



Archaetnos Culture & Cultural  
Resource Consultants  
BK 98 09854/23

---

**A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE EXXARRO  
LEEUPAN COAL CONSOLIDATION OF EMPR'S, CLOSE TO DELMAS IN THE  
MPUMALANGA PROVINCE**

For:

**GCS  
PO Box 2597  
Rivonia  
2128**

*GCS project no.: 11-447*

**REPORT: AE01217V**

By:

***Dr. A.C. van Vollenhoven (L. Akad. S.A.)***

Accredited member of ASAPA  
Professional member of SASCH

***April 2012***

Archaetnos  
P.O. Box 55  
GROENKLOOF  
0027  
Tel: **083 2916104**  
Fax: 086 520 4173  
E-mail: antonv@archaetnos.co.za

Members: AC van Vollenhoven BA, BA (Hons), DTO, NDM, MA (Archaeology) [UP], MA (Culture History) [US], DPhil (Archaeology) [UP], Man Dip [TUT], DPhil (History) [US]  
AJ Pelsers BA (UNISA), BA (Hons) (Archaeology), MA (Archaeology) [WITS]

**©Copyright**

**Archaetnos**

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

**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.**

**The South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report and clients are advised not to proceed with any action before receiving these. It is the responsibility of the client to submit this report to the relevant heritage authority.**

## SUMMARY

Archaetnos cc was appointed by GCS to conduct a heritage study for the proposed consolidation of EMPR's at the Exxarro Leeuwpan Coal mine. This is located close to Delmas in the Mpumalanga Province.

The fieldwork undertaken revealed six sites of cultural heritage significance. Sites identified during previous surveys and by mine personnel are however also included briefly since this is a consolidation of information. This brings the total number of sites to seventeen. These are discussed in the report.

**Most of the sites will be directly impacted on by the development, while others will only be secondary impacted on. As a result the proposed mitigation measures are keeping this in mind. The developer also needs to take note that all archaeological and historical sites may not have been identified. It also is possible that subterranean archaeological sites may be found later on. On identification of these it needs to be dealt with by an archaeologist.**

## CONTENTS

|  | Page |
|--|------|
| SUMMARY.....   | 3    |
| CONTENTS .....   | 4    |
| 1. INTRODUCTION.....   | 5    |
| 2. TERMS OF REFERENCE .....  | 5    |
| 3. CONDITIONS AND ASSUMPTIONS .....  | 5    |
| 4. LEGISLATIVE REQUIREMENTS .....  | 6    |
| 5. METHODOLOGY .....   | 9    |
| 6. DESCRIPTION OF THE AREA .....   | 10   |
| 7. HISTORICAL CONTEXT (BASELINE INFORMATION) .....   | 14   |
| 8. DISCUSSION OF SITES FOUND DURING THE SURVEY .....   | 16   |
| 9. CONCLUSIONS.....  | 27   |
| 10.POTENTIAL IMPACT, RECOMMENDATIONS, POTENTIAL<br>MANAGEMENT MEASURES AND ACTION PLAN ..... | 28   |
| 11.REFERENCES.....   | 31   |
| APPENDIX A – DEFENITION OF TERMS .....   | 32   |
| APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE .....                                     | 33   |
| APPENDIX C – SIGNIFICANCE AND FIELD RATING.....  | 34   |
| APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....   | 35   |
| APPENDIX E – HERITAGE MANAGEMENT IMPACT<br>ASSESSMENT PHASES .....                           | 36   |

## **1. INTRODUCTION**

Archaetnos cc was appointed by GCS to conduct a cultural heritage impact assessment (HIA) study for the consolidation of EMPR's relating to the Leeuwpan Coal Mine. The mine is situated 8 km to the east of the town of Delmas in the Mpumalanga Province.

The client indicated the area where the proposed development is to take place. The field survey was confined to this area.

## **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. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
4. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
5. Review applicable legislative requirements.
6. Study existing heritage reports on the area.

## **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. In this particular case the area was very large and mountainous making it possible that certain areas may not have been surveyed fully. The vegetation cover in certain areas also is very dense making archaeological visibility difficult.
7. Since this is a pre-feasibility study and information relating to the infrastructure of the mine is not available, it is not possible to give mitigation measures. However the importance of sites is indicated and possible mitigation measures are envisaged.

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

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

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

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

- a. Archaeological 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 palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, 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. The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

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

### **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 palaeontological site or any meteorite;

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

#### **5.1 Survey of literature**

A survey of literature was undertaken in order to obtain background information regarding the area. This included previous heritage reports from the area. Sources consulted in this regard are indicated in the bibliography.

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

#### **5.3 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.

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

---

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

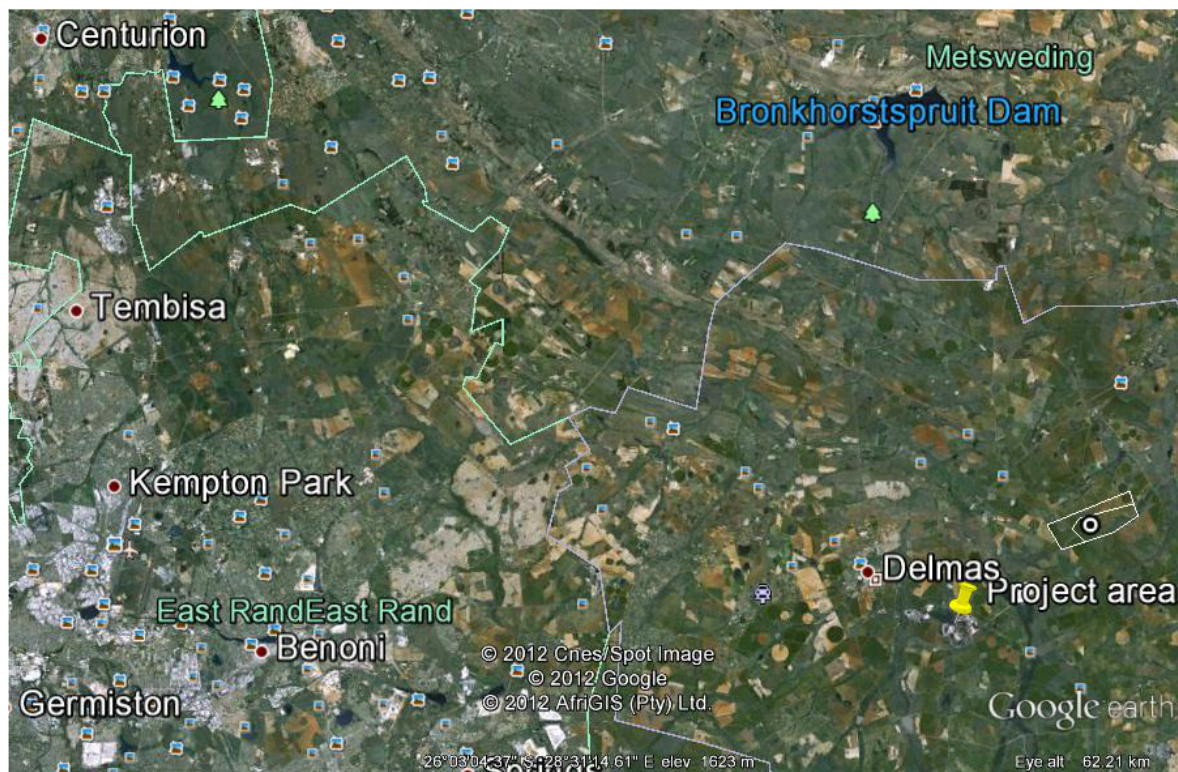
## 5.5 Evaluation of Heritage sites

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

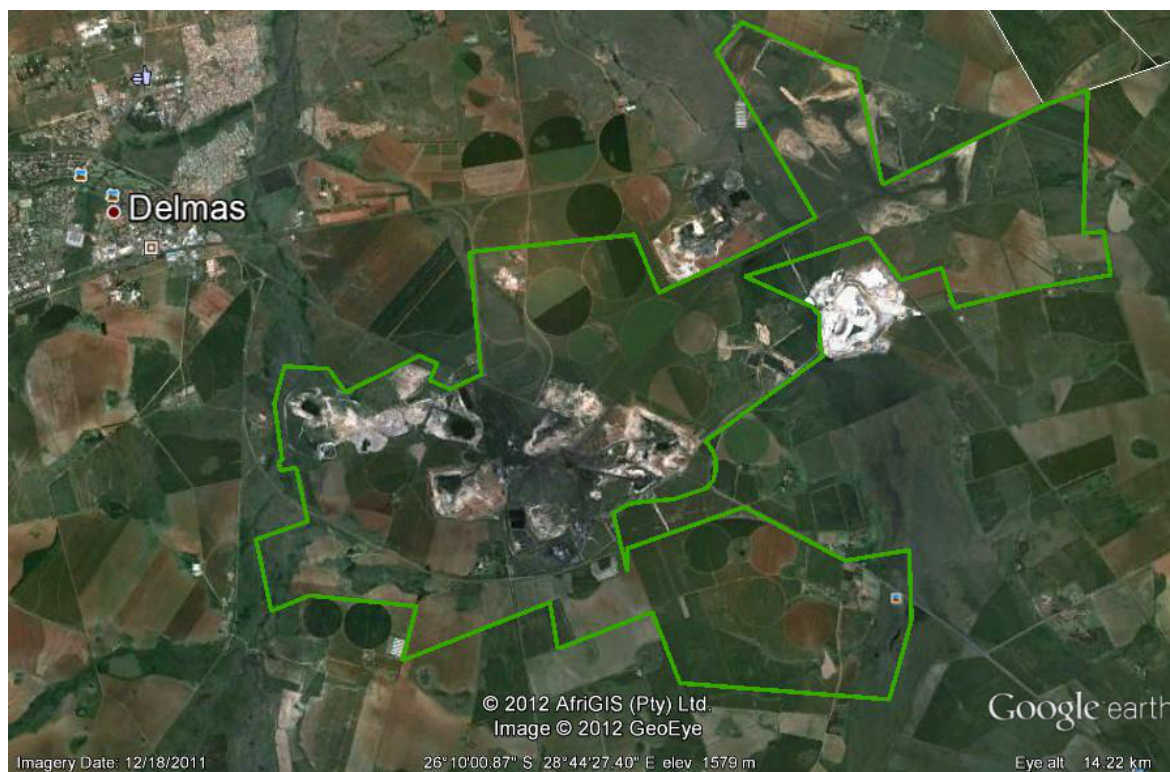
- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)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

## 6. DESCRIPTION OF THE AREA

The area that was surveyed is situated approximately 8 km to the east of the town of Delmas in the Mpumalanga Province. It comprises different portions of a number of farms, being Leeuwpan 246 IR, Moabsvelden 248 IR, Rietkuil 249 IR, Kenbar 257 IR, Goedgedacht 226 IR and Wolvenfontein 244 IR (Figure 1-2).



**Figure 1 Location of the project area.**



**Figure 2 Google image indicating the site boundaries. It is clear from this image that the area has been disturbed to a large extent.**

The environment of the area is mostly disturbed by recent mining (Figure 3-4). Areas that were not influenced by mining have been extensively disturbed by agricultural activities, mainly the planting of maize and soya beans (Figure 5-6). A few small areas do however show natural vegetation. These were very during the time that the survey was undertaken, making archaeological visibility very difficult.

The natural topography in most of the surveyed area is reasonably flat with slight falls close to water courses. The drainage line of some of these have however been adapted by mining activities.



**Figure 3 General view of the surveyed area showing mining activities and pioneer plant species.**



**Figure 4 Another view of mining activities within the surveyed area.**



**Figure 5 View of maize fields in the surveyed area.**



**Figure 6 Soya beans field in the surveyed area.**

## **7. HISTORICAL CONTEXT (BASELINE INFORMATION)**

During the survey six sites of cultural heritage significance was located in the mining area. Some of these were found during previous surveys on different portions of the mine (see Van Schalkwyk 2006 and Pistorius 2007). Other sites identified by them are also included in the final map (Figure 12?) in order to consolidate the information on heritage resources in the area.

However, there always is a possibility that more sites may become known later and that those need to be dealt with in accordance with the legislation discussed above. In order to enable the reader to better understand archaeological and cultural features, it is necessary to give a background regarding the different phases of human history.

### **7.1 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 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 no such sites are indicated here.

The closest Stone Age occurrence found to the Delmas area is the Late Stone Age site at Fort Troje, close to Cullinan (Bergh 1999: 4). This probably only indicates a lack of research as the area definitely is suitable for human occupation.

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 and there are plenty natural water sources. One may therefore find small sites or occasional stone tools.

### **7.1 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.

Bergh (1999: 7) does indicate that Late Iron Age sites have been identified in the Delmas area, but gives no additional detail. Other known Iron Age occurrences to the surveyed area are Late Iron Age sites that have been identified to the west of Bronkhorstspuit and in the vicinity of Bethal (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: 7-8).

During the Difaquane (1832) the Zulu moved through this area in order to attack the Ndebele (Bergh 1999: 11). This indicates that Iron Age people probably utilized this environment in the past.

The good grazing and access water in the area would have provided a good environment for Iron Age people although building material seem to be reasonably scarce. However the area has been changed by recent human interventions such as farming and mining and such sites may therefore have been destroyed.

## **7.2 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.

The first early traveler who visited this area was Robert Scoon who passed through during 1836. In 1847 Dr David Livingstone also visited the area during his travels. The parties of the Voortrekkers Louis Tregardt and Hans van Rensburg also moved through here during 1836 (Bergh 1999: 13-14). White farmers only settled in the study area between 1841 and 1850 (Bergh 1999: 15).

Delmas was laid out in 1907 on the farm Witklip ('white stone') which was divided into 192 residential stands, 48 smallholdings of 4 ha each and a commonage of 138ha. The farm belonged to Frank Dumat who originated from France where his grandfather had a small farm. He named the town Delmas which is derived from 'mas' which means a small farm in a southern dialect of French. In 1909 the government added another 5 500 ha to Frank Dumat's original rural settlement (Pistorius 2007: 18).

One may therefore expect sites associated with the first white farmers. However again the interventions mentioned earlier may already have destroyed such sites. Such a building complex was identified by Pistorius (2007: 29-30) as well as some houses (Pistorius 2007: 31-33).

Many grave sites, dating from the last 100 years, have however been found on neighbouring farms (Archaetnos' database). One can therefore expect to also find such graves here. During an assessment in 2006, Van Schalkwyk indeed identified two grave sites on the farm Moabsvelden (Van Schalkwyk 2006: 16). In 2007 Pistorius found five graveyards. One of these was next to the R555, one on the farm Moabsvelden and two on the farm Rietkuil whereas the location of the fifth site is indicated in a blue gum plantation (Pistorius 2007: 24-28).

## 8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

### 8.1 Site 1

This is a large grave yard found in close proximity to a blue gum plantation. It consists of at least 63 graves (Figure 7). Pistorius counted more than 50 here. The graves have all kinds of grave dressings or borders and headstones – cement, stone, brick and granite.



**Figure 7 Some of the graves at site no. 1.**

Many of the graves have no legible information meaning that it has an unknown date of death. Those with dates seem to range between 1972 and 2005. Some of the surnames identified include Mtsweni, Sithole, Masilela, Mabena and Kgomo.



GPS: 26°11.426'S

28°46.301'E – this is the same site as grave site no. 04 found by Pistorius.

Graves always are regarded as having a **high** cultural significance. In this case there are three categories of graves being those older than 60 years, those younger than 60 years and those of an unknown date. These graves are of a local significance and are therefore given a 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.

## 8.2 Site 2

This is another grave found within a maize field and fairly close to the first one. In fact, it is so close with only a farm road in between that one gets the impression it may have been one site and that some graves may be underneath the road. It consists of at least 6 graves, although Pistorius counted at least 20 (Figure 8).

Some of the graves have cement borders and headstones. One has a brick border and two of them have a metal fence around them. Two of the graves have no information meaning that it has an unknown date of death. The others range between 1968 and 2003. Surnames identified include Mahlangu and Mabena.

GPS: 26°11.453'S

28°46.272'E – this is the site found by Pistorius and numbered no. 05.

Graves always are regarded as having a **high** cultural significance. In this case there is one of the categories of graves being those of an unknown date. These graves are of a local significance and are therefore given a 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.



**Figure 8 Graves at site no. 2.**

### **8.3 Site 3**

This site is a very large grave yard consisting of at least 99 graves (Figure 9). They have all types of dressings and headstones – granite, cement, stone and brick. Some do not have headstones.

The dates of death seem to range between 1947 and 1973 while some are unknown. All three categories of graves therefore are present. Surnames identified include Mabena, Ngoma, Ndlophu, Mzizi and Malaza.

GPS: 26°10.815'S  
28°42.251'E – the site is just outside of the border of the mine.

Graves always are regarded as having a **high** cultural significance. In this case there is only one category of graves being those of an unknown date. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.



**Figure 9 Some of the graves at site no. 3.**

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.

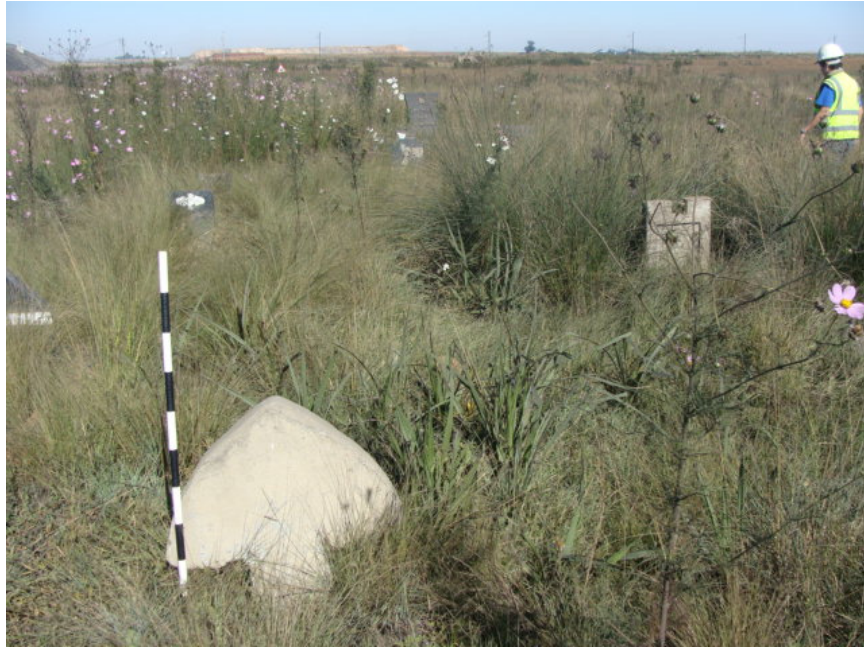
The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves 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.

#### **8.4 Site 4**

Site 4 is another grave yard. This one consists of at least 90 graves (Figure 10). There are three kinds of dressings or borders and headstones being granite, stone or cement. Not all the graves have legible information making it unknown.

The dates seem to range between 1972 and 2004. Surnames identified include Ngomalwa, Mapos and Mahlangu.

GPS: 26°08.665'S  
28°46.466'E



**Figure 10 Some of the graves at site no. 4.**

Graves always are regarded as having a **high** cultural significance. In this case all three categories of graves were identified. These graves are of a local significance and are therefore given a 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.

### **8.5 Site 5**

Site 5 is another grave yard. This one consists of at least 31 graves (Figure 11). Van Schalkwyk counted more than 30. There are two kinds of dressings or borders and headstones being stone or cement. Most of the graves are unknown and does not even have headstones.

The dates seem to range between 1939 and 1940. Surnames identified include Makau, Diale and Mackau.

GPS: 26°09.722'S  
28°45.732'E – this is site no. 1 identified by Van Schalkwyk.



**Figure 11 Some of the graves at site no. 5.**

Graves always are regarded as having a **high** cultural significance. In this case all three categories of graves were identified. These graves are of a local significance and are therefore given a 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.

### **8.6 Site 6**

Site 6 is also a grave yard. It consists of at least 20 graves (Figure 12). There are three kinds of dressings or borders and headstones being stone, brick or cement. Most of the graves are unknown and does not even have headstones.

Only one date was identified, being 1958. Surnames identified include Mbonau, Mbonani and Mulitana.

GPS: 26°08.286'S  
28°47.719'E



**Figure 12 Some of the graves at site no. 6.**

Graves always are regarded as having a **high** cultural significance. In this case all three categories of graves were identified. These graves are of a local significance and are therefore given a 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.

### **8.7 Site 7**

Site 7 is site no 2 from the report of Van Schalkwyk. It consists of 3 graves.

GPS: 26°09.833'S  
28°45.583'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### 8.8 Site 8

Site 8 is site no 01 from the report of Pistorius. It consists of more than 100 graves.

GPS: 26°07.958'S  
28°46.522'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### 8.9 Site 9

Site 9 is site no 02 from the report of Pistorius. It consists of more than 50 graves.

GPS: 26°08.667'S  
28°46.640'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### **8.10 Site 10**

Site 10 is site no 03 from the report of Pistorius. It consists of more than 50 graves.

GPS: 26°09.337'S  
28°47.121'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### **8.11 Site 11**

Site 11 was identified by personnel from the mine. The number of graves is unknown.

GPS: 26°07.920'S  
28°45.690'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### 8.12 Site 12

Site 12 was identified by personnel from the mine. The number of graves is unknown.

GPS: 26°11.062'S  
28°44.527'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

### 8.13 Site 13

Site 13 was identified by personnel from the mine. The numbers of graves are unknown.

GPS: 26°08.380'S  
28°47.865'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a 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.

#### **8.14 Site 14**

Site 14 was identified by Pistorius. It is a historical farm complex with at least three buildings older than 60 years.

GPS: 26°08.472'S  
28°47.333'E

The site has a **medium** cultural significance. It has a general local significance and is therefore given a rating of Grade B (IVB). It may therefore be mitigated. The structures may be demolished, but only it has been documented by a heritage expert.

#### **8.15 Site 15**

Site 15 was identified by Pistorius. It is a historical farm building older than 60 years.

GPS: 26°11.360'S  
28°46.382'E

The site has a **medium** cultural significance. It has a general local significance and is therefore given a rating of Grade B (IVB). It may therefore be mitigated. The structure may be demolished, but only it has been documented by a heritage expert.

#### **8.16 Site 16**

Site 16 was identified by Pistorius. It is two historical farm buildings older than 60 years.

GPS: 26°10.700'S  
28°42.947'E

The site has a **medium** cultural significance. It has a general local significance and is therefore given a rating of Grade B (IVB). It may therefore be mitigated. The structures may be demolished, but only it has been documented by a heritage expert.

#### **8.17 Site 17**

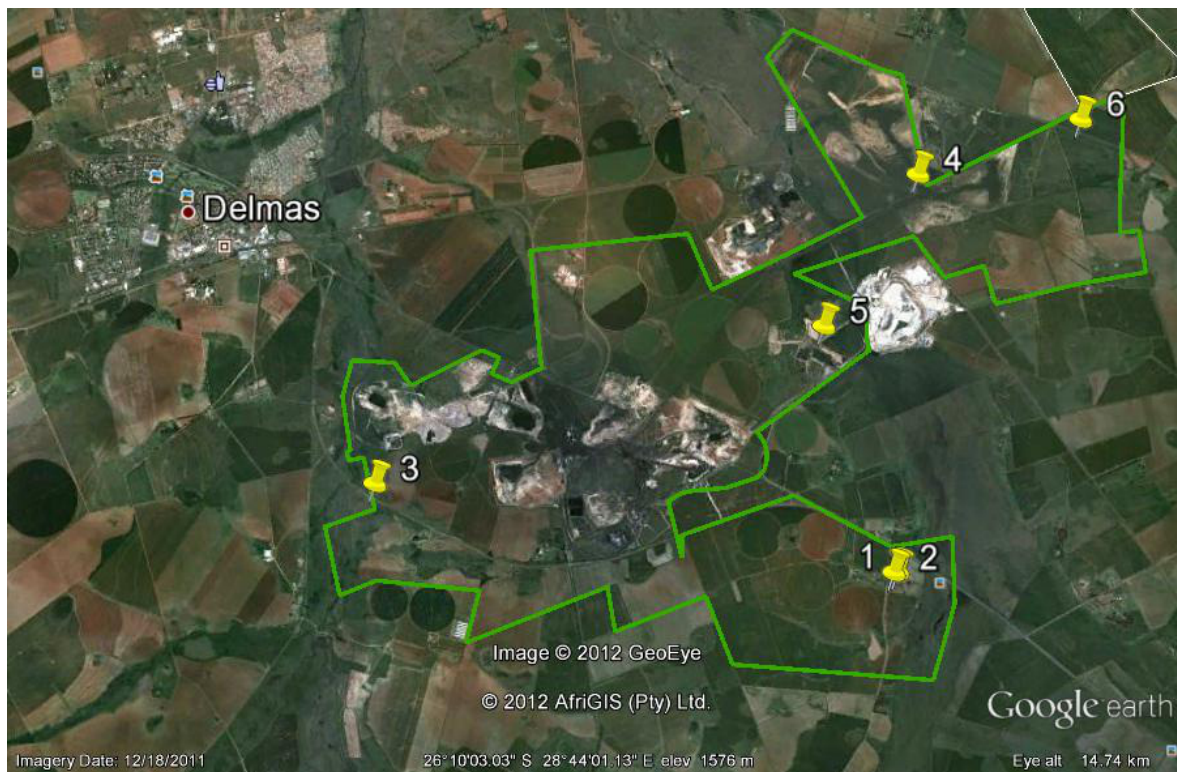
Site 17 was identified by Pistorius. It is a historical farm complex with buildings that may be just older than 60 years. It has however been changed recently.

GPS: 26°10.739'S  
28°42.957'E

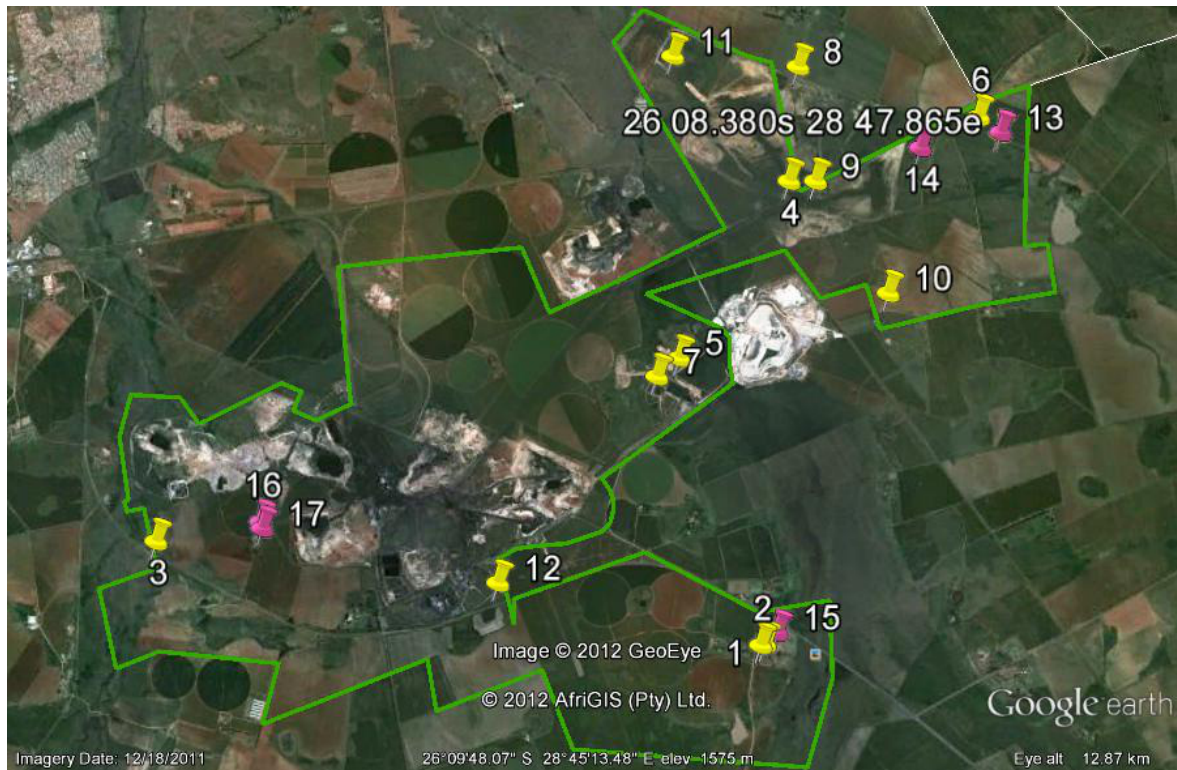
The site has a **low** cultural significance. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is therefore seen as ample mitigation. The structure may be demolished without any further mitigation.

## 9. CONCLUSIONS

It is concluded that the assessment of the area was conducted successfully. In the surveyed area seventeen sites (Figure 13-14) of cultural significance have been found. Thirteen of these are grave sites. The others are farm buildings.



**Figure 13 The six sites found during the current survey.**



**Figure 14 Google map indicating the seventeen sites located during various surveys. The yellow sites are graveyards and the pink ones historical buildings.**

## **10. POTENTIAL IMPACT, RECOMMENDATIONS, POTENTIAL MANAGEMENT MEASURES AND ACTION PLAN**

The final recommendations are as follows:

- It is currently unknown what the exact impact of the mine on the entire area is. However, looking at the areas that have been mined already the impact seems severe and therefore recommendations will be made with this in mind.
- Two of the graveyard sites are found just outside of the project area. These are numbers 3 and 8. Although it therefore falls outside of the mine's jurisdiction it should be noted that there are most likely to be a secondary impact on these. Things like blasting and dust may have a negative effect on these sites. It is therefore recommended that these be fenced in and a management plan written by a heritage expert. An important aspect of this plan would be the monitoring of the sites in order to preserve it.
- The other grave sites, being numbers 1, 2, 4, 5, 6, 7, 9, 10, 11, 12 and 13, are all within the mine boundary. Some of these, sites number 5, 7 and 12 are within the area already being mined and therefore there already is an impact. It is foreseen that the other will be impacted on in future.

- Direct impact is when these sites are in the way of the mining activities, meaning that it is severely threatened. Should any of these be directly impacted on by the mine the graves will have to be exhumed and the human remains reburied. Before this may happen the necessary advertising, possible social consultation and permitting applications should be implemented.
- Should these not be impacted on directly, there will definitely be a secondary impact. The graves should then be fenced in a management plan for the preservation and maintenance thereof be written.
- The cost for writing a management plan depends on the individual consultants. It is around R 10 000.00. Annual inspections for the monitoring of sites should however be included. Writing a management plan would usually entail one site visit and then a couple of days to write the plan.
- The exhuming and re-internment of graves is an expensive exercise, but it brings a permanent solution for the mine. For graves younger than 60 years only an undertaker should be involved, but for those older than 60 years or of an unknown date, an undertaker and an archaeologist should be involved.
- Table 1 gives a comparison of the two options in dealing with graves.
- It is difficult to give a cost estimate as there are many factors influencing such a process. The following is however a guideline of possible costs –
  - Undertakers fees per grave
  - Archaeologists fee per grave
  - Transport
  - Wake fee
  - Ritual ceremony costs
  - Advertising for a 60 day period
  - Social consultation and community liaison
  - New grave plot
  - Headstones
  - Permit fees
  - Report fees
  - Accommodation
  - Labor
  - Etc.
- It also is difficult to give a time frame. The process usually involves a site visit of at least one day and then the advertising of 60 days. Permitting can take anything between 30 and 180 days. The physical exhumation can be calculated at about 8 graves per day.

**Table 1 Risk management relating to graves**

| <b>Risk factor</b>        | <b>Fencing of site</b>   | <b>Exhumation and Relocation of graves</b>  |
|---------------------------|--|---|
| Access                    | Descendants will need undisturbed access to graves (only if descendants are identified)        | Descendants will have access to new grave yard (only if descendants are identified)   |
| Compensation              | Not needed   | Descendants may want compensation, but it is advised that this be limited to a night vigil (only if descendants are identified)       |
| Approval from descendants | Not needed   | Needed and without it no relocation will be allowed (only if descendants are identified) – usually not a problem to obtain permission |
| Security risk             | Potential yes, as descendants must get access (only if descendants are identified)             | No, as access would be at new cemetery*   |
| Management of sites       | Yes, a sustainable management plan will be needed  | No, as this will form part of an existing cemetery *  |
| Monitoring of sites       | Yes, an independent heritage expert to monitor management plan and maintenance once a year     | No, as it will form part of an existing cemetery*   |
| Upgrade and cleaning      | Yes, site should be left by developer in a better state than before and it should be kept neat | No, as this will be dealt with as part of the existing cemetery*  |
| Land claims               | Yes, but only in case of a forced removal (only if descendants are identified)                 | Yes, but only in case of a forced removal (only if descendants are identified)  |
| Finances                  | Less expensive over the short term   | More expensive over the short term  |
| Time frames               | Less time consuming  | More time consuming   |
| Responsibility            | Permanent liability and responsibility for the developer                                       | The developer's responsibility and liability ends after the exhumation and relocation process*  |

**\*The developer may decide to start a new cemetery on their premises for this purpose. In such a case they will save the cost of grave plots etc. (as compared to purchasing additional land for this purpose). If the graves are located on mine property, the graves will then be a site they need to manage permanently meaning that it will need to be fenced and a management plan needs to be compiled and implemented.**

- There also already is an impact on sites number 16 and 17. Both may be demolished, but site number 16 will have to be mitigated first by documenting it.
- This report is seen as ample mitigation for site 17.
- Should there be a direct impact on the other historical buildings, sites no. 14 and 15, it also may be demolished, but have to be mitigated first by documenting it.

- Should the impact on these not be direct, it should just be left as it is. If possible the mine could use some of these buildings as offices or store buildings.
- The documentation of buildings includes taking a series of photographs of each building and specific important features thereof. Sometimes drawing a plan is needed. A cost estimate for this would be approximately R 15 000.00 per building.
- It should be remembered that due to the natural factors indicated in the report, it is possible that all cultural sites may not have been identified. Also the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken when development work commences that, if any more artifacts are uncovered, a qualified archaeologist be called in to investigate.

## 11. REFERENCES

Archaetnos database.

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

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

Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa.** Scottsville: University of KwaZulu-Natal Press.

Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.

Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Pistorius, J.C.C., 2007. **A phase 1 heritage impact assessment (HIA) STUDY FOR Moabsvelde 248, Rietkuil 249 and Wolvenfontein 244 near Delmas in the Mpumalanga Province of South Africa.** (Unpublished report, Pretoria).

Republic of South Africa. 1980. **Ordinance on Excavations** (Ordinance no. 12 of 1980). The Government Printer: Pretoria.

Republic of South Africa. 1983. **Human Tissue Act** (Act 65 of 1983). The Government Printer: Pretoria.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

SAHRA database.

Van der Ryst, M.M. & Meyer, A. 1999. Die Ystertydperk. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Van Schalkwyk, J.A., 2006. **Cultural Heritage Scoping report for the proposed Leeuwpans mining development, Delmas district, Mpumalanga.** (Unpublished report, National Cultural History Museum. Pretoria).

## **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:

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

#### Heritage significance:

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

#### Field ratings:

- National Grade I significance should be managed as part of the national estate
- Provincial Grade II significance should be managed as part of the provincial estate
- Local Grade IIIA should be included in the heritage register and not be mitigated (high significance)
- 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)

## 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.