Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED SETLABOSHA PROJECT, CLOSE TO STANDERTON, MPUMALANGA PROVINCE

For:

SRK
PO Box 55291
Northlands
2116

REPORT NO.: AE01618V

By:

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18 March 2016

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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.

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 are as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

Should it be necessary to visit a site again as a result of the above mentioned, an additional appointment is required.

Reasonable editing of the report will be done upon request by the client if received within 60 days of the report date. However editing will only be done once and clients are therefore requested to send all possible changes in one request. Any format changes or changes requested due to insufficient or faulty information provided to Archaetnos on appointment, will only be done by additional appointment.

Any changes to the scope of a project will require an additional appointment.

CURRICULUM VITAE OF SPECIALIST: PROF ANTON CARL VAN VOLLENHOVEN

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*: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- *2015*: Appointed extraordinary professor in history at the Mahikeng Campus of the Northwest University

Other

- Published 75 articles in scientific and popular journals on archaeology and history.
- Author and co-author of over 580 unpublished reports on cultural resources surveys and archaeological work. A list of reports can be viewed on www.archaetnos.co.za
- Published a book on the Military Fortifications of Pretoria.
- Contributed to a book on Mapungubwe.
- Delivered more than 50 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.
- Accredited professional member of Association for South African Professional Archaeologists.
- Accredited professional member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee

(Chairperson 2012-2019).
ASAPA Accreditation number: 166 SASCH Accreditation number: CH001

DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management.

Signed:  Date: 18 March 2016

EXECUTIVE SUMMARY

Archaetnos cc was requested by SRK Consulting to conduct a cultural heritage impact assessment (HIA) for the proposed Setlabosha Project. The project runs over various farms close to the town of Standerton in the Mpumalanga Province. The HIA is done as part of the Environmental Authorisation Process for the project and will follow a Scoping and Environmental Impact Report.

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 on the property.

2. Document the found cultural heritage sites according to best practice standards for heritage related studies.

3. Study background information on the area to be developed.

4. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.

5. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

6. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

7. Review applicable legislative requirements.

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. The first of these are the National Heritage Resources Act (Act 25 of 1999) which deals with the cultural heritage of the Republic of South Africa. The second is the National Environmental Management Act (Act 107 of 1998) which inter alia deals with cultural heritage as part of the Environmental Impact Assessment process.

The methodology for the study includes a survey of literature and a field survey. The latter was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied. Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage.

All sites, objects features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates 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.

The evaluation of heritage sites is done by giving a field rating of each 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.

The area that was surveyed is located on the Mpumalanga Highveld and shows typical Highveld characteristics, including farming practices. The natural environment consists mainly of grassland with isolated trees. Many signs of the environment being disturbed by recent human activities are present. Pioneer species such as grass and weeds are found throughout the surveyed area. The main disturbance however, comes from agricultural activities, in this case maize and soya bean fields.

The following is recommended:

- Three grave yards were found, all being regarded as being of high cultural significance.

- Since none of these were identified close to the proposed conveyor route A, it is recommended that this route be used.

- Should it not be possible, meaning that route option B is used, the following is recommended, there would be two options to deal with the graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation. A buffer zone of 20 m is recommended.

- The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

- Nothing of heritage importance was identified at any of the proposed shaft positions or the mine complex. Therefore the proposed development may continue here on any of these options.

- The proposed development may continue, within the parameters set out by these recommendations.

- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

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1. INTRODUCTION

Archaetnos cc was requested by SRK Consulting to conduct a cultural heritage impact assessment (HIA) for the proposed Setlabosha Project. The project runs over various farms close to the town of Standerton in the Mpumalanga Province. The project is located approximately 15 km north-west of Standerton (Figure 1-4).

The HIA is done as part of the Environmental Authorisation Process for the project and will follow a Scoping and Environmental Impact Report. The project proposes to develop the following infrastructure:

- Two shaft complexes, namely East and West shafts
- Overburden stockpile, pollution control dams, silo, ablution facilities, sewage treatment plant, access roads other surface infrastructure at the shafts
- An office complex
- An overland conveyor

The client indicated the areas to be surveyed and the survey was confined to these. It was done via foot and via off-road vehicle.

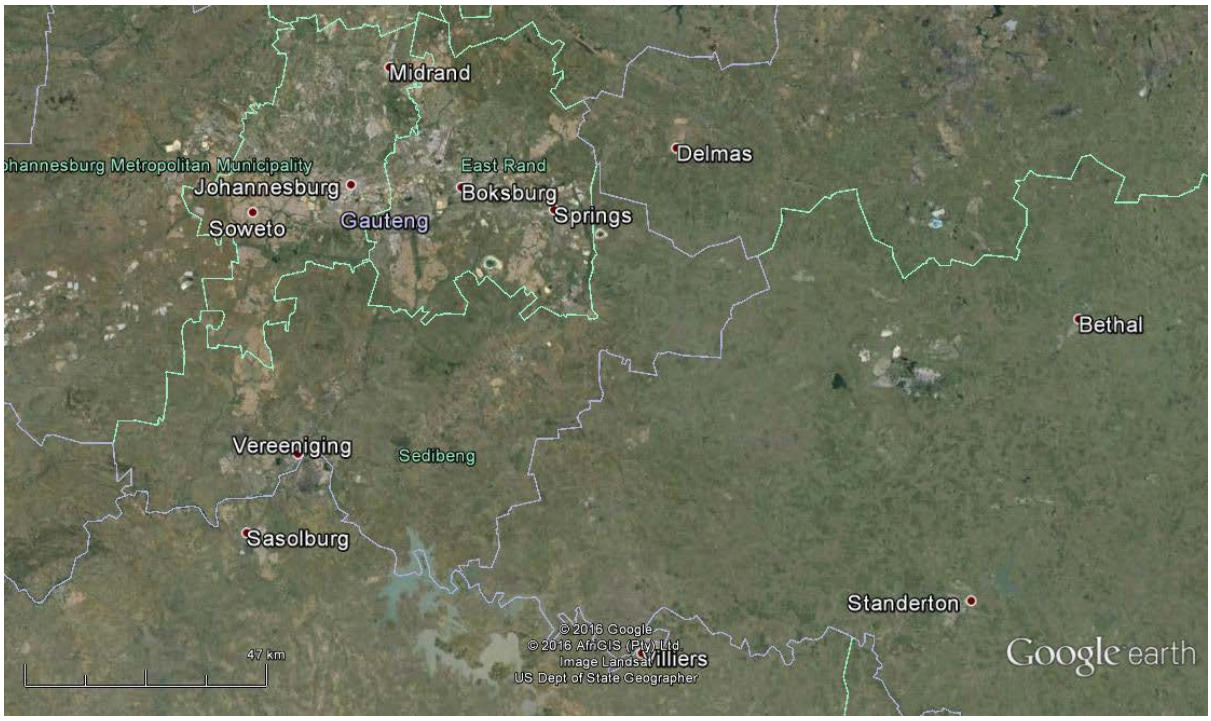

Figure 1: Location of Standerton in the Mpumalanga Province. North reference is to the top.

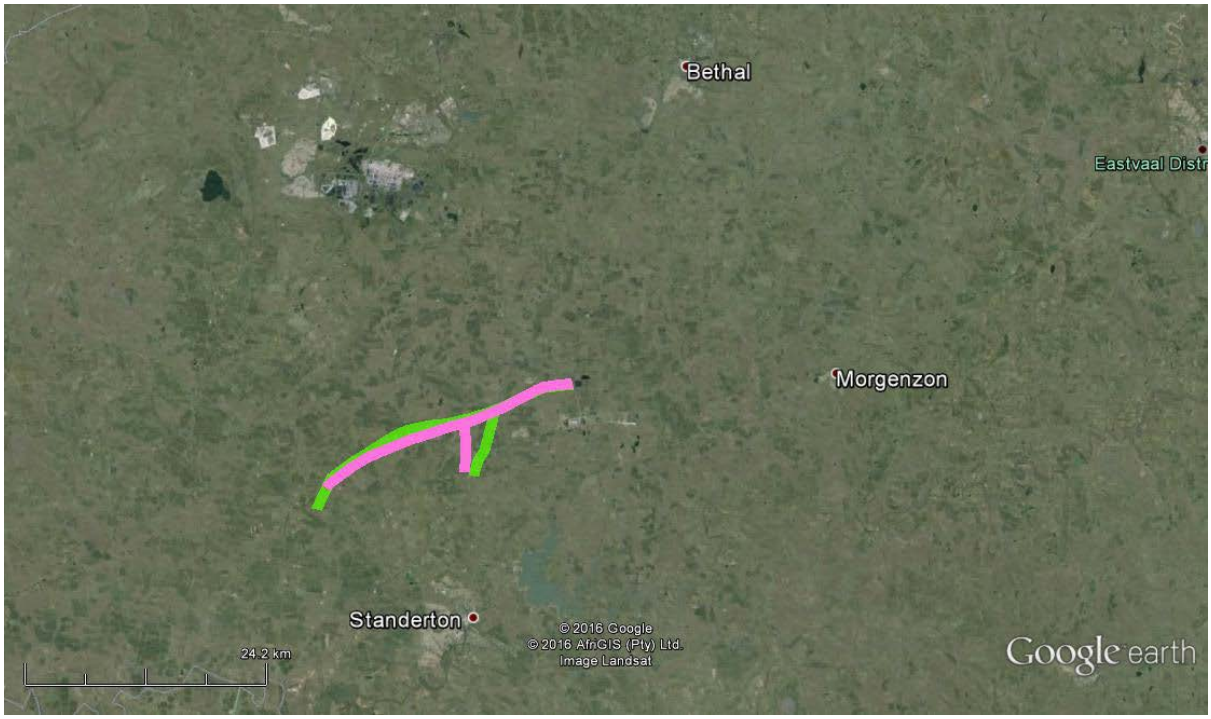

Figure 2: Location of the project in association to Standerton. North reference is to the top. The green line is option A for the proposed conveyor and the pink one option B.

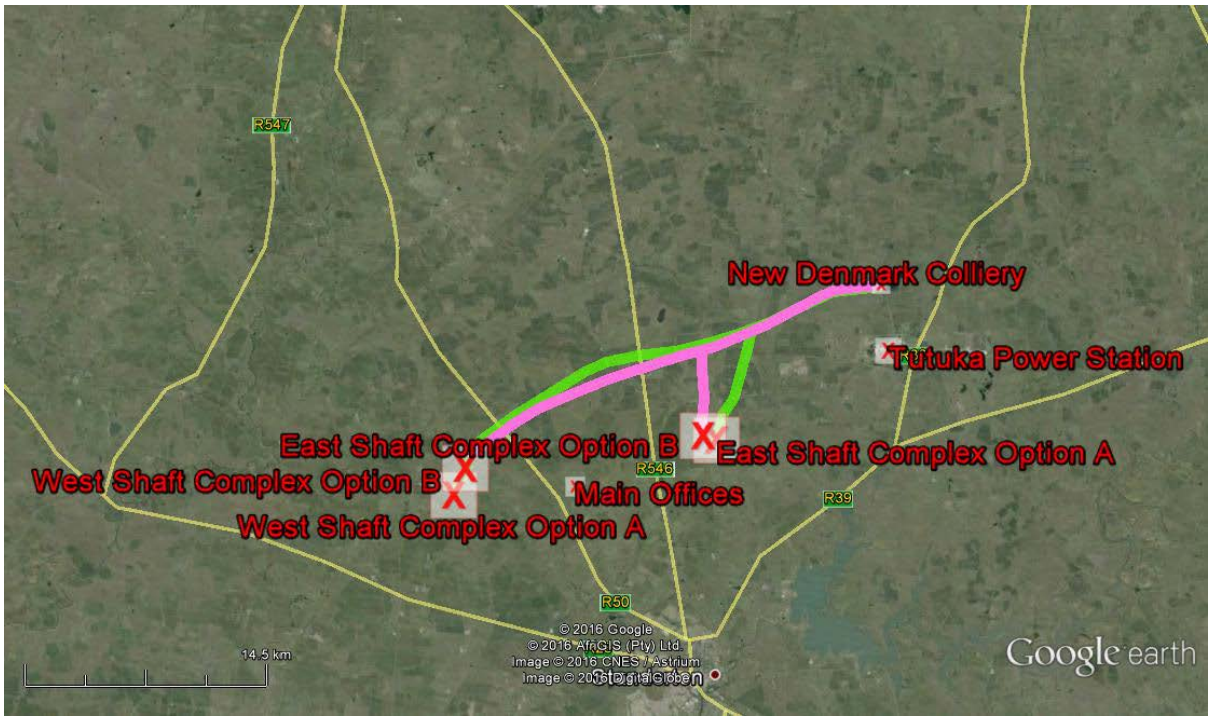

Figure 3: Proposed layout to the project. Note that two options for the East and West shaft as well as the conveyor are being investigated. North reference is to the top.

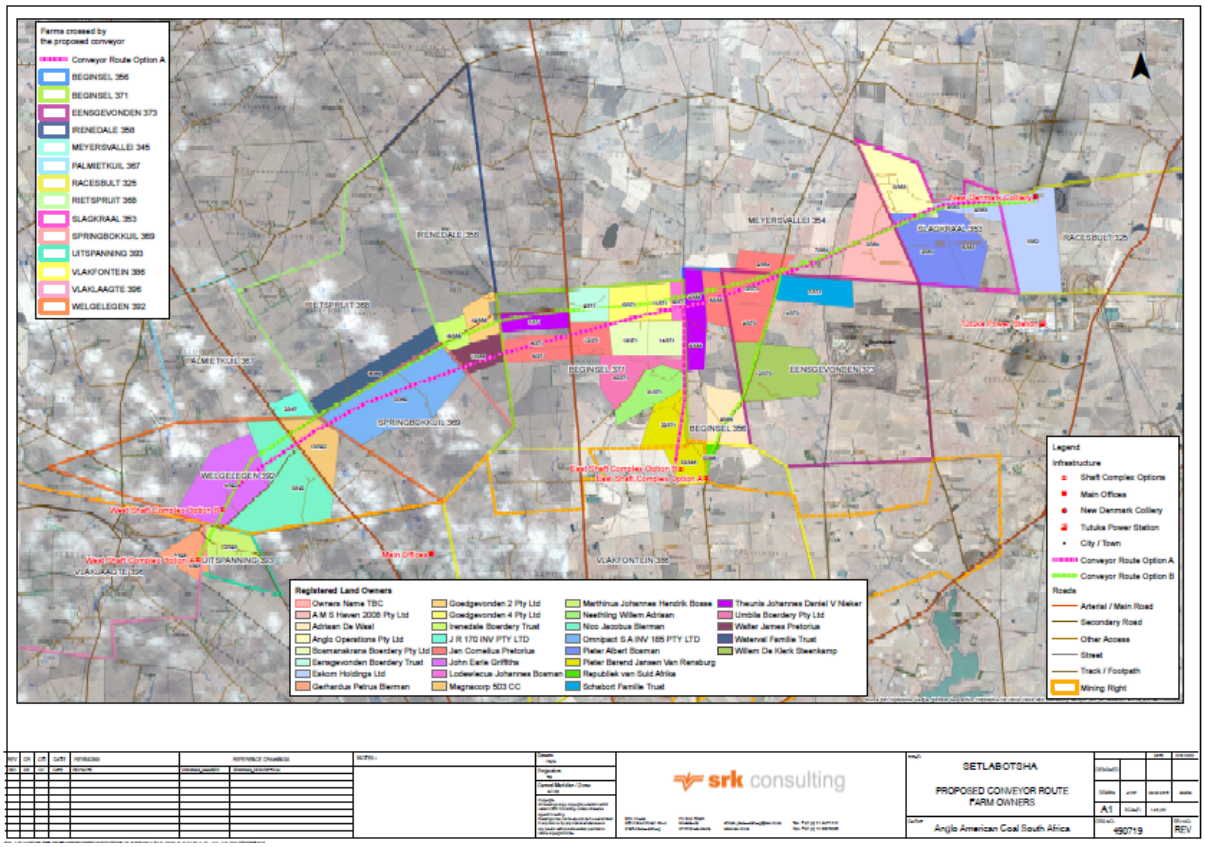

Figure 4: Map indicating the different farms and farm portion affected by the project (SRK Consulting).

2. TERMS OF REFERENCE (OBJECTIVES)

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 on the property (see Appendix A).

2. Document the found cultural heritage sites according to best practice standards for heritage related studies.

3. Study background information on the area to be developed.

4. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).

5. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

6. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

7. 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 artifacts 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 artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. 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. Developers should however note that the report should make it clear how to handle any other finds that might occur.

7. In this particular case large parts of the surveyed area is covered with maize and soya bean fields as well as dense and high growing vegetation which sometimes were inaccessible. It therefore negatively affected both the horizontal as the vertical archaeological visibility. Certain properties were also inaccessible due to gates being locked or some natural barrier.

8. Final impact on heritage resources can only be determined once final layout plans are available.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. The first of these are the National Heritage Resources Act (Act 25 of 1999) which deals with the cultural heritage of the Republic of South Africa. The second is the National Environmental Management Act (Act 107 of 1998) which inter alia deals with cultural heritage as part of the Environmental Impact Assessment process.

4.1 The National Heritage Resources Act

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

a. Archaeological artifacts, 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 or 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 only looks at archaeological resources and can only be done by a professional archaeologist. A Palaeontological Impact Assessment (PIA) is an assessment of palaeontological heritage. Palaeontology is a different field of study, and although also sometimes required by the South African

Heritage Resources Agency (SAHRA)[1], should be done by a professional palaeontologist.

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^2 or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m^2
e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

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; or
d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or

[1] Please consult SAHRA to determine whether a PIA is necessary.

recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.

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 of 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 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 (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 **Human Tissues Act** (**Act 65 of 1983 as amended**).

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 need to be managed by not disturbing such finds and by having them 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 artifacts and structures need to be removed is 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 no 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.

6.2 Field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)[2], while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 5).

Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. The size of the surveyed area for the East and West shafts are approximately 100 Ha and as indicated two options for each were surveyed. The size of the proposed Office Complex is 60 HA. The length of the proposed conveyor is approximately 32 km and two options were surveyed. The survey was done on 15 and 16 March 2016 and took 10 hours to complete. It was conducted by the author of this report.

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. In this case it was not necessary to do.

6.4 Documentation

All sites, objects features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of the Global Positioning System

[2] A Garmin Oregon 550 with an accuracy factor of a few meters.

(GPS). The information was added to the description in order to facilitate the identification of each locality.

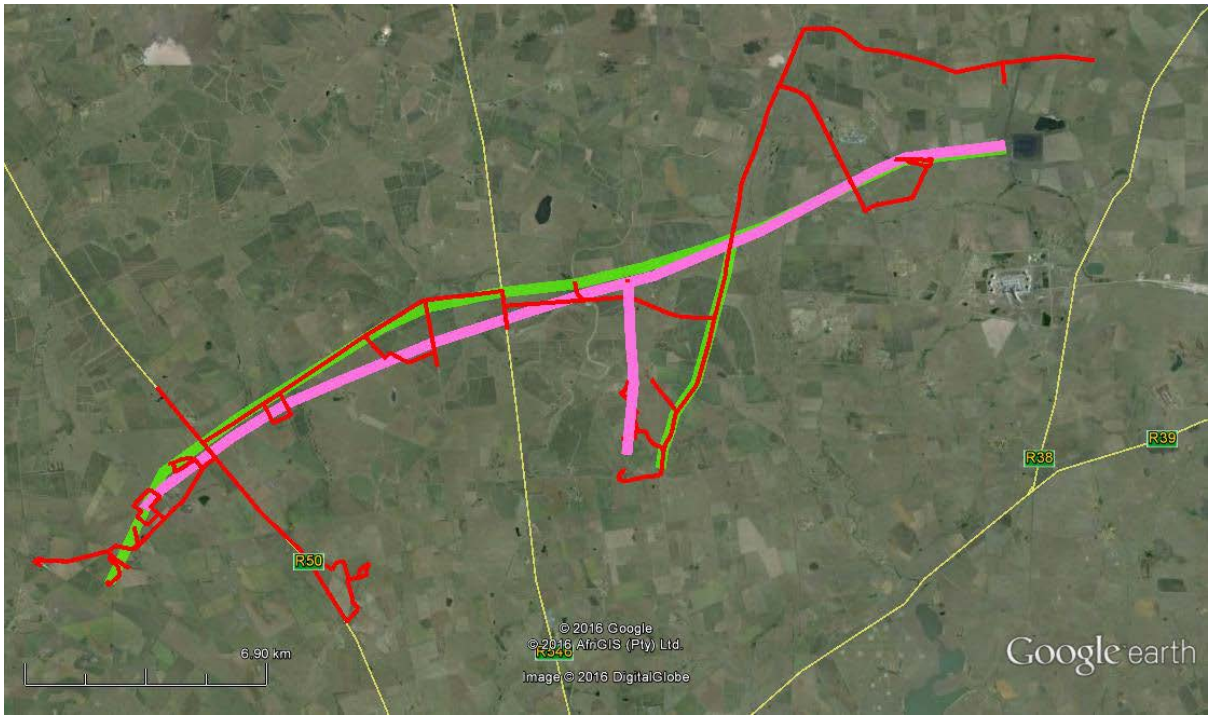

Figure 5: GPS track of the surveyed area[3]. North reference is to the top.

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 AREA

The area that was surveyed is located on the Mpumalanga Highveld and shows typical Highveld characteristics, including farming practices. The natural environment consists mainly of grassland with isolated trees. The latter are mostly foreign species such as Eucalyptus or Black Wattle. The vegetation cover varies from areas with

[3] As indicated inaccessible areas could not be surveyed.

very low grass to areas with dense, high grass (Figure 6 to 7). The latter of course has a negative effect on both the horizontal as the vertical archaeological visibility, whereas visibility is good at the afore mentioned. A few open areas with little vegetation was also identified (Figure 8).

Many signs of the environment being disturbed by recent human activities are present. Pioneer species such as grass and weeds are found throughout the surveyed area. The main disturbance however, comes from agricultural activities, in this case maize and soya bean fields (Figure 9 to 15). This also includes old fields (Figure 16 to 17) and infrastructure such as farm roads, a railway track and irrigation canal (Figure 18).

The topography of the surveyed area consist of rolling grass covered hills (Figure 19). A number of small streams drains the surveyed area.

Figure 6: Low and high grass cover in the surveyed area.

Figure 7: General view of the surveyed area showing high, dense vegetation.

Figure 8: Open area along one of the proposed conveyor routes.

Figure 9: One of many soya bean fields in the surveyed area.

Figure 10: One of many maize fields along the proposed conveyor routes.

Figure 11: Maize field at the proposed East Shaft Complex option A.

Figure 12: Maize field at the proposed East Shaft Complex option B.

Figure 13: Agricultural fields at the eastern point of option B for the conveyor.

Figure 14: Soya bean field at the proposed West Shaft Complex option A.

Figure 15: Soya bean field at the proposed West Shaft Complex option B.

Figure 16: Old field along the proposed conveyor route option A.

Figure 17: Old field at the proposed site for the Mine offices.

Figure 18: Irrigation canal in the surveyed area.

Figure 19: General view of the surveyed area showing rolling hills.

8. HISTORICAL CONTEXT (BASELINE DESRIPTION)

Three sites of cultural heritage significance were located during the survey. Some background information is given in order to place the surveyed area and the sites found in a historical context and to contextualize possible finds that could be unearthed during construction activities.

A few heritage reports were written in the Standerton area. These however either indicated that nothing of heritage significance was found, or the sites that were found has no contextual link to the current surveyed area. (SAHRIS database; Archaetnos' database.

8.1 Stone Age

The Stone Age 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
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

The geographical area around the towns of Standerton and Bethal is not known as an area containing prehistoric sites dating to the Stone Age. For instance no such

sites are indicated on maps contained in a historical atlas of this area (Bergh 1999: 4-5). However this may only be since no research has actually been done in this area. The closest known Stone Age occurrences are a Late Stone Age site at the town of Ermelo and rock art sites far to the west of Standerton (Bergh 1999: 4-5).

The environment definitely would be supportive to Stone Age activities. The good vegetation in the surrounding area and the rivers indicated that ample grazing and water may have been available, making it a prime spot for hunting in the past. Therefore one may assume that Stone Age people probably would have at least moved through the area. As no natural shelters were seen during the survey and therefore it is possible that these people did not stay here for long periods of time.

As it is possible that Stone Age material may be found during construction and mining activities on site, one should be on the lookout for it. If large quantities of stone tools are found in one location will constitute a site and will have to be investigated further.

8.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts (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.
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.
Late Iron Age (LIA) 1300 – 1840 A.D.

Also no sites from the Early Iron Age have been identified in the area (Bergh 1999: 6). Again it needs to be stated that this may only be a result of the lack of research done in this part of the country.

It is known that Late Iron Age sites are found in a large area around the towns of Bethal and Standerton. It includes at least 585 such sites. At none of these indications of metal working has been found (Bergh 1999: 6-7), meaning that it would mostly consist of stone walled living complexes. It is also known that the early trade routes did not run through this area (Bergh 1999: 9).

However, during the survey no such sites were identified. The good grazing in the broader environment however would have provided a good environment for Iron Age people although building material would have been reasonably scarce. One would therefore expect that Iron Age people may have utilized the area. The white settlers moved into this environment later on for the same reason.

8.3 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. This era is sometimes called the Colonial era or the recent past.

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore and because less time has passed, much more cultural heritage resources from this era have been left on the landscape. 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 needed in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

At the beginning of the 19th century the Phuthing, a South Sotho group, stayed in the vicinity of modern day Standerton. During the Difaquane they fled to the south (Bergh 1999: 10-11; 109). In 1829 the traveler Robert Scoon passed through an area to the north of Bethal (Bergh 1999: 13). The first white farmers only settled here during the late 1850's. By the 1890's this area was inhabited by many white farmers (Bergh 1999: 18-20). The town of Standerton was established in 1879 although it already was a district in 1878. Bethal was established in 1880 and it became an independent district in 1898 (Bergh 1999: 20-21).

During the Anglo-Transvaal War (1880-1881) the British garrison in Standerton was beleaguered by the Boer forces (Bergh 1999: 46). The Highveld areas also saw much action consisting of various skirmishes between Boer and Brit during the Anglo-Boer War (1899-1902). It includes skirmishes on the farms Oshoek (4 December 1901), Trigaardsfontein (10 December 1901), Witbank (11 January 1902) and Nelspan (26 January 1902) (Bergh 1999: 51, 54). It however is not possible to indicate how close these came to the project area. At Standerton there was both a concentration camp for white and for black people (Bergh 1999: 54).

One may therefore expect to find farm buildings, structures and objects from this time period in the area. In fact, some of the farm houses seen during the survey would definitely be older than 60 years and therefore has heritage status. None of these will however be impacted on by the proposed development. Many graveyards from this period in time have also been identified in surrounding areas during past surveys (Archaetnos database).

9. KNOWLEDGE GAPS

It never is possible to know everything about the heritage in an area. It also is possible that certain sections of the surveyed area was not covered due to environmental factors, such as dense plant growth or accessibility. The report however does indicate how to deal with any possible finds that may be discovered during the development activities on site.

In this case it should be indicated that inaccessible areas all seems to be agricultural fields. The only possible remaining heritage sites in these may be graves which are sometimes invisible due to the height and denseness of the crops. If such sites became known later in, it should be handled in accordance with the recommendations made in this report.

10. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

As indicated three sites were identified. These are all grave yards from the Historical Age.

10.1 Site 1 – graves

Site 1 is a grave yard with at least 36 graves (Figure 20). These are mostly stone packed and only some have stone headstones, whilst other has no headstones. A few have brick or cement borders and headstones.

Only one surname could be identified as the information on the headstones has been damaged. The surname is Gumbi. Only two dates of death could be identified, being 1945 and 1996. This means that all three of the categories of graves are present being those younger than 60 years, those older than 60 years (called heritage graves) and those with an unknown date of death (to be handled as heritage graves).

GPS: 26°48’32.0’’S
29°14’42.6’’E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a field rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

The graves inside of the corridor for option B of the proposed conveyor route. Should this route be the chosen one, one should therefore either steer clear of the graves with a buffer of at least 20 m. Option 1 would then be recommended. Should it be

impossible to steer clear of the graves, it may be relocated and option 2 will then come into play.

However, since nothing of heritage significance was identified close to the proposed conveyor route the best option would be to rather make use thereof and not option B.

Figure 20: Some of the graves at site no. 1.

10.2 Site 2 – graves

Site 2 is another grave yard with at least 18 graves (Figure 21). These are mostly stone packed and only some have stone headstones, whilst other has no headstones. Some are indicated by a stone headstone. One of the graves has a cement border and headstone and two granite headstones and borders.

Unfortunately no information could be obtained as the graves are found in dense grass and was on the other side of an electrocuted fence. It is therefore not possible to indicate exactly which of the three categories of graves are present. However, most of the graves definitely have an unknown date of death (to be handled as heritage graves).

GPS: 26°47’09.0’’S
29°14’35.8’’E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a field rating of Grade IIIB. It may therefore be mitigated.

Figure 21: Some of the graves at site no. 2.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

The graves inside of the corridor for option B of the proposed conveyor route. Should this route be the chosen one, one should therefore either steer clear of the graves

with a buffer of at least 20 m. Option 1 would then be recommended. Should it be impossible to steer clear of the graves, it may be relocated and option 2 will then come into play.

However, since nothing of heritage significance was identified close to the proposed conveyor route the best option would be to rather make use thereof and not option B.

10.3 Site 3 – graves

Site 3 is another grave yard with at least 6 graves. Due to the density of the vegetation no photograph was taken. These are mostly stone packed and some have cement headstones.

Accordingly no further information could be obtained. It is therefore not possible to indicate exactly which of the three categories of graves are present.

GPS: 26°49’32.2’’S
29°14’47.1’’E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a field rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

The graves are outside of any of the planned developments, although it is reasonably close thereto. No impact is foreseen and therefore no mitigation measures are necessary. The developer however needs to take note of the position of these graves in order to ensure that it is not impacted on.

11. IMPACT RATING

Activity	Phase	Potential Impact	Significance rating (not mitigated)	Management Measures	Significance rating (if mitigated)
Option B for conveyor route	Pre-construction and Construction: all activities	**Impact on heritage resources – Two grave sites have been identified with a third nearby.** Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a field rating of Grade IIIB. It may therefore be mitigated.	**Magnitude**: Major - **Duration:** Long term **Scale:** Local **Consequence:** High **Probability:** Definite **Significance:** High (-)	Rather use Option A for conveyor route. If not possible stay 20 m from sites, fence in and write management plan. If not possible to prevent impact, relocate graves in accordance with heritage legislation.	**Magnitude**: Minor+ **Duration:** Long term **Scale:** Local **Consequence:** Medium **Probability:** Definite **Significance:** Medium (+)
	Operation	None			
	Decommissioning and closure Post-closure	None None			

12. CONCLUSION, MANAGEMENT MEASURES AND RECOMMENDATIONS

The survey of the indicated areas at the Setlabosha Project was completed successfully. Three grave yards were identified (Figure 22-23).

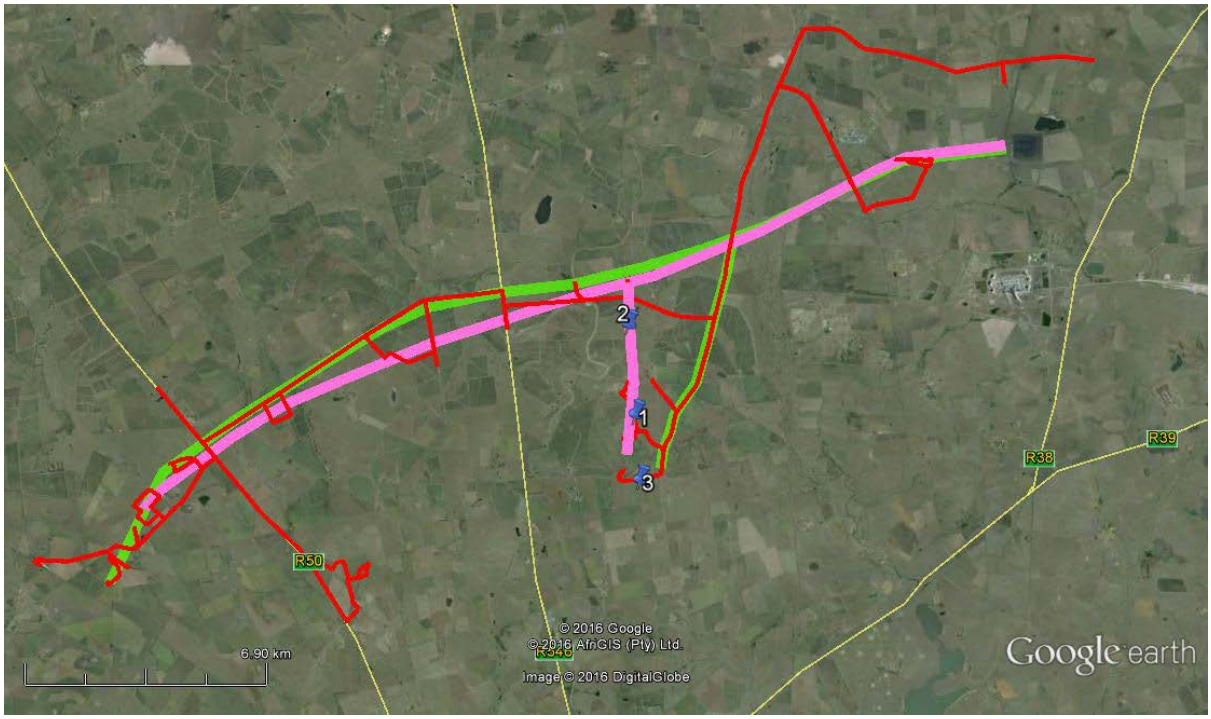

Figure 22: Location of the sites identified during the survey in relation to the proposed conveyor route options.

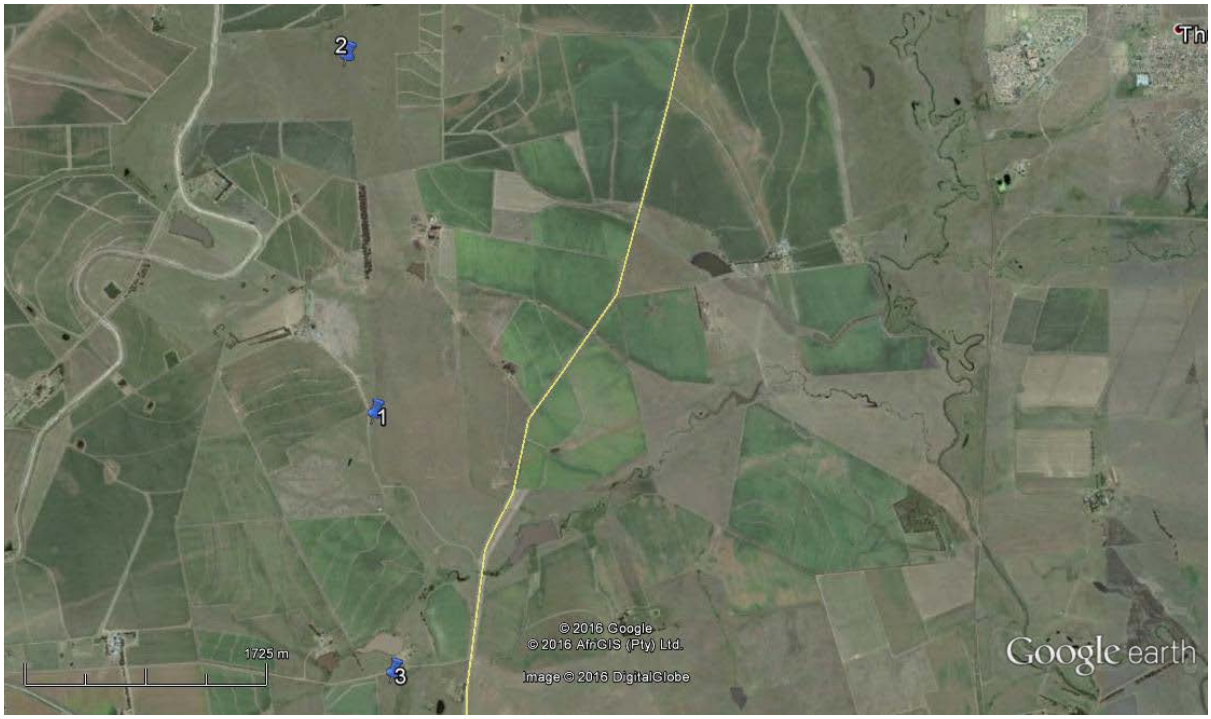

Figure 23: Location of the sites identified during the survey.

The following is recommended:

- Three grave yards were found, all being regarded as being of high cultural significance.

- Since none of these were identified close to the proposed conveyor route A, it is recommended that this route be used.

- Should it nor be possible, meaning that route option B is used, the following is recommended, there would be two options to deal with the graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation. A buffer zone of 20 m is recommended.

- The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

- Nothing of heritage importance was identified at any of the proposed shaft positions or the mine complex. Therefore the proposed development may continue here on any of these options.

- The proposed development may continue, within the parameters set out by these recommendations.

- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

13. REFERENCES

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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 artifacts, 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: Artifact (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.
Aestetic 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[4] and not be mitigated (high significance)
Local Grade IIIB	should be included in the heritage register and may be mitigated (high/ medium 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)

[4] The heritage register is a register of all known sites of heritage significance. It is kept and updated by the Provincial Heritage Resources Agencies.

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.

APPENDIX F – SPECIALIST REPORT REQUIREMENTS

No.	Requirement	Section in report
1	A specialist report prepared in terms NEMA EIA Regulation 982 must contain:	
a)	Details of -	
(i)	The specialist who prepared the report	Front page
(ii)	The expertise of that specialist to compile a specialist report including a curriculum vitae	p.3
b)	A declaration that the specialist is independent	p.4
c)	An indication of the scope of, and the purpose for which, the report was prepared	Sec. 2
d)	The date and season of the site investigation and the relevance of the season to the outcome of the assessment	Front page
e)	A description of the methodology adopted in preparing the report or carrying out the specialised process	Sec. 6
f)	The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	Sec. 11
g)	An identification of any areas to be avoided, including buffers	Sec. 12
h)	A map superimposing the activity including the associated structure and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	Sec. 12
i)	A description of any assumption made and any uncertainties or gaps in knowledge	Sec. 9
j)	A description the findings and potential implication\s of such findings on the impact of the proposed activity, including identified alternatives on the environment	Sec. 10
k)	Any mitigation measures for inclusion in the EMPr	Sec. 12
l)	Any conditions for inclusion in the environmental authorisation	Sec. 12
m)	Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Sec. 12
n)	A reasoned opinion -	
(i)	As to whether the proposed activity or portions thereof should be authorised	Sec. 12
(ii)	If the opinion is that the proposed activity 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	Sec. 12
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	Sec. 4