



Archaetnos Culture & Cultural
Resource Consultants
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**A REPORT ON AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE
PROPOSED ZIBULO NORTH SHAFT EXPANSION PROJECT, CLOSE TO
OGIES, MPUMALANGA PROVINCE**

For:

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REPORT NO.: AE02033V

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12 October 2020

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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.

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EXECUTIVE SUMMARY

Archaetnos cc was requested by Geovicon to conduct an archaeological impact assessment (AIA) for the proposed Zibulo North Shaft Expansion Project. The site is located south west of Ogies in the Mpumalanga Province.

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

During the survey, twenty-five sites of cultural heritage significance were identified within the project area.

The following is recommended:

- Nineteen of the identified sites are graves and graveyards, namely: number 1, 2, 3, 6, 7, 9-16, 18-19, 21, 22, 24 and 25 with site no, 17 also having graves together with farm buildings. These are always of high heritage significance. There are two ways of dealing with graves.
 - The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the mine.
 - The second option is to exhume and relocate the mortal remains. This usually is done when the graves are in the area to be directly affected by the mining activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist are needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy. Since the graveyard is outside of the area of direct development, and already fence in, it should remain as such.

- One grave site, site number 15 is in danger of being directly impacted by the development. However, the mine has indicated that they would rather make use of current infrastructure in order to avoid Option 2. Therefore Option 1 is also recommended here, but the mine needs to ensure that the site remain unaffected. If impossible, Option 2 will have to be implemented.
- Five grave sites, site numbers 2, 9, 10, 12, 13 is in the development area and may be impacted by issues like dust and blasting. Thus Option 1 is recommended. The drafting of a cultural heritage management plan (CMP) is of extremely importance to ensure the sustainable protection of the graves.
- Ten grave sites, site numbers 6, 7, 11, 14, 16, 17, 18, 19, 21, 22 and 25 is in the larger underground mining area. It is advisable to also implement Option 1 to prevent any damage and minimize the chance for future claims for compensation due to damage to the graves. The mine also needs to ensure that mining does not lead to collapsing or incaving of the graves.
- Three graves sites, site numbers 1, 3 and 24 is located outside the study area. These may be excluded from mitigation measures.
- All other sites, i.e. farmyards and historical structures (site 4, 5, 8, 17, 20 and 23) are of low heritage significance. The description in this phase 1 heritage report is seen as sufficient recording and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorization. It may also be left *in situ* to deteriorate naturally. The latter is rather recommended as the sites falls outside of the area of direct impact.
- Only after implementation of the above mitigation measures and upon receiving the necessary comments from the heritage authority, the proposed development may continue.
- 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.
- In This regards the following 'Chance find Procedure' should be followed:
 1. Upon finding any archaeological or historical material all work at the affected area must cease.
 2. The area should be demarcated in order to prevent any further work there until an investigation has been completed.
 3. An archaeologist should be contacted immediately to provide advice on the

matter.

4. Should it be a minor issue, the archaeologist will decide on future action, which could include adapting the HIA or not. Depending on the nature of the find, it may include a site visit.
5. SAHRA's APM Unit may also be notified.
6. If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.
7. 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.
8. Work on site will only continue after removal of the archaeological/ historical material was done.

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.

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CURRICULUM VITAE

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- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
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- 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 35 peer-reviewed and 43 popular articles.
- Has written 11 books/book contributions/conference proceedings .
- Has been the author and co-author of over 973 unpublished reports on cultural resources surveys and archaeological work.
- Has delivered more than 75 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 2012-2020).

A list of reports can be viewed on 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.



Signed:

Date: 12 October 2020

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

1. INTRODUCTION

Archaeos cc was requested by Geovicon to conduct an archaeological impact assessment (AIA) for the proposed Zibulo North Shaft Expansion Project. The site is located south west of Ogies in the Mpumalanga Province (Figure 1-3).

The study forms part of the Environmental Authorisation Process. The client indicated the area to be surveyed. It was surveyed via foot and off-road vehicle.

The proposed work includes a section where infrastructure will be erected as well as a large area for underground mining. No opencast mining will be conducted. Infrastructure will consist of the construction of the north shaft complex, conveyor belt/pipeline and the two ventilation fans. Resultingly numerous portions of different farms are included. The applicable farms are Straffontein 252 IR, Zondagsfontein 253 IR, Smithfield 44 IS, Springboklaagte 33 IS, Cologne 34 IS, Leeuwfontein 219 IR, Welgelegen 221 IR, Vlakvarkfontein 213 IR, Boschpoort 211 IR, Schoongezicht 225 IR, Vanggatfontein 250 IR, Vanggatfontein 251 IR, Darwina Louw 254 IR and Strehla 261 IR (Figure 4).

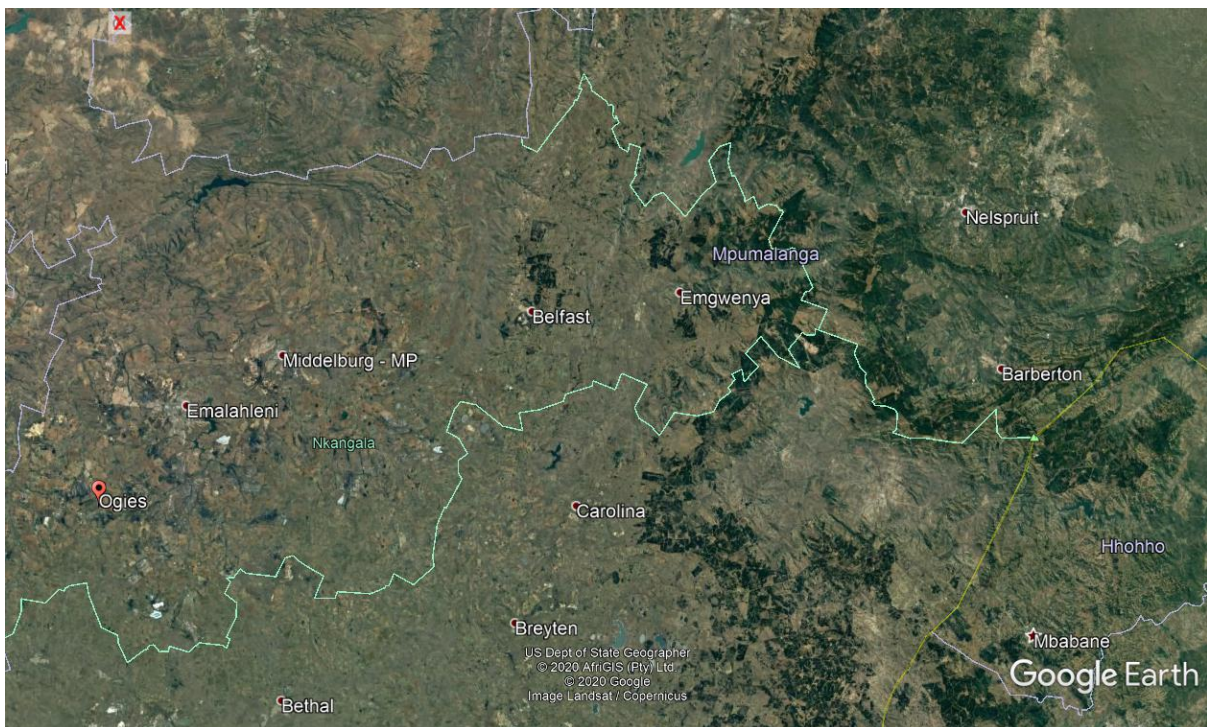


FIGURE 1: LOCATION OF OGIES IN THE MPUMALANGA PROVINCE. NORTH REFERENCE IS TO THE TOP.

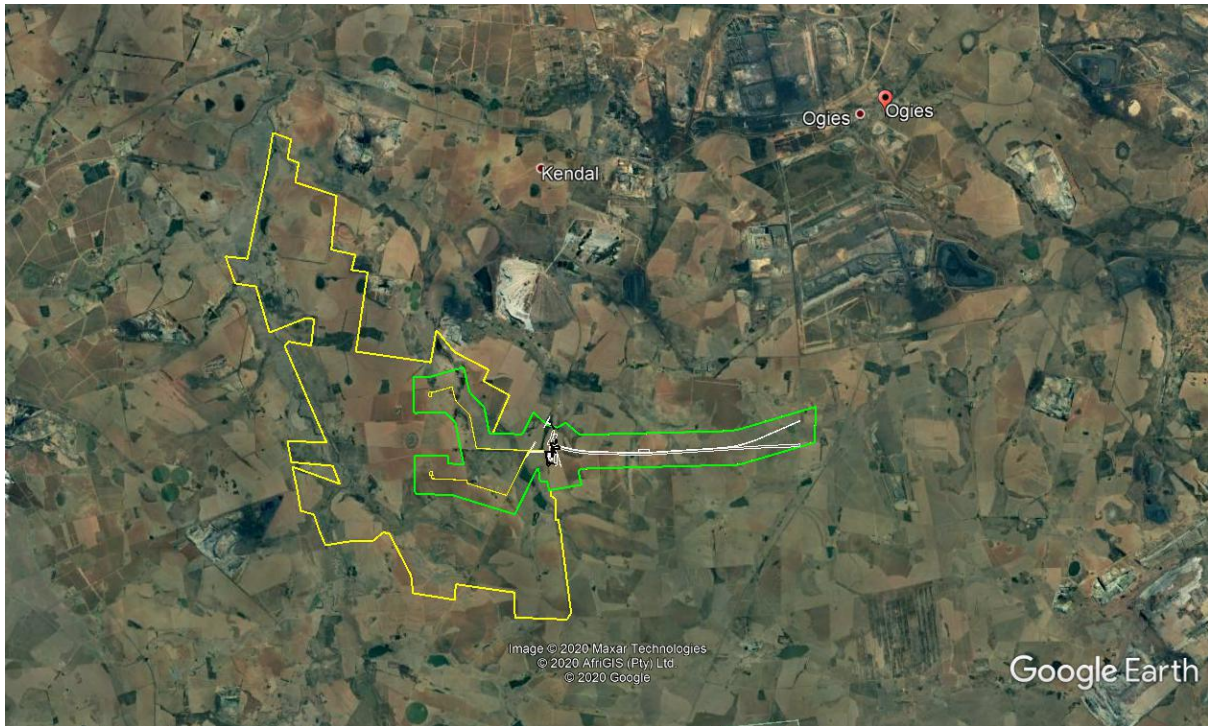


FIGURE 2: LOCATION OF THE SITE IN RELATION TO OGIES. THE YELLOW SECTION IS FOR UNDERGROUND MINING AND THE GREEN SECTION FOR INFRASTRUCTURE.

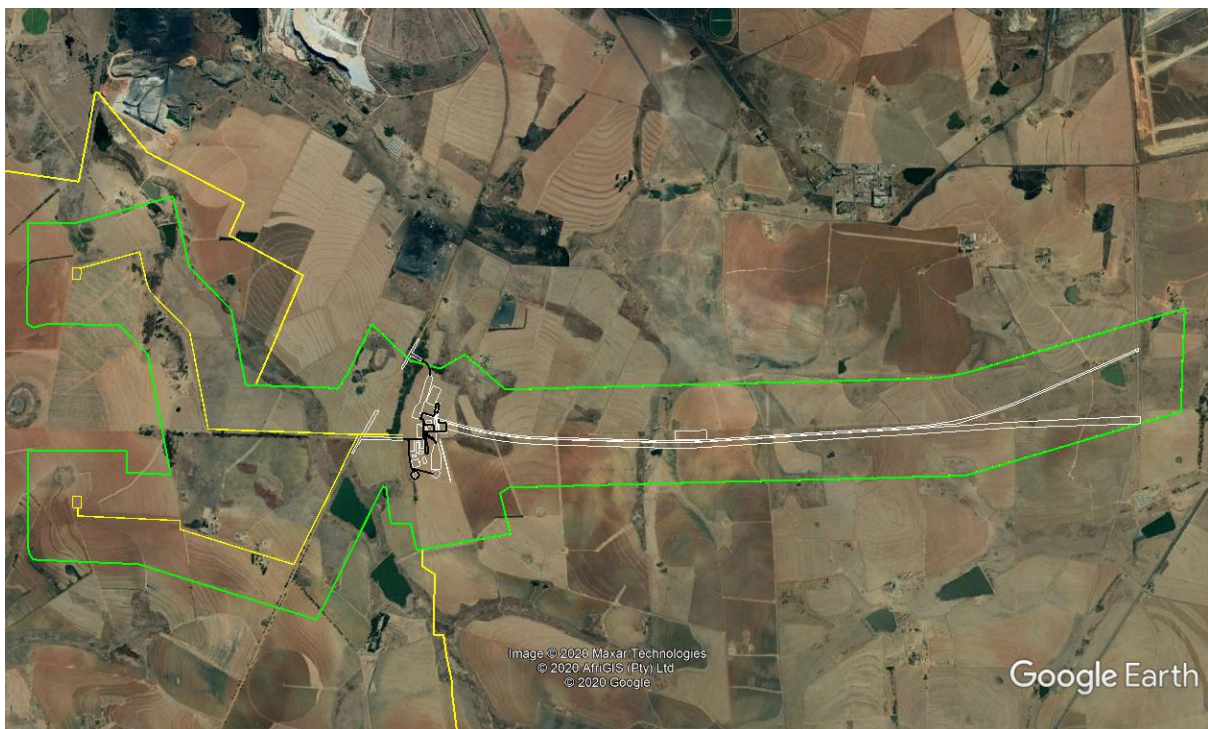


FIGURE 3: ZOOMED IN IMAGE OF THE SITE TO BE USED FOR INFRASTRUCTURE.

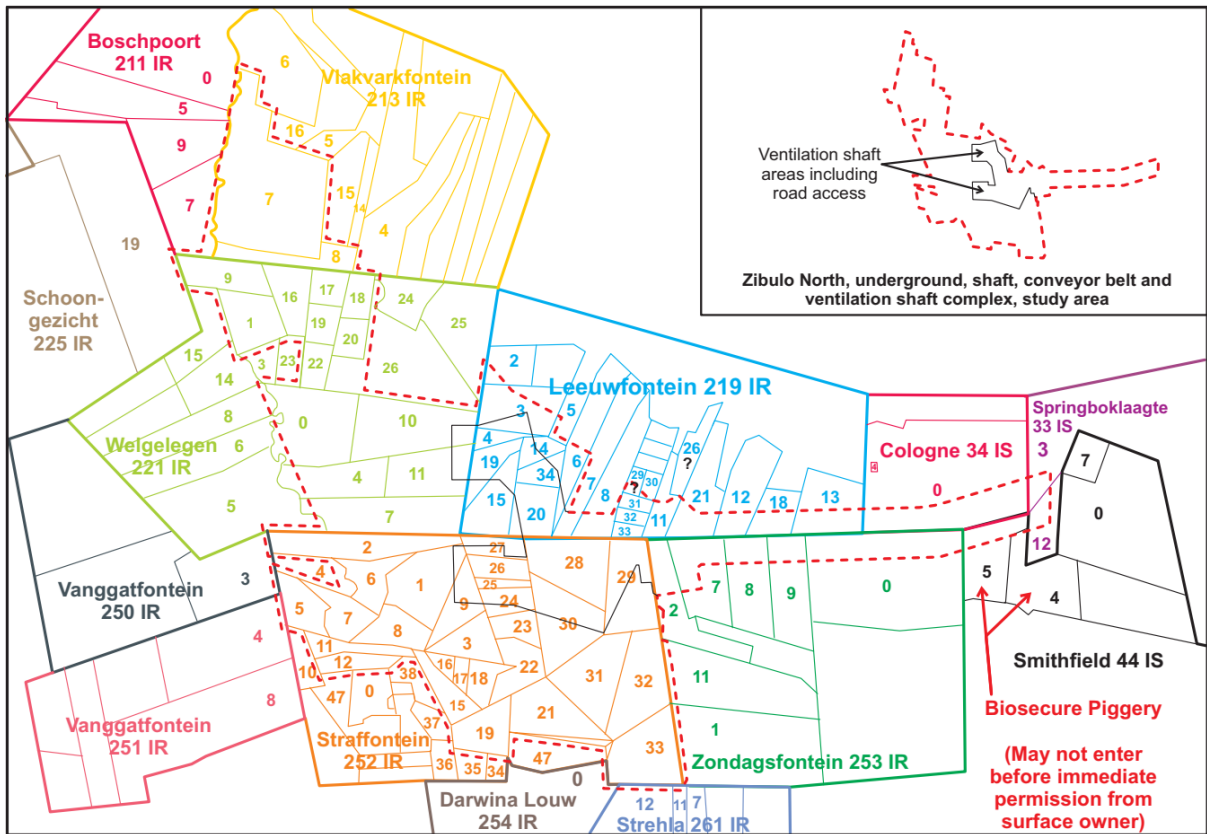


FIGURE 4: MAP INDICATING THE PROJECT AREA AND FARMS APPLICABLE.

This phase of the mining involves the establishment of a new North shaft complex to service the mining operations in the north eastern reserve and western reserve. Initially the shaft will be used to accommodate two additional sections mining domestic product, which will be delivered to surface to a loadout bin from which it will be trucked to the relevant client. As part of the natural progression of the underground mining, mining will transition to the new North shaft with all coal passing over a new overland conveyor to the existing overland conveyor.

Further, to improve production efficiency the new North shaft allows shorter travel times to the mining fronts and the surface infrastructure, therefore, allows for all employees to report to and proceed underground from the new North shaft complex. The site layout includes all necessary facilities, buildings and infrastructure to support this labour requirements and the coal transport to the Phola plant (Figure 5-8).



FIGURE 5-8: DETAILS OF MINING AND IN FRASTRUCTURE PLANS.

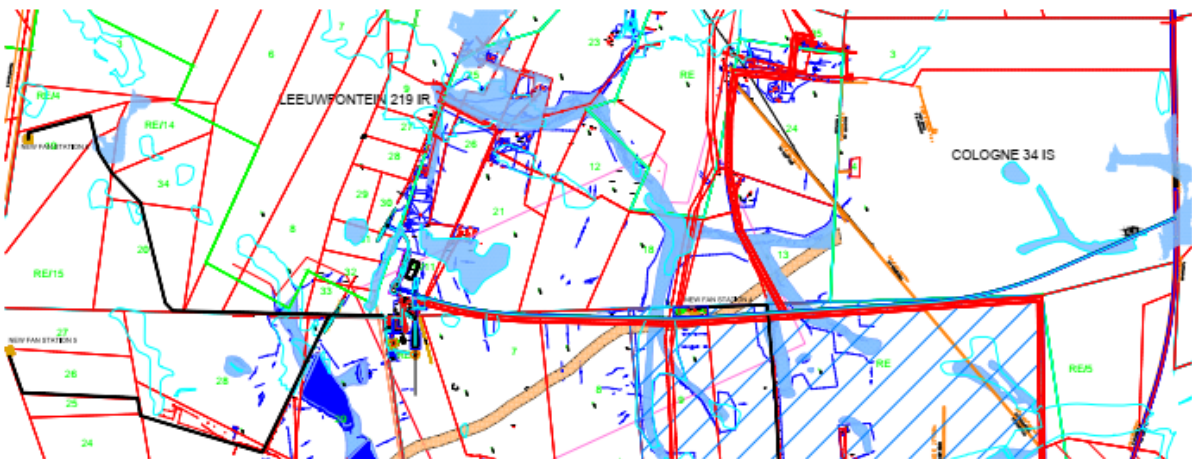


FIGURE 5-8: DETAILS OF MINING AND IN FRASTRUCTURE PLANS.

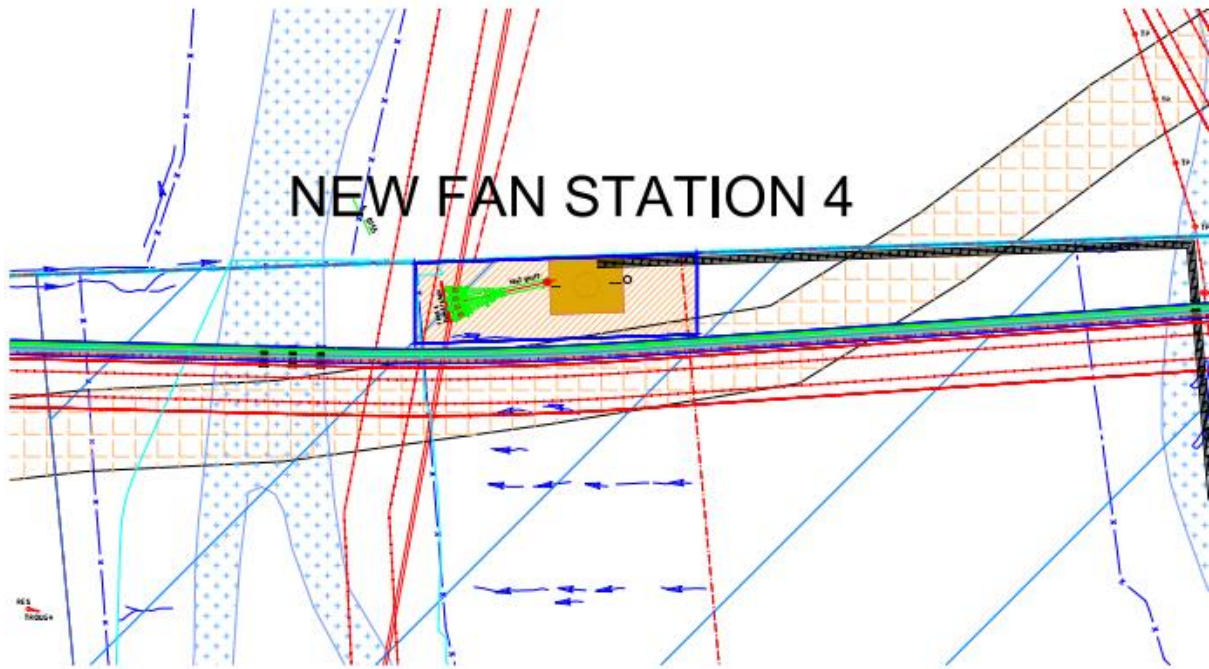


FIGURE 5-8: DETAILS OF MINING AND IN FRASTRUCTURE PLANS.



FIGURE 5-8: DETAILS OF MINING AND IN FRASTRUCTURE PLANS.

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 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. 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.

3.1 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 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. It contains different specialist reports, including, but not limited to, archaeology, built environment, palaeontology, visual aspects etc.¹

An Archaeological Impact Assessment (AIA) only looks at archaeological resources. It does however make use of the same methodology generally used for HIA studies.

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)² should be done by a professional palaeontologist.

The different phases during the HIA/AIA process are described in Appendix E. An AIA/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 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- 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.

¹ Please consult SAHRA to determine which of these studies are needed.

² Please consult SAHRA to determine whether a PIA is necessary.

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 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 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)**.

3.2 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.

4. 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). Any 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 includes the possible maintenance of such sites in situ, or when not possible, 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, this 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 affected communities. Again, professionals should carry out the work and adhere to the best available techniques.

Consultation with affected communities should be conducted. This entails that such communities should be granted access 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 affected 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.

5. METHODOLOGY

5.1 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.

5.2 Reference to other specialist desktop studies

Some heritage reports have been identified on the indicated farms. Information from that report is discussed below. Other specialist reports are also being conducted for the project.,

5.3 Public consultation and stakeholder engagement

Public consultation will be done in by the EAP.

5.4 Physical 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)³, 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 9).

Certain areas (south west and central of the surveyed area) were hazardous due to former mining activities and could not be accessed directly. In these areas the view was open with high archaeological visibility. It was were largely disturbed due to activities associated with open cast mining and associated infrastructures (e.g. roads, field offices and loading areas) and are thus regarded as being low risk areas for finding heritage resources. In fact, it likely will have no heritage features associated therewith.

The remainder of the site consisted of old agricultural land, animal pastures and grassland with high archaeological visibility. Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. In this instance, in the areas not disturbed, the under footing was reasonably dense, and the vegetation cover is low to medium. Accordingly, both the vertical and horizontal archaeological visibility was influenced negatively. However, it needs to be stated this area is deemed to be a low risk area for containing heritage sites. The site is several thousand hectares in size and the survey took 64 hours to complete.

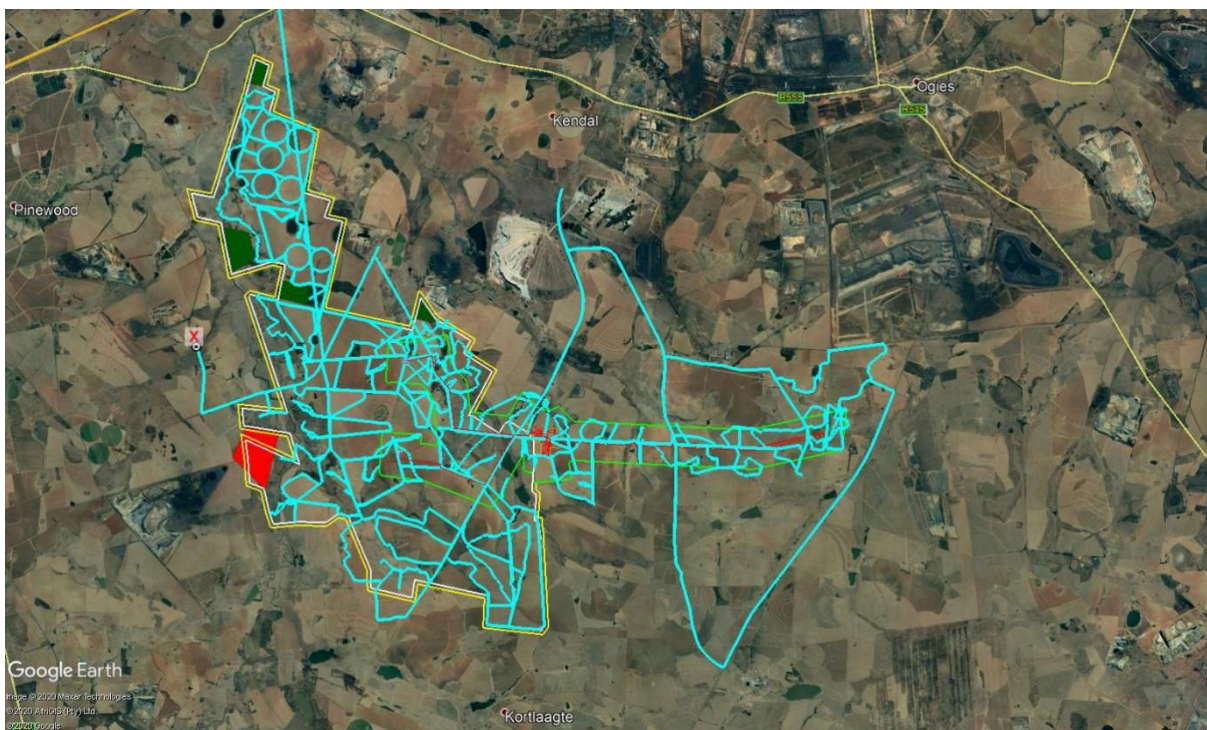


FIGURE 9: TRACK ROUTE OF THE SURVEY. THE RED BLOCK INDICATES AN AREA THAT WAS INACCESSIBLE. THIS AREA IS HOWEVER HIGLY DISTURBED AND THUS SEEN AS A LOW RISK AREA FOR CONTAINING HERITAGE SITES.

³ A Garmin Oregon 550 with an accuracy factor of a few meters.

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

5.6 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.

6. CONDITIONS AND 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, structures 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 case much of the surveyed area has been disturbed by recent human activities relating to agricultural practices. Accordingly, these areas are seen as low risk areas to reveal heritage sites due to it being almost entirely disturbed.
8. The vegetation cover is reasonably low and open, which has a positive effect on both the horizontal and the vertical archaeological visibility.
9. At the site certain areas could not be accessed due to safety concerns (active mining areas). However, the entire area here is disturbed giving it an extremely low chance of concealing heritage sites.

7. DESCRIPTION OF THE PHYSICAL ENVIRONMENT

Certain areas in the surveyed area could only be access by going through hazardous areas (active open cast mining) and could thus not be accessed directly. These are located to the west. However, the general view here of the area not being mined seems similar to rest of the surveyed area (Figure 10-11).

The remainder of the surveyed area (which could be accessed) is agricultural land, farm infrastructure, and grass land (Figure 12-14). During the survey the field were bare, and visibility was mostly good with 500m to 1000m visibility in some directions.

The vegetation consists mostly of low to medium grasses and pioneer plants in some of the fields (Figure 15-16). The latter also is an indication of former disturbance. Shrubs and trees are sparse.

The topography of the area is reasonably flat, with loose and sandy soil in the agricultural fields and loosely compacted soil and in the grasslands. Wetlands are and dams are scattered across the surveyed area and a river runs along the western side. Here the surrounding soil is a mixture of clay and turf (Figure 17-19).



FIGURE 10: MINING ACTIVITY IN THE WEST OF THE SURVEYED AREA.



FIGURE 11: AREA THAT COULD NOT BE ACCESSED TO THE WEST OF THE SURVEYED AREA.



FIGURE 12: EXAMPLE OF AGRICULTURAL LAND IN SURVEYED AREA.



FIGURE 13: FARM INFRASTRUCTURE IN THE SURVEYED AREA.



FIGURE 14: OPEN GRASS FIELDS IN SURVEYED AREA.



FIGURE 15: GENERAL VIEW OF VEGETATION IN THE SURVEYED AREA.



FIGURE 16: PIONEER VEGETATION GROWING UNDER POWER LINES IN THE SURVEYED AREA.



FIGURE 17: EXAMPLE OF A DAM IN THE SURVEYED AREA.



FIGURE 18: WETLAND IN SURVEYED AREA.



FIGURE 19: THE RIVER IN THE WESTERN SIDE OF THE SURVEYED AREA.

8. HISTORICAL CONTEXT

Twenty-five sites of cultural heritage significance were located during the survey. Some background information is also however given in order to place the surveyed area in a broad historical and geographical context and to contextualize possible finds that could be unearthed during construction activities.

This geographical area is not well-known as one containing many prehistoric sites. One however has to realize that this most likely only indicates that not much research has been done here before. On the existing SAHRA database many sites were identified in via heritage surveys that were done in the area (SAHRIS database; Archaetnos' database). This information is included in the discussion. However, it needs to be indicated that these sites merely serve as indication of the type of sites (e.g. graves and farmyards) that may be found in the surveyed area and ia not necessarily an indication of contextual relevance

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.

This geographical area is not known as an area containing prehistoric sites. No Stone Age sites are for instance indicated on a map contained in a historical atlas of this area (Bergh 1999: 4). The closest known Stone Age occurrence is a Late Stone Age site at Groenvlei, close to Carolina and that of rock art close to the Olifants River to the south of Witbank (Bergh 1999: 4-5). This may however only indicate a lack of research in the area.

The environment is such that it does not provide much natural shelter and therefore it is possible that Stone Age people did not settle here for long periods of time. They would have however been lured to the area due to an abundance of wild life as the natural vegetation would have provided ample grazing. The close vicinity of water sources would also worked human occupation in hand. Therefore, one may assume that Stone Age people probably would have moved through the area and one may therefore find small sites or occasional stone tools. In fact, a few stone tools were found out of context during the survey.

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.

Iron Age sites have been identified to the south of the area, around Bethal which lies far to the south-east of the surveyed area (Bergh 1999: 7). These all are dated to the Late Iron Age. Sites such as these are known for extensive stone building forming settlement complexes. No indication of metal smelting was identified at any of these sites (Bergh 1999: 8).

It is also known that the early trade routes did not run through this area (Bergh 1999: 9). However one should bear in mind that many of these areas may not have been surveyed before and therefore the possibility of finding new sites is always a reality.

The type of environment around Ogies definitely is suitable for human habitation. There is ample water sources and good grazing. One would therefore expect that Iron Age people may have utilized the area. This is the same reason why white settlers later on moved into this environment.

8.3 Historical Age

The Historical Age started with the first recorded oral histories in the area. It includes the in-migration of people that were able to read and write.

The first white people to move through this area were the party of the traveler, Robert Scoon who passed through during 1836 (Bergh 1999: 13). Although the Voortrekkers moved across the Vaal River during the 1830's, it seems as if white people only settled here after 1850 (Bergh 1999: 14-15).

At the beginning of the 19th century the Phuthing, a South Sotho group, stayed in the vicinity of modern day Kriel and Bethal to the south of the surveyed area. 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 south of Witbank (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).

During the Anglo-Boer War the Highveld areas saw much action consisting of various skirmishes between Boer and Brit (Bergh 1999: 51, 54). It includes skirmishes on the

farms Oshoek (4 December 1901), Trigaardsfontein (10 December 1901), Witbank (11 January 1902) and Nelspan (26 January 1902).

One may therefore expect to find farm buildings, structures and objects from this time period in the area. Many graveyards from this period in time (graves and farmyards) have also been identified in surrounding areas during past surveys (SAHRIS database; Archaetos database). This is however outside of the current area investigated, but in some cases on other portions of these farms. There may thus be a contextual link, but none of the previously identified sites will be impacted on by the current proposed development.

9. DISCUSSION OF HERITAGE SITES IDENTIFIED

9.1 Graves - Sites no. 1, 2, 3, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 24 & 25

Cultural significance Table: Site 1, 2, 3, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 24 & 25

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Neglible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	High
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	N	
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	High
Its importance in demonstrating the principal characteristics of a	N	

particular class of South Africa's natural or cultural places or objects		
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	High
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information

- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

= **High (6)** x 4

= 24

The sites therefore receive a field rating of Local Grade IIIB. It means that these should be included in the heritage register and may be mitigated (high/ medium significance), if needed. Mitigation is subject to a permit application lodged with the relevant heritage authority.

Two possibilities exist. The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert in order to comply with heritage protocols. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the mine.

The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the mining activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

Option 1 is recommended for all grave sites. Option 2 is thus not recommended, but care should be taken that site no. 15 is not impacted directly. It is next to a road and thus only secondary impact is expected. The mine however needs to ensure this remains the case.

Site no.1:

This is a graveyard of about 60 m long and about 14 m wide on an open patch of land with a dirt road running along its borders. It lies 1 km north of proposed area and will not be directly affected by the mining development. The graves are orientated east to west. Grave good are sparsely distributed around the graves (Figure 20-21).

GPS: 26°07'40.97"S 29°01'50.58"E

The headstones are made of granite, natural stone and cement and the grave dressings are made of natural stones, granite, cement/concrete and gravel. The total number of graves is approximately 78. No graves of 60 years and older was found, 26 graves are younger than 60 years and 52 unmarked graves were found. The oldest grave belongs to Willian Bongane – 22/03/1970 and the youngest grave is that of Thomas Bantu Malimela – 13/03/2002.

The following legible information was noted:

Jane Maddo – -/-/1975

Magiya Wilson – 17/06/1980

Johannes Skosana – 07/06/1982

Ernest Molefe – 12/06/1986

Elsie Papie Sola – 11/08/1999

Sabao Mnguni Sihlangu – 09/09/2000



FIGURE 20: SOME OF THE GRAVES AND GRAVE GOODS AT SITE NO. 1.



FIGURE 21: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 1.

Site no. 2:

This is a graveyard of about 60 m long and about 25 m wide and is surrounded by a fence. It lies within the proposed development area 360 m south of the conveyor belt and could perhaps be affected by the mining development. All the graves are located inside of the fence. The graves are orientated east to west. There is also evidence of animal activity associated with grazing inside the fenced off area. And some of the graves seem to have sustained damage (Figure 22-24).

GPS: 26°09'1.79"S 29°00'13.06"E

The headstones are made of granite and cement and the grave dressings are made of cement/concrete, natural stones, bricks and gravel. The total number of graves is approximately 109. One grave is 60 years and older, 8 graves are younger than 60 years and 100 unmarked graves were found. The oldest grave belongs to Ester Mkhathswa – 14/02/1949 and the youngest grave is that of Willson Balele Sola – 11/10/1980.

The following legible information was noted:

Betty Mcoco – -/-/1980

Nomathasilana Sindane – 08/05/1975

Joanah Nomademfu Mbamba – 20/03/1976

Simon Masuku – 02/10/1976



FIGURE 22: SOME OF THE GRAVES AT SITE NO. 2.



FIGURE 23: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 2.



FIGURE 24: DAMAGED GRAVES AT SITE NO. 2.

Site no. 3:

This is a graveyard of about 20 m long and about 7 m wide on an open patch land within an agricultural field with no fence. It lies about 200 m southeast of proposed area and will not be directly affected by the mining development. The graves are orientated east to west (Figure 25-26).

GPS: 26°09'31.62"S 28°57'54.87"E

The headstones are made of granite and marble and the grave dressings are made of granite. Total number of graves is approximately 5. Three graves are 60 years and older, no graves are younger than 60 years and 2 unmarked graves were found. The oldest grave belongs to Paulis Welhelmes Smardyk Mouton – 20/01/1921 and the youngest grave is that of Johannes Paulus Mouton – 30/04/1948.

The following legible information was noted:

Daniel Cornelius Mouton – 18/01/1948

Magel Magrieta Mouton – N/A

Daniel C. Mouton – 08/07/-



FIGURE 25: SOME OF THE GRAVES AT SITE NO. 3.



FIGURE 26: GENERAL VIEW AT THE GRAVESITE AT SITE NO. 3.

Site no. 6:

This is a single grave in an open field with no fence. It lies within the proposed underground mining area and is about 1,7 km south of proposed DTM project infrastructure and will not be directly affected by the mining development but could sustain secondary damage due to underground mining activities, i.e. caving in. The grave is orientated east to west (Figure 27).

GPS: 26°10'19.68"S 28°55'24.86"E

The headstone and dressing are made of natural stone. Only one unmarked grave was found.



FIGURE 27: VIEW OF THE GRAVE AT SITE NO. 6.

Site no. 7:

This is a single grave in an open field with no fence. It lies within the proposed underground mining area and is about 1,4 km south of proposed DTM project infrastructure and will not be directly affected by the mining development but could sustain secondary damage due to underground mining activities. The grave is orientated east to west (Figure 28).

GPS: 26°10'8.91"S 28°55'24.32"E

The headstone is made of granite. And the grave dressing is made of granite and gravel. Only one grave 60 years and older was found and belongs to Mndazi Sinah Nadima Sibiyá – -/1920.



FIGURE 28: VIEW OF THE GRAVE AT SITE NO. 6.

Site no. 9:

This is a graveyard of about 60 m long and about 20 m wide and is surrounded by a fence and is next to residences. It lies within the proposed development area about 69 m north of proposed DTM project infrastructure and might be affected by the mining development. All the graves are located inside of the fence. The graves are orientated east to west. Grave goods are sparsely distributed among the graves (Figure 29-30).

GPS: 26°09'29.22"S 28°55'50.57"E

The headstones are made of granite, natural stone and cement and the grave dressings are made of cement/concrete, natural stones, bricks and gravel. The total number of graves is approximately 90. No graves are 60 years and older, 43 graves are younger than 60 years and 47 unmarked graves were found. The oldest grave belongs to Mmakgonshipane Mmekgadi Kgwete – 23/03/1965 and the youngest grave is that of Mhlagi Elizabeth Mthimunye – 09/12/2003.

The following legible information was noted:

Zinhle Annah Khumalo – 24/03/1996

Jakobus Mokuena – 29/05/1966

Samuel Sikhosa – -/05/1967

Koos Skhosana – 01/10/1966



FIGURE 29: SOME OF THE GRAVES AND GRAVE GOODS AT SITE NO. 9.



FIGURE 30: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 9.

Site no. 10:

This is a graveyard of about 12 m long and about 4 m wide and is not surrounded by a fence. It is located next to residence. It lies within the proposed development area about 299 m west of proposed DTM project infrastructure might be affected by the mining development. The graves are orientated east to west (Figure 31-32).

GPS: 26°08'53.16"S 28°55'35.68"E

The headstones are made of natural stone, bricks and cement and the grave dressings are made of cement/concrete, natural stones, bricks, granite and gravel. The total number of graves is approximately 8. No graves are 60 years and older, one grave is younger than 60 years and 7 unmarked graves were found. The oldest grave belongs to Andries – -/-/1982. This is also the only grave with a partial date of death.

The following legible information was noted:

Mlalelwa Skosana – N/A

Anna Masuku – N/A



FIGURE 31: SOME OF THE GRAVES AT SITE NO. 10.



FIGURE 32: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 10.

Site no. 11:

This is a graveyard of about 30 m long and about 27 m wide and is not surrounded by a fence. It lies within the proposed underground mining area and is about 762 m west of proposed DTM project infrastructure and will not be directly affected by the mining development but could sustain secondary damage due to underground mining activities. The graves are orientated east to west (Figure 33-34).

GPS: 26°08'52.17"S 28°55'19.28"E

The headstones are made of natural stone, wood, metal plaques, granite and cement and the grave dressings are made of cement/concrete, natural stones, bricks, granite and gravel. Total number of graves is approximately 71. Two graves are 60 years and older, 17 graves are younger than 60 years and 52 unmarked graves were found. The oldest grave belongs to Jabolani Mahiangi – 18/01/1952 and the youngest grave is that of Anna Nxazi Makhubela – 24/10/2015.

The following legible information was noted:

Zondine Thembi Makhubela – 07/01/2012

Mngonelwa Robert Skosana – 12/11/1994

N/A – 20/12/1959



FIGURE 33: SOME OF THE GRAVES AT SITE NO. 11.



FIGURE 34: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 11.

Site no. 12:

This is a graveyard of about 10 m long and about 7 m wide and an old deteriorated fence surrounds the graves. It is located west of a residence. It lies within the proposed

development area about 343 m west of proposed DTM project infrastructure might be affected by the mining development. The graves are orientated east to west (Figure 35-36).

GPS: 26°08'39.34"S 28°55'30.93"E

The headstones are made of granite and the grave dressings are made of granite and gravel. The total number of graves is two. One grave is 60 years and older, one grave is younger than 60 years and no unmarked graves were found. The oldest grave belongs to Catharina Petronella Pieterse – 03/08/1950 and the youngest grave is that of Lukas Johannes Pieterse – 04/08/1978.



FIGURE 35: ONE OF THE GRAVES AT SITE NO. 12.



FIGURE 36: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 12.

Site no. 13:

This is a graveyard of about 43 m long and about 9 m wide and fences use to surround some of the graves, but now only the corner poles remain. It is located west of a residence. It lies within the proposed development area about 200 m west of proposed DTM project infrastructure might be affected by the mining development. The graves are orientated east to west (Figure 37-38).

GPS: 26°08'10.11"S 28°55'20.28"E

The headstones are made of granite and cement and the grave dressings are made of cement/concrete, natural stones, granite and gravel. The total number of graves is approximately 23. One grave is 60 years and older, 6 graves are younger than 60 years and 16 unmarked graves were found. The oldest grave belongs to Owa Mawa Molife – 05/11/1929 and the youngest grave is that of Pual Hlabangoma Mabaso – 27/06/1998.

The following legible information was noted:

Joyizefu Menlu Masatlau – 19/10/1962

Rejuwesa Salomon Tlou – 14/09/1966

Rosian Gomo – 07/07/1991

Annah Martha Kabini – 20/03/1982



FIGURE 37: SOME OF THE GRAVES AT SITE NO. 13.



FIGURE 38: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 13.

Site no. 14:

This is a graveyard of about 10 m long and about 8 m wide with no fence. It lies within the proposed underground mining area and is about 210 m southeast of proposed development area and will not be directly affected by the mining development but could sustain secondary damage due to underground mining activities. The most graves are orientated east to west and two graves are orientated north to south. Grave goods are sparsely distributed among the graves (Figure 39-40).

GPS: 26°08'01.45"S 28°55'58.46"E

The headstones are made of granite and cement and the grave dressings are made of cement/concrete, natural stones and granite. The total number of graves is approximately 12. No graves are 60 years and older, two graves are younger than 60 years and 10 unmarked graves were found. The oldest grave belongs to Lucas J Mtimunye 29/09/1990 and the youngest grave is that of Finyasimasn lyani 26/11/1996.



FIGURE 39: SOME OF THE GRAVES AT SITE NO. 14.



FIGURE 40: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 14.

Site no. 15:

This is a graveyard of about 14 m long and about 11 m wide and with no surrounding fence, but a fence does separate it from the road directly to the west. The graves lie within the proposed development area and directly in the path of the proposed DTM project infrastructure. It could thus be affected negatively. This mine however indicated that they will only use the existing road here. The graves are orientated east to west. Grave goods are sparsely distributed among the graves (Figure 41-42).

GPS: 26°07'50.11"S 28°55'18.53"E

The headstones are made of natural rock, granite and cement and the grave dressings are made of cement/concrete, natural stones, rooftiles, granite and gravel. Total number of graves is approximately 11. No graves are 60 years and older, 4 graves are younger than 60 years and 7 unmarked graves were found. The oldest grave belongs to Adam Kabine – 16/05/1977 and the youngest grave is that of Emily Welleminah Kabini – 26/01/2006.

The following legible information was noted:

Fifi Pertos Msiza – -/-/1989

Thembi Johannh Kabini – 11/09/2005

Pitrosi Kabini – N/A



FIGURE 41: SOME OF THE GRAVES AT SITE NO. 15.



FIGURE 42: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 15.

Site no. 16:

This is a single grave in an open field with no fence. It lies right next to a dirt road. The grave is within the proposed underground mining area and is about 1,5 km southwest of proposed mining development and will not be directly affected but could sustain secondary damage due to underground mining activities. The grave is orientated east to west (Figure 43).

GPS: 26°10'16.48"S 28°54'03.03"E

The headstone is made of cement and no grave dressing was observed. Only one unmarked grave was found.



FIGURE 43: VIEW OF GRAVE AT SITE NO. 16.

Site no. 17:

Graves and historic structures area located on Site no. 17. The graves will be discussed here. Please refer to section 9.2, where the structures have been discussed. The graveyard of Site no.17 is about 23 m long and about 14 m wide and with no surrounding fence. The graves lie within the proposed underground mining area and is about 1 km southwest of proposed mining development and will not be directly affected but could sustain secondary damage due to underground mining activities. A grave seems to have sustained damage. The graves are orientated east to west. Grave goods are sparsely distributed among the graves (Figure 44-46).

GPS: 26°09'55.36"S 28°54'04.22"E

The headstones are made of granite and cement and the grave dressings are made of cement/concrete, natural stones, granite and gravel. The total number of graves is approximately 50. Two graves are 60 years and older, 20 graves are younger than 60 years and 28 unmarked graves were found. The oldest grave belongs to Poulos Mstweni – 14/05/1949 and the youngest grave is that of Betty Maria Masangu – 22/03/2001.

The following legible information was noted:

Lettie Ngwenya – 15/07/1986

Anah Mahiangu – N/A

Jan Masi – 02/10/1979

Annah Fuduka Mashela – 05/03/1991



FIGURE 44: SOME OF THE GRAVES AT SITE NO. 17.



FIGURE 45: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 17.



FIGURE 46: DAMAGED/COLLAPSED GRAVE AT SITE NO. 17.

Site no. 18:

This is a graveyard of about 65 m long and about 25 m wide and is surrounded by a fence. The graves lie within the proposed underground mining area and are about 1 km southwest of proposed mining development and will not be directly affected but could sustain secondary damage due to sinkholes. The graves are orientated east to west. Grave goods are sparsely distributed among the graves (Figure 47-48).

GPS: 26°09'48.12"S 28°54'03.95"E

The headstones are made of granite, natural stone and cement and the grave dressings are made of cement/concrete, natural stones and gravel. The total number of graves is approximately 43. Two graves are 60 years and older, 8 graves are younger than 60 years and 34 unmarked graves were found. The oldest grave has no name – -/09/1941 and the youngest grave is that Fanyana Amos Ntuli – 11/09/2002.

The following legible information was noted:

Ellie Ntuli – 15/10/1994

Michak Jonas Milgune – 03/04/1980



FIGURE 47: SOME OF THE GRAVES AND GRAVE GOODS AT SITE NO. 18.



FIGURE 48: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 18.

Site no. 19:

This is a graveyard of about 20 m long and about 13 m wide. Two graves are fenced off, but the larger gravesite has no fence. The graves lie within the proposed underground mining area and is about 2 km west of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving. The graves are orientated east to west (Figure 49-50).

GPS: 26°09'10.05"S 28°53'23.46"E

The headstones are made of granite, natural stone and cement and the grave dressings are made of cement/concrete, natural stones, granite and gravel. The total number of graves is approximately 46. One grave is 60 years and older, 9 graves are younger than 60 years and 36 unmarked graves were found. The oldest grave belongs to Maria – -/1950 and the youngest grave is that of Berry Dhlomo – 08/08/1997.

The following legible information was noted:

George Mpiyakhe – 10/08/1968

Evelien Nonhlungu Nune – 08/07/1980

Anna Hluphe Mcube – 07/06/1993

Mpyake Diomo Wazaiwa – 06/07/1993



FIGURE 49: SOME OF THE GRAVES AT SITE NO. 19.



FIGURE 50: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 19.

Site no. 21:

This is a graveyard of about 67 m long and about 22 m wide. The gravesite is not fenced off and is in the middle of an agricultural field. The graves lie within the proposed underground mining area and is about 2,3 km west of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving. The graves are orientated east to west (Figure 51-52).

GPS: 26°07'58.47"S 28°53'07.67"E

The headstones are made of granite, natural stone and cement and the grave dressings are made of cement/concrete, natural stones and gravel. Total number of graves is approximately 128. 5 graves are 60 years and older, 17 graves are younger than 60 years and 106 unmarked graves were found. The oldest grave belongs to Elizabeth Masuku – 13/021943 and the youngest grave is that of Nongosa Nsizo – 08/11/1980.

The following legible information was noted:

John Masuku – 10/071978

Mafongo Laziros Masilela – 12/101969

Mrhonyelwa Simon Mahlangu – 22/07/1952



FIGURE 51: SOME OF THE GRAVES AT SITE NO. 21.



FIGURE 52: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 21.

Site no. 22:

This is a graveyard of about 8 m long and about 4 m wide. A fence used to surround the graves, but now only the corner poles remain and is in the middle of an agricultural field. The graves lie within the proposed underground mining area and is about 4 km north-northwest of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving. The graves are orientated east to west (Figure 53-54).

GPS: 26°06'08.63" S 28°52'52.75" E

The headstones are made of granite and cement and the grave dressings are made of cement/concrete, natural stones, granite and gravel. The total number of graves is approximately 4. No graves are 60 years and older, no graves are younger than 60 years and 4 unmarked graves were found.

The following legible information was noted:

Kleinbooi Mogonyelwa Mthimunye – N/A

Ana Makhoba Mthimunye – N/A



FIGURE 53: SOME OF THE GRAVES AT SITE NO. 22.



FIGURE 54: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 22.

Site no. 24:

This is a graveyard of about 17 m long and about 11 m wide on an open patch of land with a fence use to surround the graves, but now only the corner poles remain. It lies

40 m north, outside the studied area and will not be directly affected by the mining development but could sustain secondary damage due to incaving. The graves are orientated east to west. Grave good are sparsely distributed among the graves (Figure 55-56).

GPS: 26°04'24.52" S 28°52'52.58" E

The headstones are made of granite and cement and the grave dressings are made of natural stones, brick, granite, cement/concrete and gravel. The total number of graves is approximately 25. One grave is 60 years and older, 7 graves are younger than 60 years and 17 unmarked graves were found. The oldest grave belongs to Charles Jigane – -/-/1948 and the youngest grave is that of Dansile Mokoena – 17/06/1993.

The following legible information was noted:

Linah Mbonani Washona Nogomhlaka – 08/09/1976

Zibain Petros Mtesweni – 15/12/1977

Jan Mtesweni – 30/03/1977



FIGURE 55: SOME OF THE GRAVES AT SITE NO. 24.



FIGURE 56: GENERAL VIEW AT THE GRAVEYARD AT SITE NO. 24.

Site no. 25:

This is a gravesite with graves located on an open patch of land next to a dirt road and agricultural field, surrounded by a fence. The graves lie within the proposed underground mining area and is about 660 m south-southwest of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving. The graves are orientated east to west (Figure 57-58).

GPS: 26°09'59.20" S 28°54'34.70" E

The headstones are made of cement and the grave dressings are made of natural stones. The total number of graves is approximately 2. No graves are 60 years and older, no graves are younger than 60 years and 2 unmarked graves were found.

The following legible information was noted:

Mariya – N/A

Meriyam Mbonghi – N/A



FIGURE 57: ONE OF THE GRAVES AT SITE NO. 25.



FIGURE 58: GENERAL VIEW AT THE GRAVES AT SITE NO. 25.

9.2 Historic Structures - Sites no. - 4, 5, 8, 17, 20, 23

Cultural significance Table: Site no. 4, 5, 8, 17, 20, 23

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Neglible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	Low
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	N	
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	Low
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	Low
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or	N	

technical achievement at a particular period		
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	Low
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		Low

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

= **Low** (2)x 2

= 4

The site therefore receives a field rating of Local Grade III C. It means that the site description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorization.

Site 4:

This is a farmyard of about 136 m long and about 27 m wide and lies east of a dirt road. The farmyard about 120 m north, outside of the study area. There is a total of 5 structures and 5 middens (Figure 59-61).

GPS: 26°08'19.72"S 28°57'14.75"E

Materials of structures: cement/concrete, bricks and mudbricks.

Structure 1 is 15 m long and 8 m wide and had 4 rooms.

Structure 2 is 8 m long and 4 m wide and had 2 rooms.

Structure 3 is 2 m long and 2 m wide and had 1 rooms.

Structure 4 is 13 m long and 8 m wide and had 2 rooms.

Structure 5 is 4 m long and 4 m wide and had 2 rooms.

Structure 6 is 9 m long and 8 m wide and had 4 rooms.

Midden 1 is 5 m long and 5 m wide.

Midden 2 is 3 m long and 2 m wide.

Midden 3 is 5 m long and 3 m wide.

Midden 4 is 12 m long and 8 m wide.

Midden 5 is 3 m long and 2 m wide.



FIGURE 59: SOME OF THE STRUCTURES AT SITE NO. 4.



FIGURE 60: MIDDENS AT SITE NO. 4



FIGURE 61: GENERAL VIEW AT THE FARMYARD AT SITE NO. 4.

Site 5:

This is a farmhouse and has a newer exterior, but the core of structure is older than 60 years. The farmhouse is constructed out of bricks, mortar and has a corrugated iron roof. The farmhouse lies within the proposed underground mining area and caving in of soil may lead to secondary impact (Figure 62).



FIGURE 62: GENERAL VIEW OF THE FARMHOUSE AT SITE NO. 5.

GPS: 26°10'06.73"S 28°56'52.70"E

Site 8:

This is a farmhouse and has a newer exterior, but the core of structure is older than 60 years. The farmhouse is constructed out of bricks, mortar and has a corrugated iron roof. The farmhouse lies within the proposed development area about 80 m north of proposed DTM project infrastructure and might be affected by the mining development. (Figure 63).

GPS: 26°10'49.34"S 28°56'07.72"E



FIGURE 63: GENERAL VIEW OF THE FARMHOUSE AT SITE NO. 8.

Site 17:

Graves and historic structures area located on Site no. 17. The structures will be discussed here. Please refer to section 9.1, where the graves have been discussed. This is a farmyard of about 30 m long and about 20 m wide and lies within the proposed underground mining area and is about 1 km southwest of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving. There is a total of 2 structures (Figure 64-65).

GPS: 26°09'55.36"S 28°54'04.22"E



FIGURE 64: SOME OF THE STRUCTURES AT SITE NO. 17.



FIGURE 65: GENERAL VIEW AT THE FARMYARD AT SITE NO. 17.

Materials of structures: clay, bricks and mudbricks.

Structure 1 is 11 m long and 9 m wide and had 4 rooms.
Structure 2 is 8 m long and 3 m wide and had 2 rooms.

Site 20:

This is a single structure in an open field, north of a dirt road. The structure lies within the proposed underground mining area and is about 2 km west of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving (Figure 66).

GPS: 26°09'08.42"S 28°53'25.88"E



FIGURE 66: GENERAL VIEW AT THE STRUCTURE AT SITE NO. 20.

Materials of structures: clay and mudbricks.
Structure 1 is 7 m long and 6 m wide and had 1 room.

Site 23:

This is a single stone kraal and is about 47 m long and 25 m wide and is located within the proposed underground mining area and is about 4,6 km north-northwest of proposed mining development and will not be directly affected but could sustain secondary damage due to incaving (Figure 67).

GPS: 26°06'17.24"S 28°52'11.31"E



FIGURE 67: GENERAL VIEW AT THE STONE KRAAL AT SITE NO. 23

10. CONCLUSION AND RECOMMENDATIONS

The survey of the Zibulo North Shaft Expansion Project Area was completed successfully. As indicated, twenty-five site of cultural heritage significance was identified (Figure 68-71).

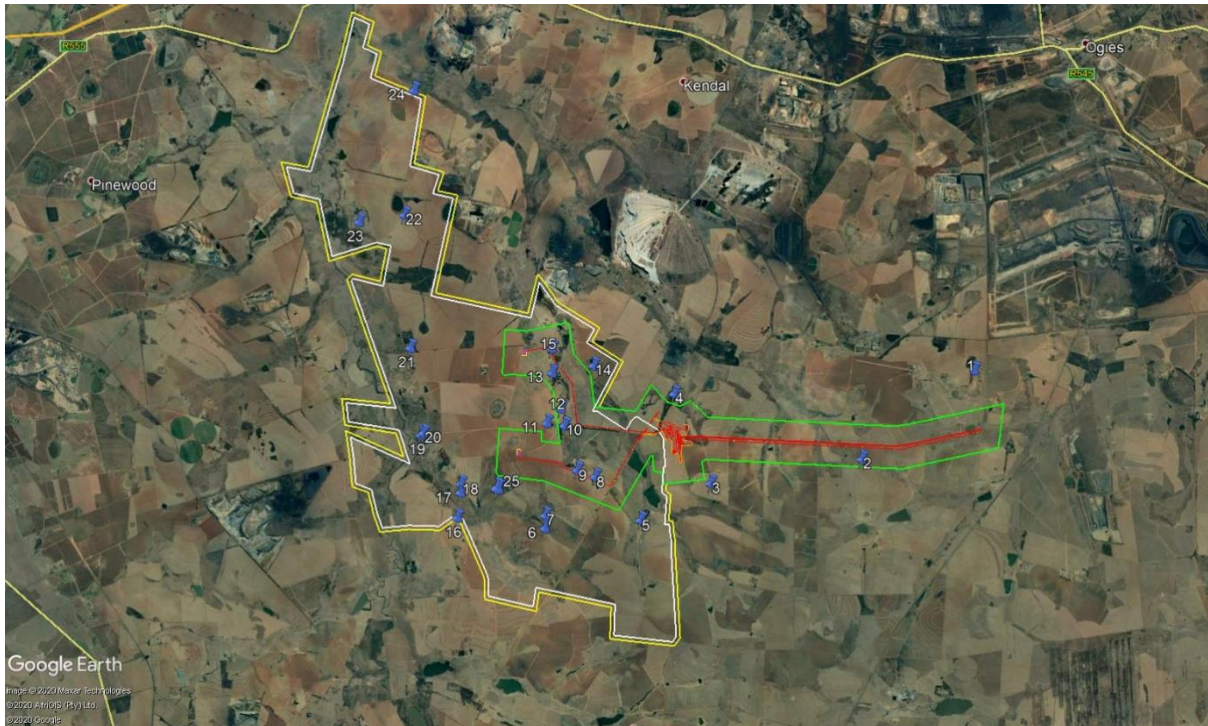


FIGURE 68: GOOGLE EARTH IMAGE INDICATING ALL SITES IDENTIFIED DURING THE SURVEY.



FIGURE 69: INDICATION OF THE LOCATION OF IDENTIFIED SITES IN RELATION TO THE AREA WHERE INFRASTRUCTURE IS PROPOSED.

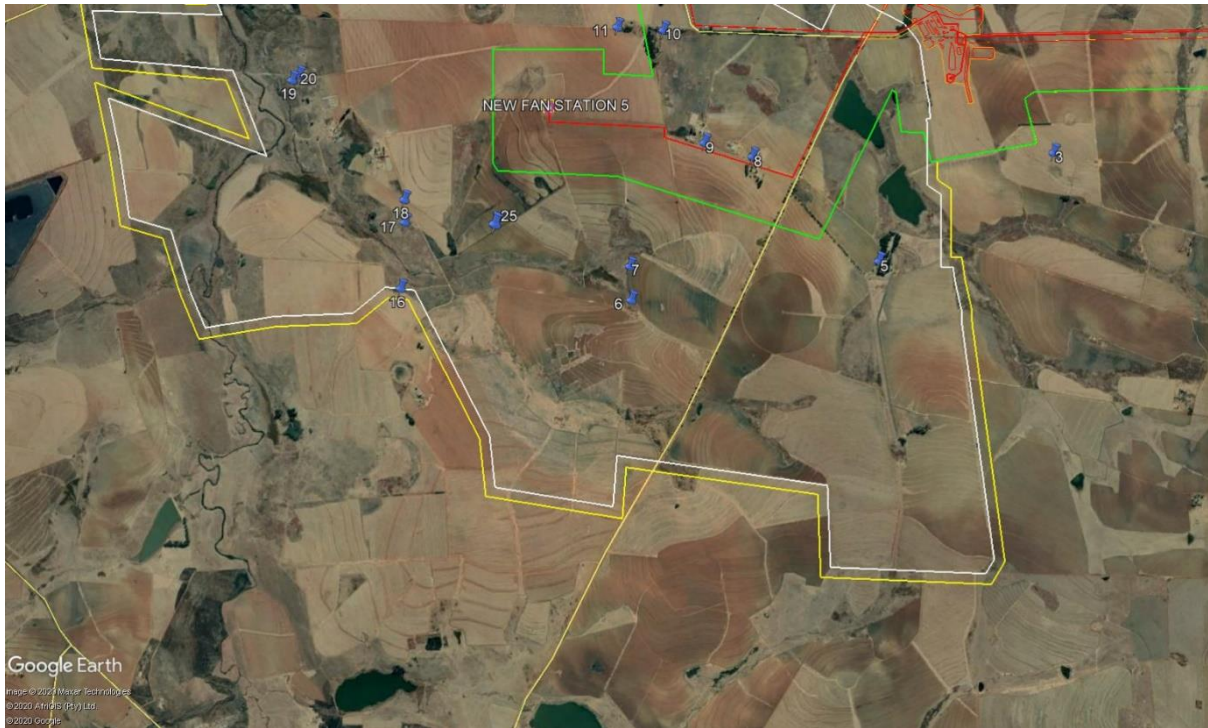


FIGURE 70: INDICATION OF THE LOCATION OF IDENTIFIED SITES IN THE SOUTH-WESTERN PART OF THE MINING AREA.



FIGURE 71: INDICATION OF THE LOCATION OF IDENTIFIED SITES IN THE NORTH-WESTERN PART OF THE MINING AREA.

The following is recommended:

- Nineteen of the identified sites are graves and graveyards, namely: number 1, 2, 3, 6, 7, 9-16, 18-19, 21, 22, 24 and 25 with site no, 17 also having graves together with farm buildings. These are always of high heritage significance. There are two ways of dealing with graves.
 - The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the mine.
 - The second option is to exhume and relocate the mortal remains. This usually is done when the graves are in the area to be directly affected by the mining activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist are needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy. Since the graveyard is outside of the area of direct development, and already fence in, it should remain as such.
- One grave site, site number 15 is in danger of being directly impacted by the development. However, the mine has indicated that they would rather make use of current infrastructure in order to avoid Option 2. Therefore Option 1 is also recommended here, but the mine needs to ensure that the site remain unaffected. If impossible, Option 2 will have to be implemented.
- Five grave sites, site numbers 2, 9, 10, 12, 13 is in the development area and may be impacted by issues like dust and blasting. Thus Option 1 is recommended. The drafting of a cultural heritage management plan (CMP) is of extremely importance to ensure the sustainable protection of the graves.
- Ten grave sites, site numbers 6, 7, 11, 14, 16, 17, 18, 19, 21, 22 and 25 is in the larger underground mining area. It is advisable to also implement Option 1 to prevent any damage and minimize the chance for future claims for compensation due to damage to the graves. The mine also needs to ensure that mining does not lead to collapsing or incaving of the graves.
- Three graves sites, site numbers 1, 3 and 24 is located outside the study area. These may be excluded from mitigation measures.
- All other sites, i.e. farmyards and historical structures (site 4, 5, 8, 17, 20 and 23) are of low heritage significance. The description in this phase 1 heritage report is seen as sufficient recording and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application,

subjected to the granting of Environmental Authorization. It may also be left *in situ* to deteriorate naturally. The latter is rather recommended as the sites falls outside of the area of direct impact.

- Only after implementation of the above mitigation measures and upon receiving the necessary comments from the heritage authority, the proposed development may continue.
- 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.
- In This regards the following 'Chance find Procedure' should be followed:
 1. Upon finding any archaeological or historical material all work at the affected area must cease.
 2. The area should be demarcated in order to prevent any further work there until an investigation has been completed.
 3. An archaeologist should be contacted immediately to provide advice on the matter.
 4. Should it be a minor issue, the archaeologist will decide on future action, which could include adapting the HIA or not. Depending on the nature of the find, it may include a site visit.
 5. SAHRA's APM Unit may also be notified.
 6. If needed, the necessary permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.
 7. 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.
 8. Work on site will only continue after removal of the archaeological/ historical material was done.

11. 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.
- 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:

- Negligible – The site has no heritage significance, although it may be older than 60 years.
- Low - A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings. A site with minimal importance which is decreased by its bad state of decay.
- Low-Medium - A site of lesser importance, which is increased by a good state of preservation and contextual importance (e.g. a specific community).
- 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.
- Medium-High - A site that has high importance due to its age or uniqueness, but which decreases due to its bad state of decay.
- High - Any site, structure or feature regarded as important because of its age or uniqueness. Also any important object found within a specific context.
- Very High - A site of exceptional importance due to its age, uniqueness and good state of preservation.

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: The site should be managed as part of the national estate, should be nominated as Grad I site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score above 50.

Provincial Grade II significance: The site should be managed as part of the provincial estate, should be nominated as Grade II site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 40 and 50.

Local Grade IIIA: The site should be included in the heritage register and not be mitigated (high significance), should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 37 and 40.

Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority. Score between 6 and 36.

Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation. Score below 5.

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.