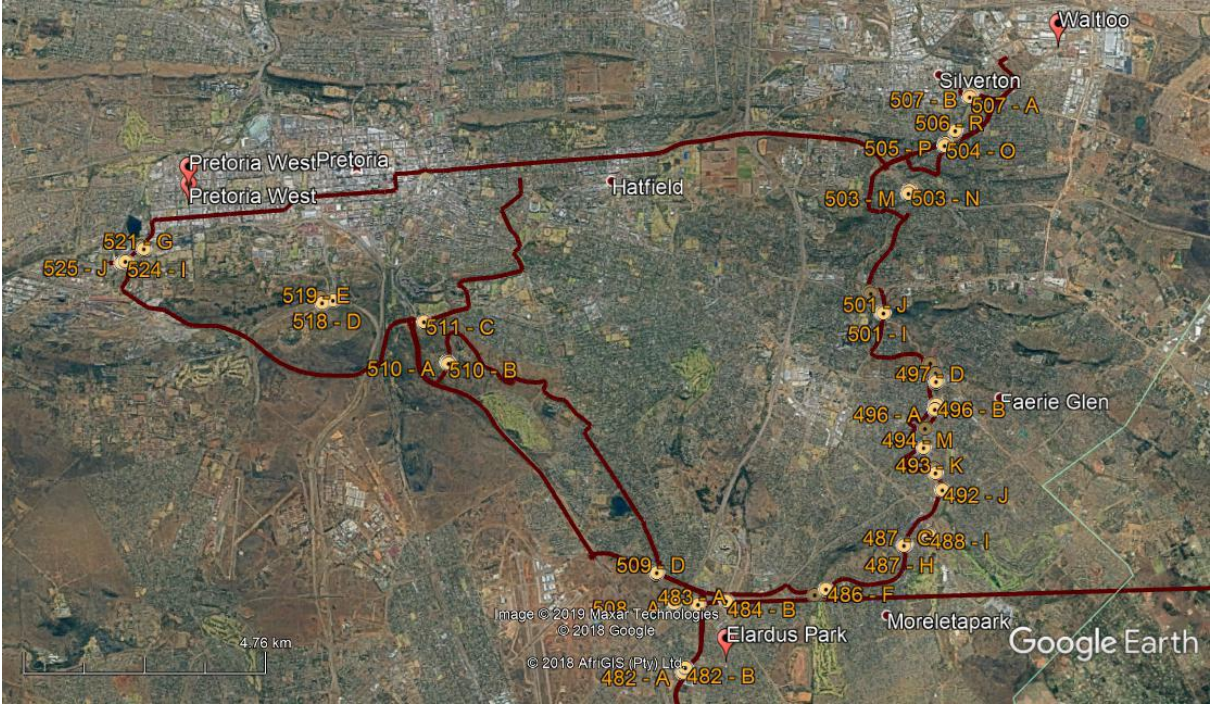
The survey was conducted according to generally accepted HIA practices and was aimed at locating possible objects, sites and features of cultural significance in the area of proposed development. Since it was a basic assessment the aim was only to get a good idea of the heritage in the area. One sometimes looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

Where required, the location/position of any site was determined by means of a Global Positioning System (GPS)<sup>1</sup>, while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle

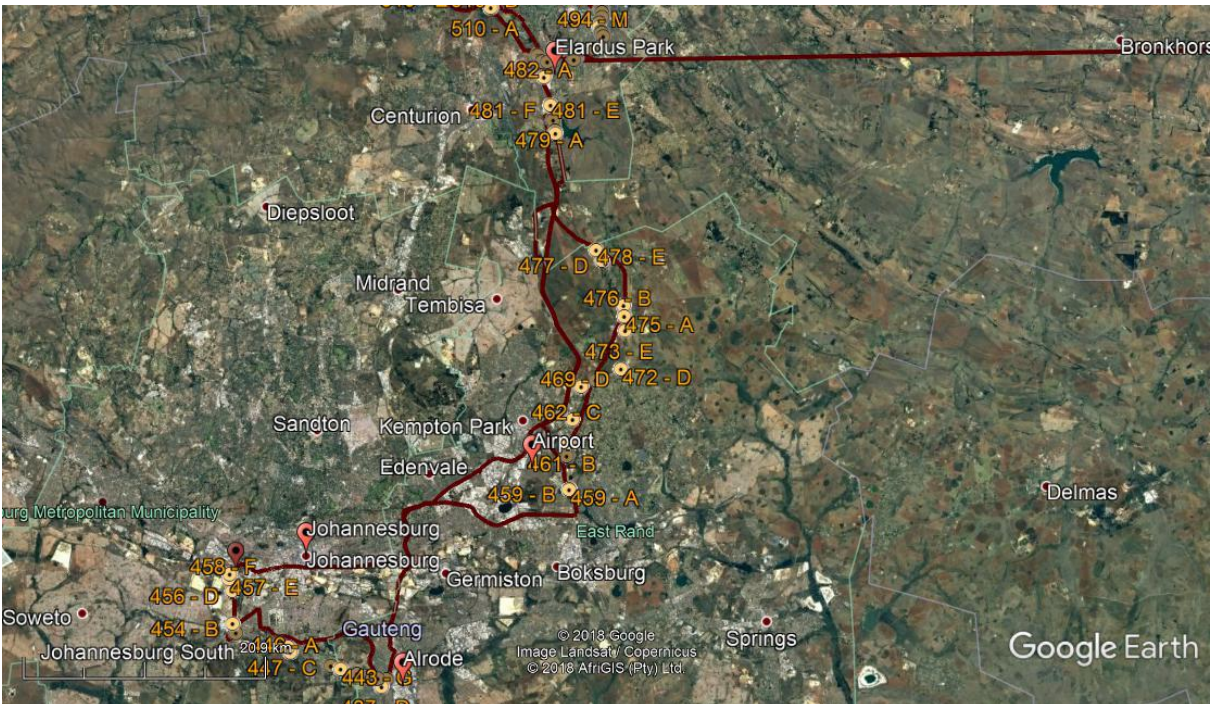
---

<sup>1</sup> A Garmin E Trex 550 with an accuracy factor of a few meters.

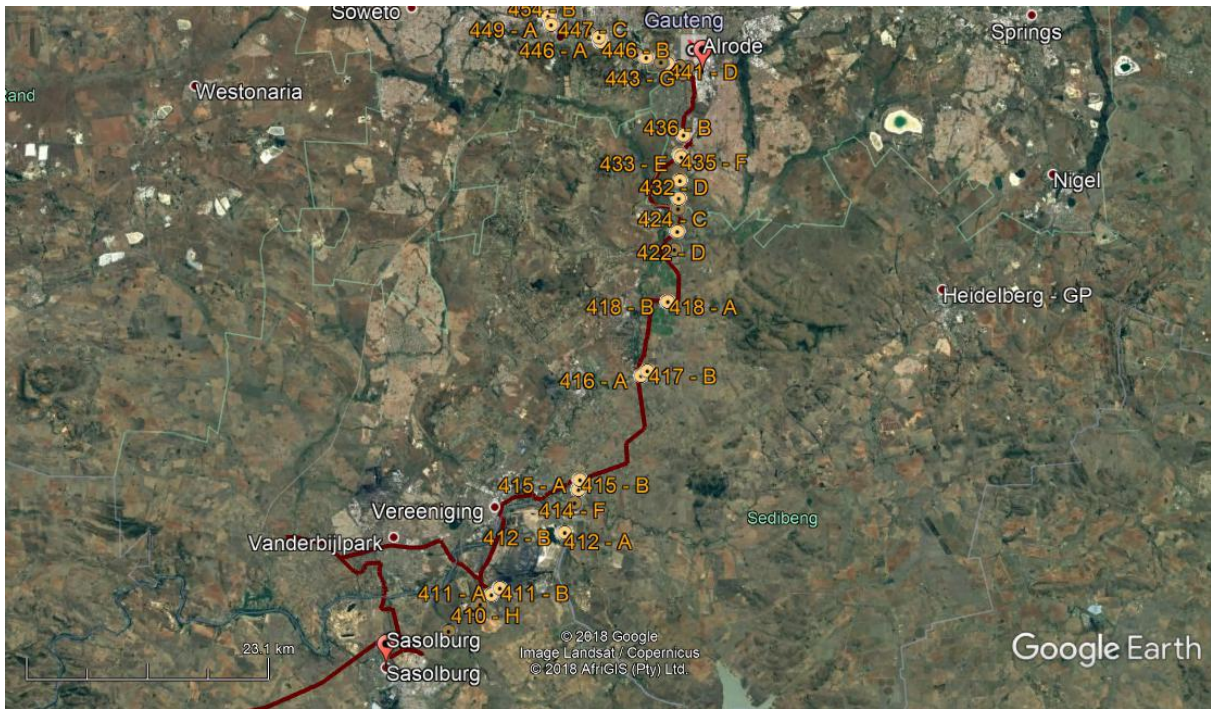
and covered as much as possible of the area to be studied (Figure 4-12). Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. The surveyed route is approximately 700 km long and the survey took about 48 hours to complete.



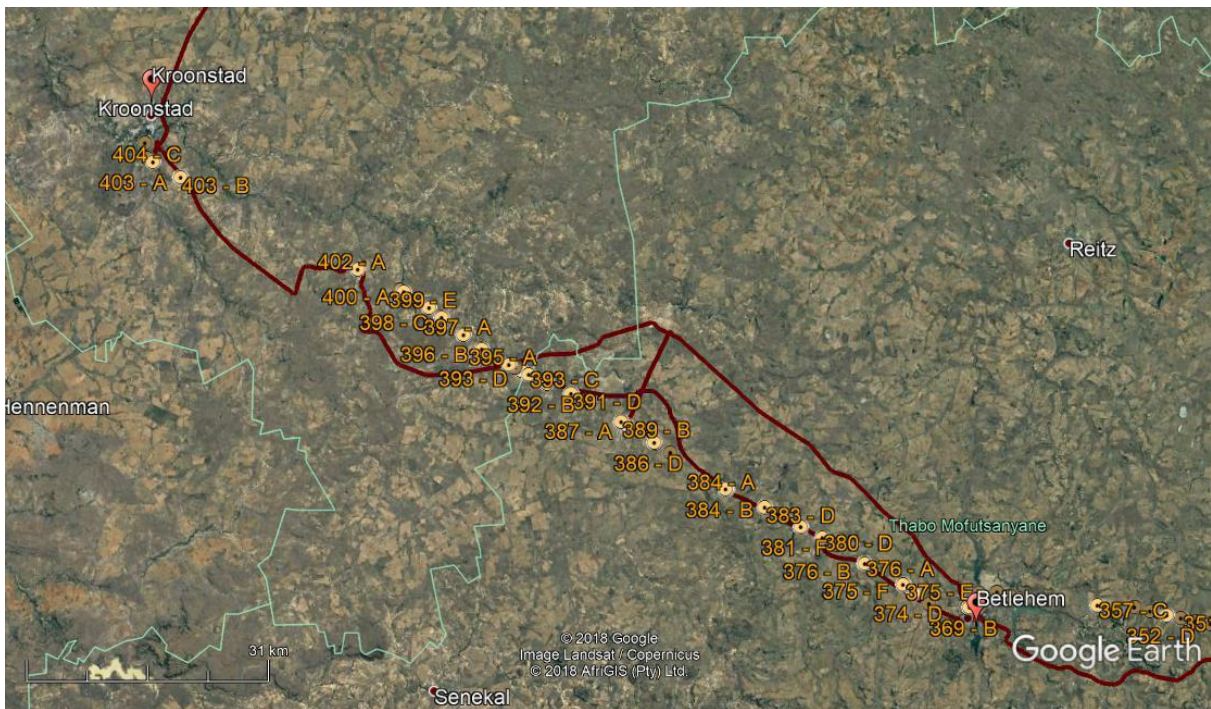
**Figure 4: GPS track of the sections of the route between Waltloo, Elardus Park and Pretoria West.**



**Figure 5: GPS track of the sections of the route between Elardus Park and the Airport (OR Tambo) as well as between Alrode and Langlaagte.**



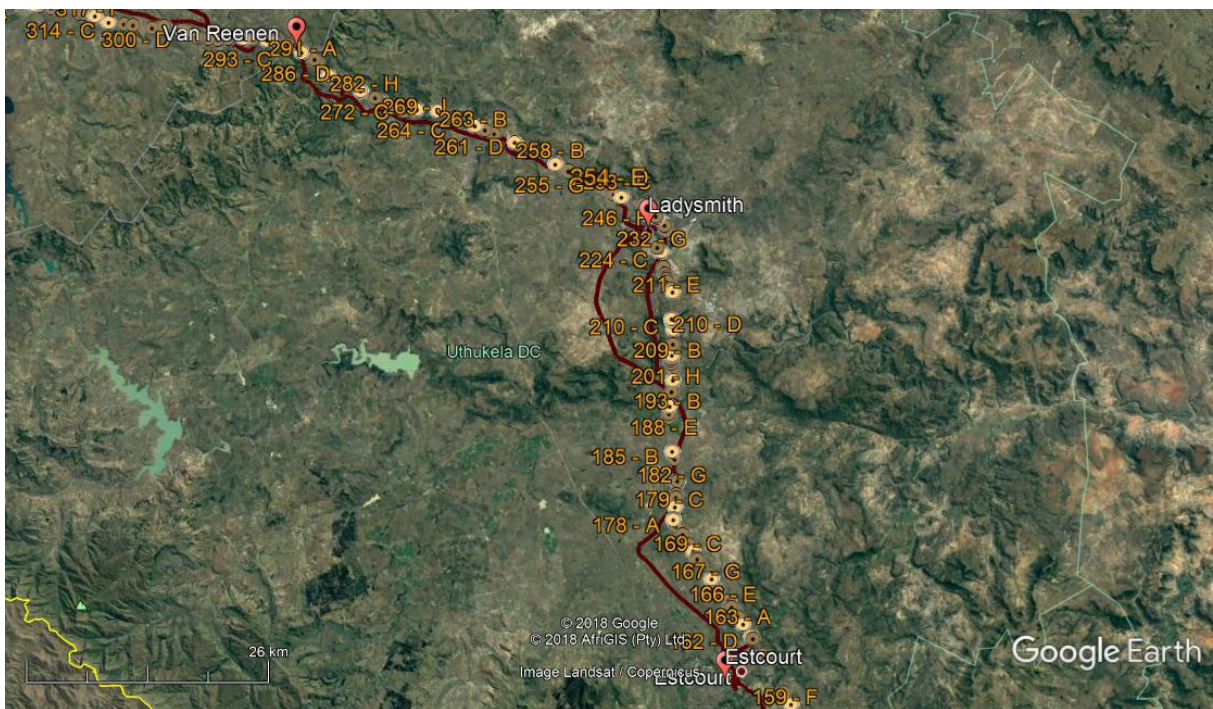
**Figure 6: GPS track of the section of the route between Alrode and Sasolburg.**



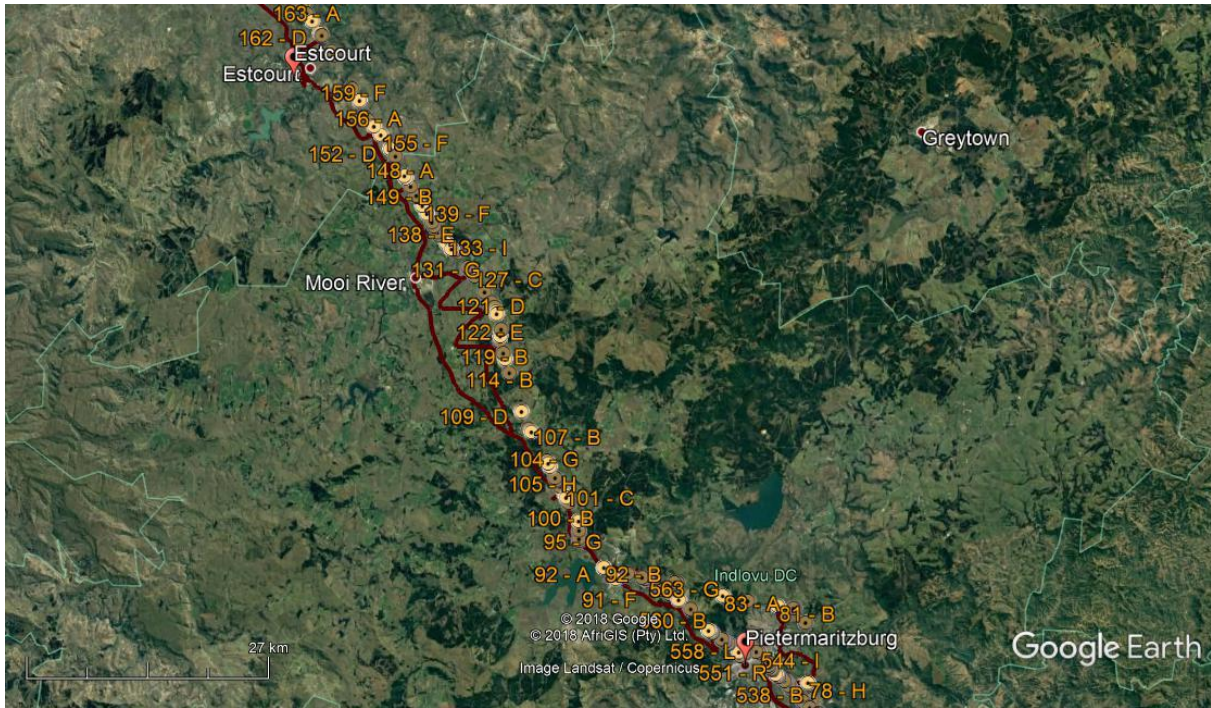
**Figure 7: GPS track of the sections of the route between Kroonstad and Bethlehem.**



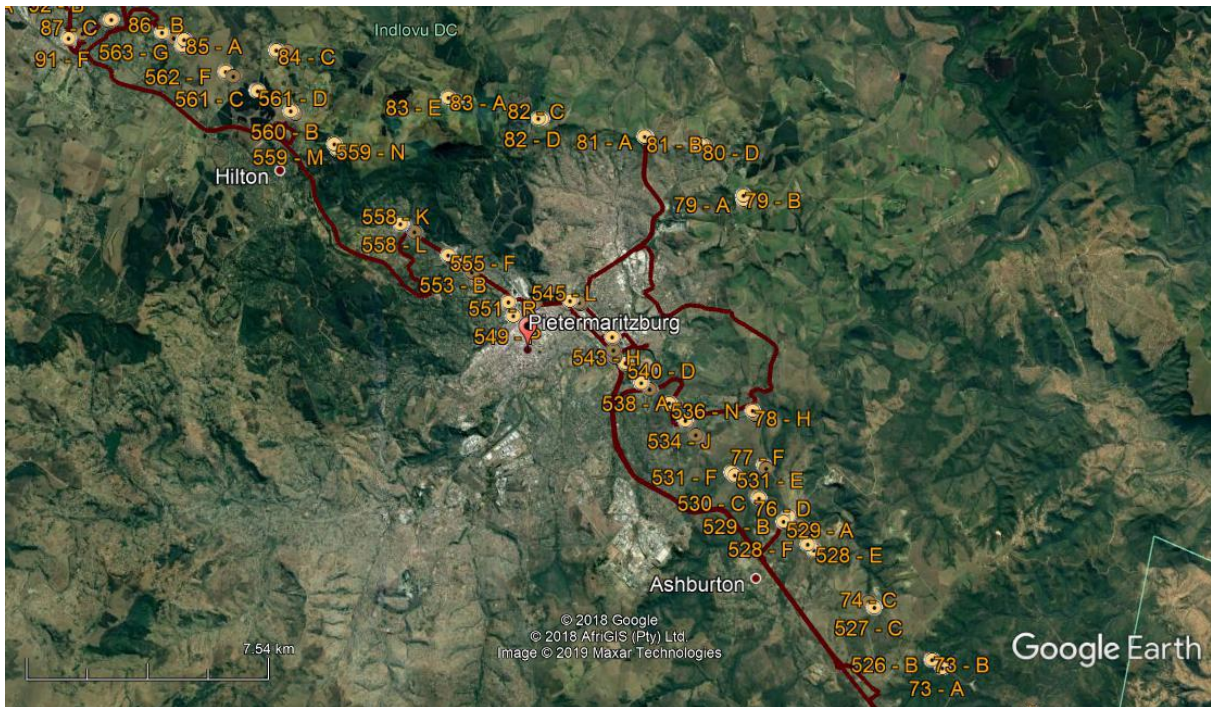
**Figure 8: GPS track of the sections of the route between Bethlehem and Van Reenen.**



**Figure 9: GPS track of the sections of the routes between Van Reenen and Estcourt.**

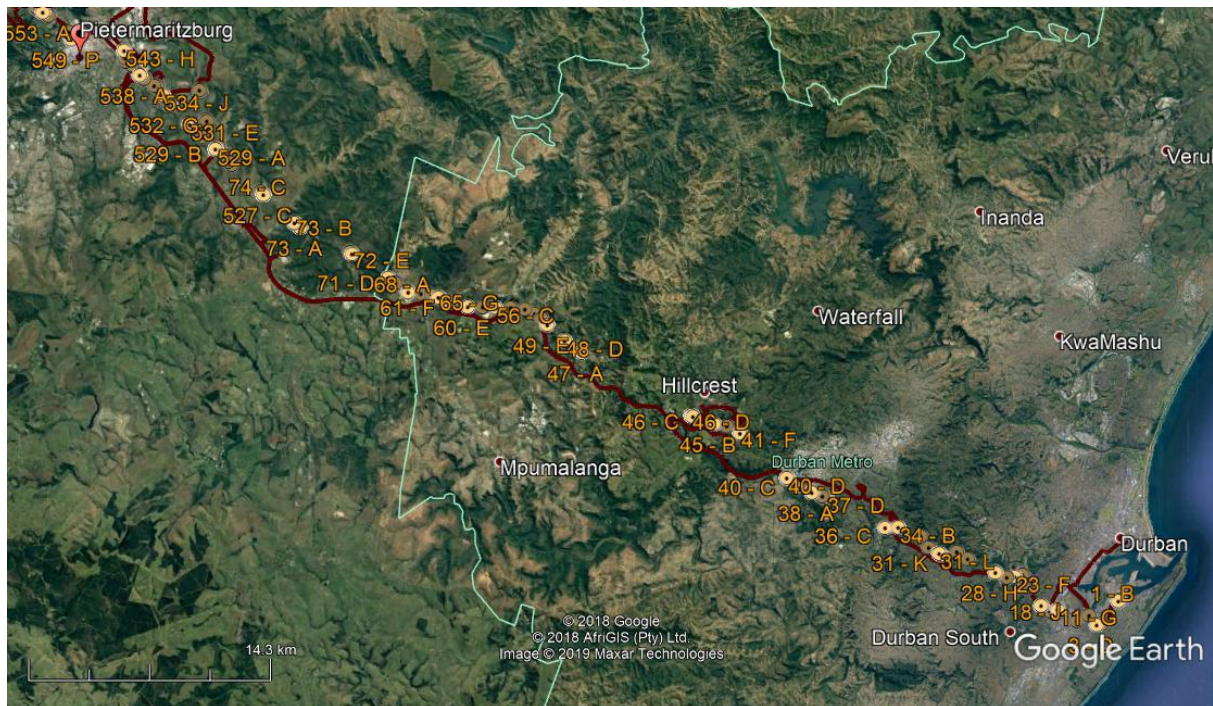


**Figure 10: GPS track of the sections of the route between Estcourt and Pietermaritzburg.**



**Figure 11: GPS track of the sections of the route at the Pietermaritzburg Bypass.**





**Figure 12: GPS track of the sections of the route between Pietermaritzburg and Durban.**

### 6.3 Oral histories

People from local communities are interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

### 6.4 Documentation

All sites, objects, features 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). The information was added to the description in order to facilitate the identification of each locality.

### 6.5 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)

- The preservation condition of the site
- Uniqueness of the site and
- Potential to answer present research questions.

## 7. DESCRIPTION OF THE ENVIRONMENT

As indicated the entire route is disturbed as it either runs through urban and industrial areas or worked agricultural fields. When this is not the case, the natural environment was disturbed in 1965 when the pipeline was commissioned as well as during subsequent work thereto. Accordingly it represents areas with a low possibility to have heritage sites. However, it always is possible that heritage features, e.g. pot shards, stone tools etc. may be unearthed during the proposed work necessary to decommission the pipeline.

The line was divided into sections, to make the discussion thereof easier. The above paragraph however is largely applicable to all these sections, which are:

- Waltloo to Elardus Park and Elardus Park to Pretoria West
- Elardus Park to the Airport and Alrode to Langlaagte
- Alrode to Sasolburg
- Kroonstad to Bethlehem
- Bethlehem to Van Reenen
- Van Reenen to Estcourt
- Estcourt to Pietermaritzburg
- Pietermaritzburg Bypass
- Pietermaritzburg to Durban

### - **Waltloo to Elardus Park and Elardus Park to Pretoria West**

Both the Elardus Park depot (Figure 13) and the Pretoria West depot (Figure 14) will be decommissioned. The Waltoo depot will remain in use (Figure 15). None of these have any buildings older than 60 years and is entirely disturbed due to its industrial nature.

On this section the pipeline runs entirely through an urban disturbed environment. However, due to the servitude the area is covered in vegetation, mostly short grass in a landscaped environment (Figure 16). Other indications of disturbance are power lines (Figure 17), landscaped river crossings (Figure 18-19) and roads (Figure 20).

The only reasonably undisturbed section of the route goes through the Klapperkop Nature Reserve (Figure 21). This reserve however used to be a wattle plantation and thus also is a disturbed area. The wattles, an alien species, are being removed and the reserve is gradually starting to obtain natural indigenous plants. The nature reserve has been surveyed in the past and the few heritage sites found here are all on other sections of the reserve than where the pipeline is located (Archaetnos database).

Fort Klapperkop is a declared Grade II site and the Voortrekker Monument a declared Grade I site. There will however be no impact on these sites as the line runs

at least 2 km from each. There will also not be any impact on any other heritage resources in the area.



**Figure 13: The Elardus Park depot. Also note the white markers indicating the position of the pipeline.**



**Figure 14: The Pretoria West depot.**



**Figure 15: The Waltloo depot.**



**Figure 16: Landscaped urban servitude.**



**Figure 17: Here the pipeline runs together with power lines.**



**Figure 18: Urban landscaped river crossing.**



**Figure 19: Another river crossing.**



**Figure 20: Road in Pretoria West along which the pipeline runs.**



**Figure 21: One of the pipeline markers in the Klapperkop Nature Reserve.**

**- Elardus Park to the Airport and Alrode to Langlaagte**

In this section the pipeline runs mostly through an urban disturbed environment. It also runs across farm land and the Rietvlei Nature Reserve. Just as was the case above, the reserve is a disturbed environment which was mainly used for agricultural purposes before. The reserve is gradually starting to obtain natural indigenous plants. The nature reserve has also been surveyed in the past and the few heritage sites found here are all on other sections of the reserve than where the pipeline is located (Archaetnos database).

Again, due to the servitude, the area is covered in vegetation, mostly short grass in a landscaped environment (Figure 22). Other indications of disturbance are power lines, mine dumps (Figure 23), landscaped river crossings (Figure 24) and gravel (Figure 25) and tar roads (Figure 26).

There will also not be any impact on any known heritage resources in this area.



**Figure 22: Landscaped urban servitude.**



**Figure 23: Here the pipeline runs together with power lines. Also note the mine dump in the background.**





**Figure 24: Urban landscaped river crossing.**



**Figure 25: Gravel road close to Rietvlei along which the pipeline runs.**



**Figure 26: Highway along which the pipeline runs.**

**- Alrode to Sasolburg**

Again the environment is very similar to the previous sections. The pipeline runs mostly through an urban disturbed environment, which includes formal and informal settlements (Figure 27 ). It also runs across open areas where a servitude was created, thus leaving a landscaped environment (Figure 28). Again, due to the servitude, the area is covered in vegetation, mostly short grass in a landscaped environment .

Other indications of disturbance are former earthwork activities (Figure 29), agricultural activities and power lines (Figure 30) and roads (Figure 31-32).

There will also not be any impact on any known heritage resources in this area.



**Figure 27: Informal settlement along the pipeline servitude.**



**Figure 28: Here the pipeline runs together with power lines in a landscaped environment.**



**Figure 29: Earthwork activities along the pipeline route.**



**Figure 30: Power lines and agricultural fields along which the pipeline runs.**



**Figure 31: Gravel road along which the pipeline runs.**



**Figure 32: Gravel road and agricultural activities along which the pipeline runs.**

**- Kroonstad to Bethlehem**

Although the environment here is more rural than in the above sections, the main characteristics are very similar. There are two urban areas, being Kroonstad and Bethlehem, which are an entirely disturbed environment, which includes roads (Figure 33) and open areas where a servitude was created, thus leaving a landscaped

environment (Figure 34). Again, due to the servitude, the area is covered in vegetation, mostly short grass in a landscaped environment .

Other indications of disturbance are agricultural activities (Figure 35). On farm land the environment mostly consists of rolling hills with vegetation of various height (Figure 36). The line also crosses a number of streams (Figure 37).

There will also not be any impact on any known heritage resources in this area.



**Figure 33: Road in Kroonstad along the pipeline servitude.**



**Figure 34: Here, in Bethlehem, the pipeline runs in a landscaped environment.**



**Figure 35: Agricultural activities close to the pipeline route.**



**Figure 36: Rolling hills between Kroonstad and Bethlehem where the pipeline runs.**



**Figure 37: Disturbed natural vegetation next to a stream which is crossed by the pipeline.**

**- Bethlehem to Van Reenen**

The environment in this section of the route is mainly rural and very similar to that of the previous section. The main characteristics of the environment is thus very similar, except for the last part where Van Reenen is situated in the Drakensberg. Here the grass is mainly short, but green, with disturbances inkling the servitude and other roads (Figure 38). These open areas where a servitude was created, left a landscaped environment.

Other indications of disturbance are agricultural fields (Figure 39), roads and other infrastructure such as telecommunication lines and railway tracks (Figure 40). On farm land the environment again mostly consists of rolling hills with vegetation of various height. In Harrismith the route has typical urban disturbed characteristics, similar to what had been described above.

There will also not be any impact on any known heritage resources in this area.





**Figure 38: Green vegetation in the Drakensberg close to Van Reenen along the pipeline servitude.**



**Figure 39: Agricultural field close to the pipeline.**



**Figure 40: Disturbed environment along the pipeline route.**

**- Van Reenen to Estcourt**

The environment in this section of the route is mainly rural, with a few small towns e.g. Ladysmith, in between. The main characteristics of the environment is typical of the KwaZulu-Natal Midlands consisting of rolling hills with vegetation cover varying from low to high (Figure 41). Towards the south the Drakensberg is situated, but the route never goes close thereto, staying at least 5 km away. In the towns the pipeline servitude runs in a typical urban disturbed landscape within open disturbed areas created by a landscaped environment.

Other indications of disturbance are formal and informal housing (Figure 42), earthwork activities (Figure 43), infrastructure such as roads and a railway line (Figure 44), and power lines (Figure 44-45).

There will also not be any impact on any known heritage resources in this area.



**Figure 41: Typical rural landscape in this section of the pipeline route.**



**Figure 42: Informal settlement along the pipeline route, close to Estcourt.**



**Figure 43: Earthwork activities along the pipeline route.**



**Figure 44: Disturbed environment along the pipeline route. Note railway line and telecommunication poles.**



**Figure 45: Note the pipeline servitude across rolling hills and adjacent to power lines.**

**- Estcourt to Pietermaritzburg**

The environment in this section of the route is mainly rural, but the final section in Pietermaritzburg, of course is urban. The same goes for sections through towns such as Howick. These areas again show broadly the same environmental characteristics than other rural areas in KwaZulu-Natal and other urban areas along the pipeline route. The environment consists of rolling hills with vegetation cover varying from low to high (Figure 46). Apart for some agricultural activities, the area also is disturbed by plantations, consisting of alien trees (Figure 47).

The Drakensberg is still situated towards the east of the route, but the route never goes close thereto, staying at least 5 km away. In the towns the pipeline servitude runs in a typical urban disturbed landscape within open disturbed areas created by a landscaped environment (Figure 48). Other indications of disturbance are formal and informal housing and infrastructure such as roads (Figure 49).

There will also not be any impact on any known heritage resources in this area.



**Figure 46: General view of the environment in this section, consisting of rolling hills. Also note the power lines.**



**Figure 47: Note the pipeline markers close to a plantation. In some instances it goes through forestry areas.**



**Figure 48: Note servitude for the pipeline and inspection chambers in a landscaped environment.**



**Figure 49: Urban setting in Howick where the pipeline is running.**

**- Pietermaritzburg Bypass**

The environment in this section of the route is mainly urban showing similar disturbances than in other areas along the route. A small section of the route here is however rural, mainly consisting of small holdings, again showing similar environmental features than in the KwaZulu-Natal Midlands. The rural environment consists of rolling hills with vegetation cover varying from low to high (Figure 50). The

area has been disturbed by agricultural activities and plantations, consisting of alien trees (Figure 51). Here and there some sections seem to show the original natural environment but is clearly disturbed by the servitude created to hold the pipeline (Figure 52).

In Pietermaritzburg the pipeline servitude runs in a typical urban disturbed landscape within open disturbed areas created by a landscaped environment including some river crossings (Figure 53). Other indications of disturbance are a golf course, through which the line runs (Figure 54), residential areas (Figure 55) and municipal infrastructure such as roads, power lines, etc. (Figure 56).

There will also not be any impact on any known heritage resources in this area.



**Figure 50: General view of the rural landscape in this section.**





**Figure 51: In certain section close to Pietermaritzburg, the pipeline runs near to or through forestry areas.**



**Figure 52: Note servitude for the pipeline running through natural vegetation. Also note power lines.**



**Figure 53: River crossing in Pietermaritzburg, where the pipeline is situated.**



**Figure 54: Golf course in Pietermaritzburg. Note the markers for the pipeline.**



**Figure 55: Example of the pipeline in a residential area in Pietermaritzburg.**



**Figure 56: Note the pipeline markers along a street in Pietermaritzburg.**

**- Pietermaritzburg to Durban**

The environment in this section of the route is a combination of urban (In Durban) and rural, showing similar disturbances than in other areas along the route. The rural environment shows indications of agricultural activities (Figure 57) and farmlands consisting of rolling hills with vegetation cover varying from low to high (Figure 58). The area as been disturbed by agricultural activities and plantations, consisting of

alien trees (Figure 59). The servitude in which the pipeline is running has clearly been disturbed by the creation of the servitude (Figure 60).

In Pietermaritzburg the pipeline servitude runs in a typical urban disturbed landscape within open disturbed areas created by a landscaped environment. Signs of disturbance include roads and residential areas (Figure 61), as well as other infrastructure such as power lines, railway lines, etc. (Figure 62). The line ends (starts) at the Durban harbour, again in an entirely disturbed landscape (Figure 63-64).

There will also not be any impact on any known heritage resources in this area.



**Figure 57: Sugar cane plantation along which the pipeline runs.**



**Figure 58: Typical rural setting along this section of the pipeline.**



**Figure 59: Note the pipeline running across the mountain and through a forestry area.**



**Figure 60: Note servitude for the pipeline.**



**Figure 61: Example of the pipeline adjacent to a road close to a residential suburb.**



**Figure 62: Railway line close to the pipeline.**



**Figure 63: The pipeline in the Durban harbor area.**



**Figure 64: Starting point of the pipeline at the Durban harbour.**

## **8. HISTORICAL CONTEXT**

It was indicated earlier that since the pipeline runs over a very large distance, it would not make sense to give a specific historical background of the surveyed area, which in fact becomes different areas divided into specific provinces and biomes, each which would undoubtedly have influenced human history. However, it also needs to be emphasized that almost the entire surveyed route is disturbed by recent

developments. Apart from the obvious urban developments and industrial areas and townscapes, even the rural areas were disturbed by various activities as indicated above. The commissioning of the initial pipeline and creating a servitude for it, in essence was a disturbance.

Thus, since the line is deemed to run in an entirely disturbed landscape it is regarded to be a low risk area for finding cultural resources. Even if the vegetation has regrown it still is on already impacted areas, due to the installation of the pipeline in 1965. Accordingly, providing detailed historical information on possible biomes would be ineffective, as what is true of one area, may not be true of another.

There is nevertheless certain broad information on the history of South Africa that will be provided in order to assist in understanding human development and culture as a whole. This will also assist in obtaining broad issues to be considered when ground breaking activities, necessary for the decommissioning of the pipeline, is implemented.

### **8.1 Stone Age**

The oldest phase of human occupation of the land is called the Stone Age. It is the period in human history when lithic material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is, however, important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

- Early Stone Age (ESA) 2 million – 150 000 years ago;
- Middle Stone Age (MSA) 150 000 – 30 000 years ago; and
- Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

Stone Age sites and material can almost be found anywhere, but important sites are usually limited to natural shelters (e.g. caves) caves in mountainous areas. In order for such a site to be deemed important high stone tool ratio per m<sup>2</sup> is needed as this indicates occupation over larger periods of time, rather than being a site used infrequently or being an isolated (and perhaps decontextualized) find.

Stone Age people were hunter-gatherers and thus stone tools can be found almost anywhere. It is definitely possible that Stone Age material could be unearthed during decommissioning activities.

### **8.2 Iron Age**

The second phase of human occupation in Southern Africa is called the Iron Age. This is the name given to the period of human history when metal was mainly used to produce metal artefacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

- Early Iron Age (EIA) 200 – 1000 A.D; and



- Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however, indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

- Early Iron Age (EIA) 250 – 900 A.D.;
- Middle Iron Age (MIA) 900 – 1300 A.D.; and
- Late Iron Age (LIA) 1300 – 1840 A.D.

Iron Age people were farmers who either herded livestock or were involved in agricultural activities. Sites will therefore be limited to areas with grazing or agricultural prospects. The Iron Age people made ceramic pottery, and this is perhaps the most distinctive attribute of this time. During the Late Iron Age people built large stone settlements, consisting of houses, livestock enclosures, grain storage areas etc. Again, finding a few decontextualized artefacts would not be important.

Although it definitely is possible that Iron Age material could be unearthed during decommissioning activities (especially ceramics and perhaps bone material), chances are that these will be decontextualized and already disturbed during the commissioning of the pipeline.

### **8.3 Historical Age**

The historical age began with the first recorded oral histories in any given area. It includes the moving into the area of people that were literate. This era is often referred to as the Colonial era or the recent past, but oral histories of Late Iron Age communities is also included.

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore, much more cultural heritage resources from this era have been left on the landscape. These could include graves, houses and associated infrastructure as well as buildings. It is important to note that all cultural resources older than 60 years are potentially regarded as part of the heritage and that detailed studies are required in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

Regarding the pipeline and its infrastructure, it can be stated that the Durban to Johannesburg Pipeline was established in 1965. It therefore is less than 60 years of age, meaning that it is not yet protected by the Act. None of the buildings associated with it (e.g. at the different depots) are thus older than 60 years of age.

Although possible, it is improbable that any remains older than 60 years have survived along the pipeline route.

## **9. PUBLIC CONSULTATION**

The application forms part of a Basic Assessment process. Public consultation is handled by the Environmental Impact Assessment Practitioner, namely Hydro Science, who can be contacted via Paulette Jacobs via e-mail at: [paulette@hydroscience.co.za](mailto:paulette@hydroscience.co.za)

## **10. DISCUSSION OF HERITAGE RESOURCES IDENTIFIED DURING THE SURVEY**

No sites were identified.

## **11. CONCLUSION AND RECOMMENDATIONS**

The heritage survey of the indicated area was completed successfully. No new sites were identified, although it is noted that some historical buildings and other sites may be found in towns along the pipeline route or in rural areas.

Typical interventions for the project are indicated in Figures 65-67. These will have minimal impact as far as heritage resources are concerned.

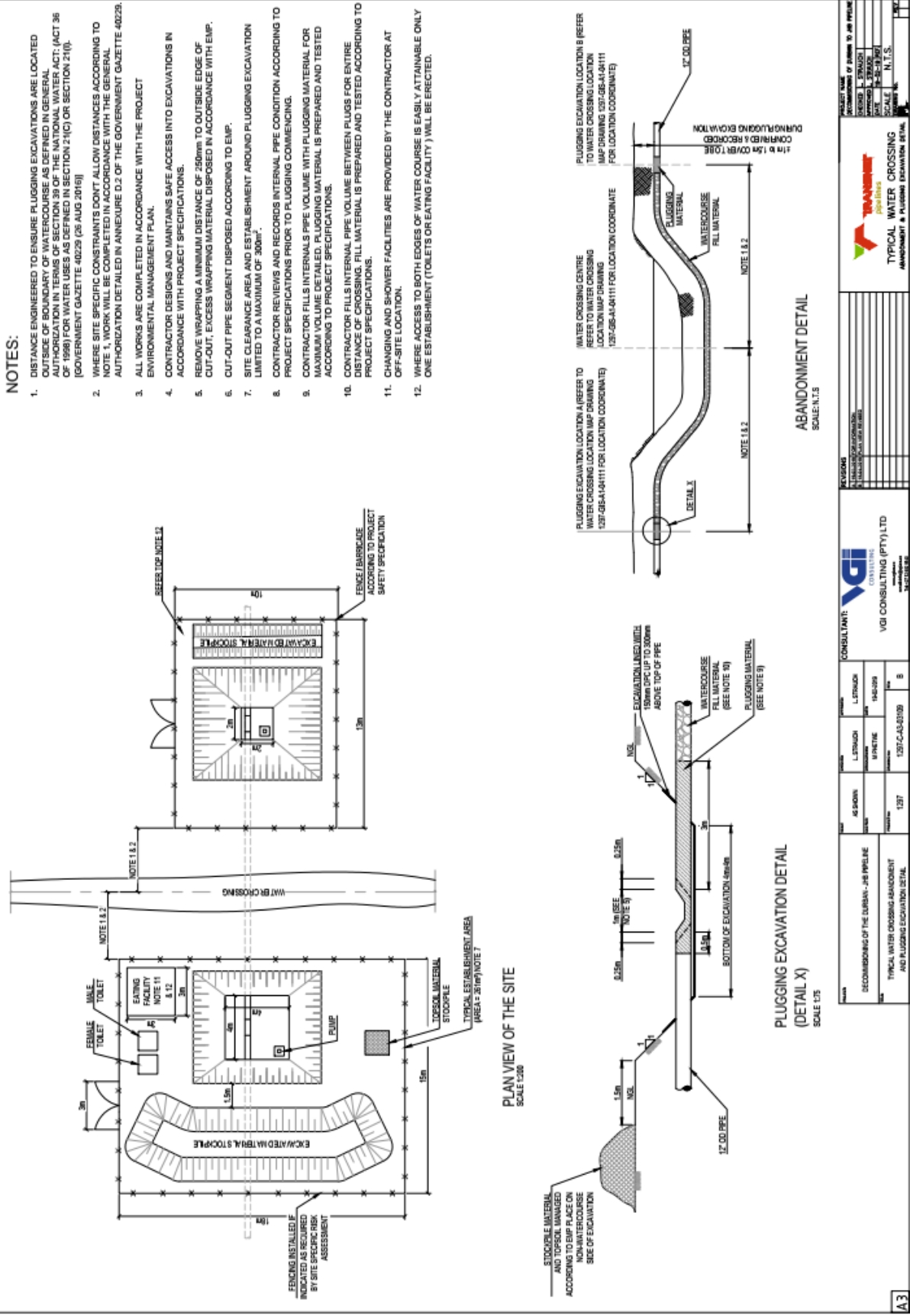


Figure 65: Proposed plugging of pipeline (VGI Consulting).

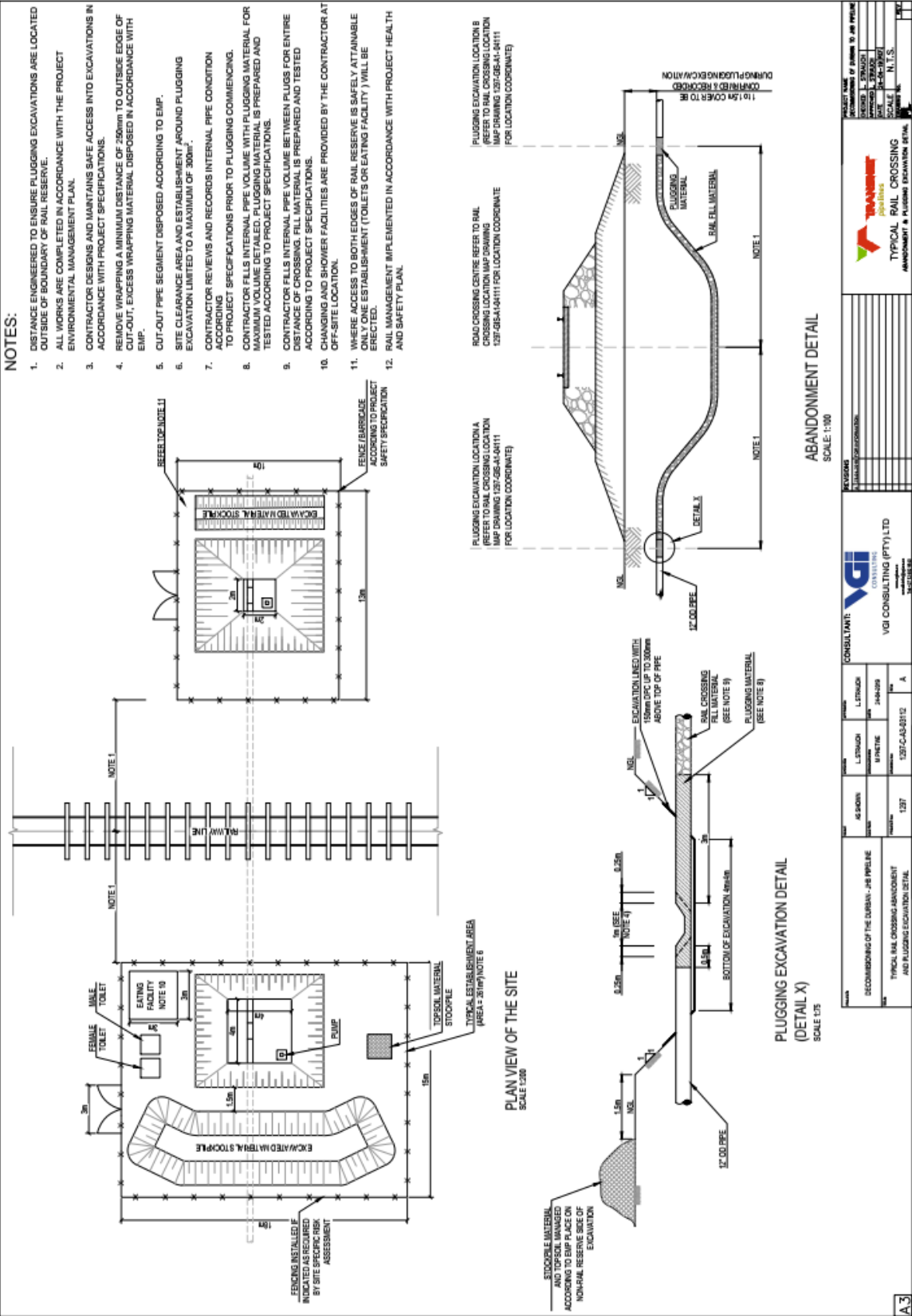


Figure 66: Typical road crossing (VGI Consulting).

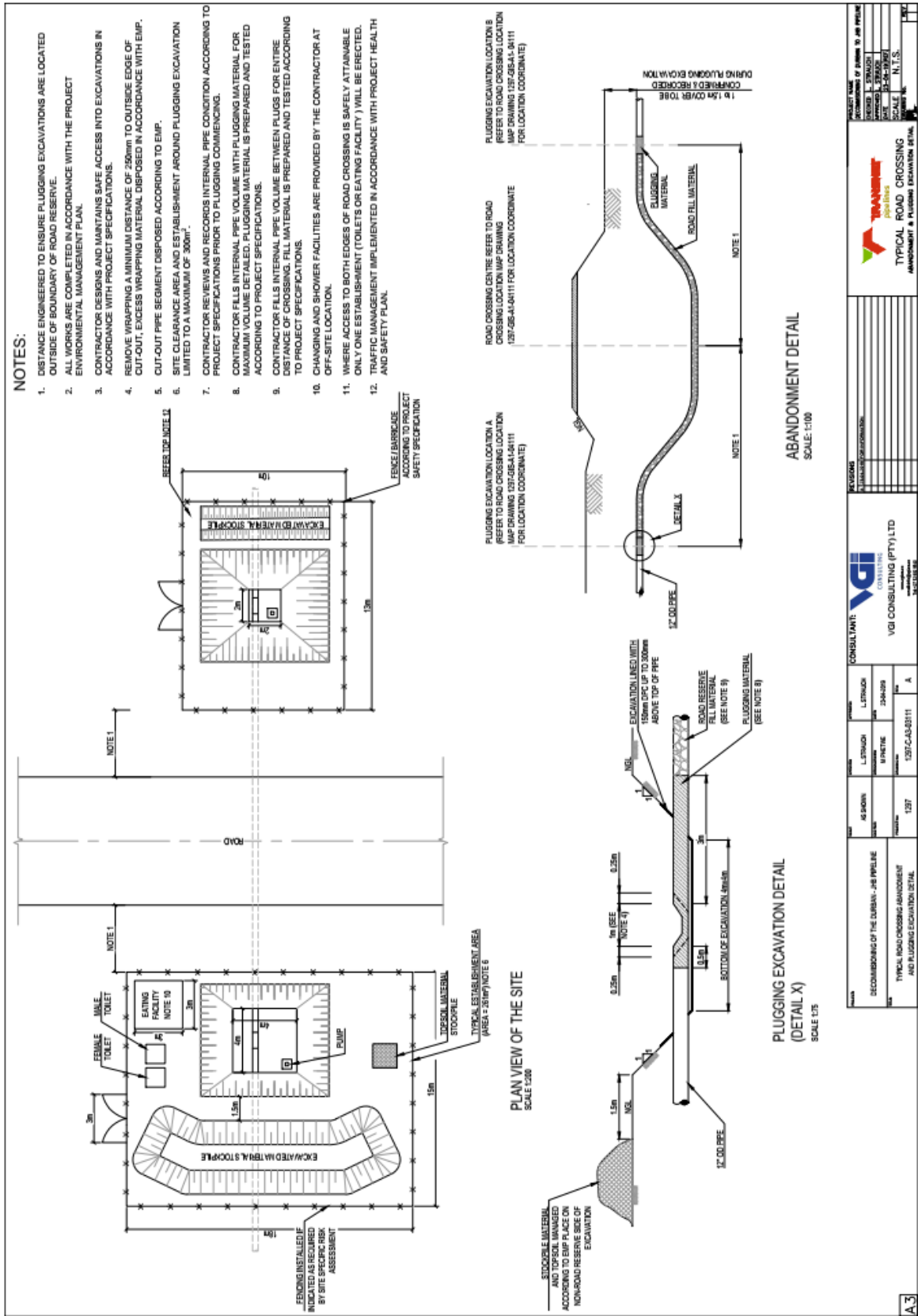


Figure 67: Typical river crossing (VGI Consulting).

The following is recommended:

1. This report is seen as sufficient mitigation and the proposed decommissioning of the DJP may therefore continue.
2. It should be noted that although all points could not be visited, the entire line is deemed a low risk for containing heritage sites. This is due to the area around the line and servitude being disturbed when it was commissioned in 1965.
3. The interventions may be done in accordance with Figures 65-67.
4. It should nevertheless be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, work on site immediate cease and a qualified archaeologist be called in to investigate the occurrence.

In this regard the following 'Chance find Procedure' should be followed:

- *Upon finding any archaeological or historical material all work at the affected area must cease.*
- *The area should be demarcated in order to prevent any further work there until an investigation has been completed.*
- *An archaeologist should be contacted immediately to provide advice on the matter.*
- *Should it be a minor issue, the archaeologist will decide on future action. Depending on the nature of the find, it may include a site visit.*
- *SAHRA's APM Unit may also be notified.*
- *If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.*
- *The removal of such archaeological material will be done by the archaeologist in lieu of the approval given by SAHRA, including any conditions stipulated by the latter.*
- *Work on site will only continue after the archaeologist/ SAHRA has agreed to such a matter.*

## 12. REFERENCES

Archaetnos database.

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Coertze, P.J. & Coertze, R.D. 1996. **Verklarende vakwoordeboek vir Antropologie en Argeologie.** Pretoria: R.D. Coertze.

- Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa**. Scottsville: University of KwaZulu-Natal Press.
- International Finance Corporation. 2012. **Overview of performance standards on Environmental and Social Sustainability. Performance Standard 8, Cultural Heritage**. World Bank Group.
- Knudson, S.J. 1978. **Culture in retrospect**. Chicago: Rand McNally College Publishing Company.
- Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies**. Pretoria: J.L. van Schaik.
- Republic of South Africa. 1980. **Ordinance on Excavations** (Ordinance no. 12 of 1980). The Government Printer: Pretoria.
- Republic of South Africa. 2003. **National Health Act** (Act 61 of 2003). The Government Printer: Pretoria.
- Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.
- Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.
- SAHRA database.
- Van der Ryst, M.M. & Meyer, A. 1999. Die Ystertydperk. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies**. Pretoria: J.L. van Schaik.

## **APPENDIX A**

### **DEFINITION OF TERMS:**

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artefacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artefact (cultural object).

(Also see Knudson 1978: 20).



## **APPENDIX B**

### **DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:**

- Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
- Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
- Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.
- Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

## APPENDIX C

### SIGNIFICANCE AND FIELD RATING:

#### Cultural significance:

- Low            A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium        Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High            Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

#### Heritage significance:

- Grade I        Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II        Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III        Other heritage resources of local importance and therefore worthy of conservation

#### Field ratings:

National Grade I significance	should be managed as part of the national estate
Provincial Grade II significance	should be managed as part of the provincial estate
Local Grade IIIA	should be included in the heritage register and not be mitigated (high significance)
General protection A (IV A)	site should be mitigated before destruction (high/medium significance)
General protection B (IV B)	site should be recorded before destruction (medium significance)
General protection C (IV C)	phase 1 is seen as sufficient recording and it may be demolished (low significance)

## **APPENDIX D**

### **PROTECTION OF HERITAGE RESOURCES:**

#### **Formal protection:**

National heritage sites and Provincial heritage sites – grade I and II

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

#### **General protection:**

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

## **APPENDIX E**

### **HERITAGE IMPACT ASSESSMENT PHASES**

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.