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CK 2006/014630/23 **VAT NO.: 4360226270**

**REPORT ON A PHASE 1 HIA FOR A PROPOSED COAL MINE
ON PORTIONS 26, 46 & 47 OF THE FARM DROOGENFONTEIN 242IR,
DELMAS DISTRICT, MPUMALANGA**

For:

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REPORT: APAC013/66

by:

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SUMMARY

A Pelsler Archaeological Consulting (APAC) was appointed by Shangoni Management Services (Pty) Ltd, on behalf of Ngululu Resources (Pty) Ltd, to conduct a Phase 1 HIA for the proposed development of an opencast Coal Mine on portions 26, 46 & 47 of the farm Droogenfontein 242IR, near Sundra (in the Delmas district) in the Mpumalanga Province. Portion 26 is basically located on agriculturally developed land (ploughed fields), while Portions 46 & 47 are adjacently located smallholdings/plots to the north of Portion 26.

Two sites were identified on Portion 26, namely a cemetery and the remains of a farm labour settlement, possibly related to the grave site. No heritage sites, features or objects were identified on the two other portions of land. The report discusses the results of the field survey and background research, and provides recommendations on required mitigation measures in order to minimize the negative impact of the proposed mining development.

Based on the assessment, from a Heritage perspective, the development should be allowed to continue, taking cognizance of the conclusions and recommendations put forward at the end of this report.

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1. INTRODUCTION

A Pelsers Archaeological Consulting (APAC) was appointed by Shangoni Management Services (Pty) Ltd, on behalf of Ngululu Resources (Pty) Ltd, to conduct a Phase 1 HIA for the proposed development of an opencast Coal Mine on portions 26, 46 & 47 of the farm Droogenfontein 242IR, near Sundra (in the Delmas district) in the Mpumalanga Province. Portion 26 is basically located on agriculturally developed land (ploughed fields), while Portions 46 & 47 are adjacently located smallholdings/plots to the north of Portion 26.

Two sites were identified on Portion 26, namely a cemetery and the remains of a farm labour settlement, possibly related to the grave site. No heritage sites, features or objects were identified on the two other portions of land.

The client indicated the location and boundaries of the various study areas (portions) and the fieldwork focused on these. The landowners were consulted and access provided by them.

2. TERMS OF REFERENCE

The Terms of Reference for the study is to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on Portions 26, 46 & 47 of the farm Droogenfontein 242IR, located near Sundra in the Delmas district of Mpumalanga that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

3. 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).

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 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. Sites of 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 (AIA) only looks at archaeological resources. 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 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.

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.

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 to) 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)**.

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

3.2 The National Environmental Management Act

This act 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. METHODOLOGY

4.1 Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2 Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3 Oral histories

People from local communities are sometimes 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.

4.4 Documentation

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The proposed coal mine development is located on Portions 26, 46 and 47 of the farm Droogfontein 242IR, near Sundra (in the Delmas district) in Mpumalanga. Portion 26 is farmland (agricultural fields), while the other 2 portions are plots/small holdings near Sundra and neighbouring each other. Both these portions of land has been altered through small scale agricultural developments in the past and has a number of recent structures on it.

The topography of the area is flat and has been severely altered over the past, and if any sites, features or objects of cultural (archaeological & historical) significance did exist here in the past it would have been disturbed or destroyed to a large degree. Visibility during the assessment was good.

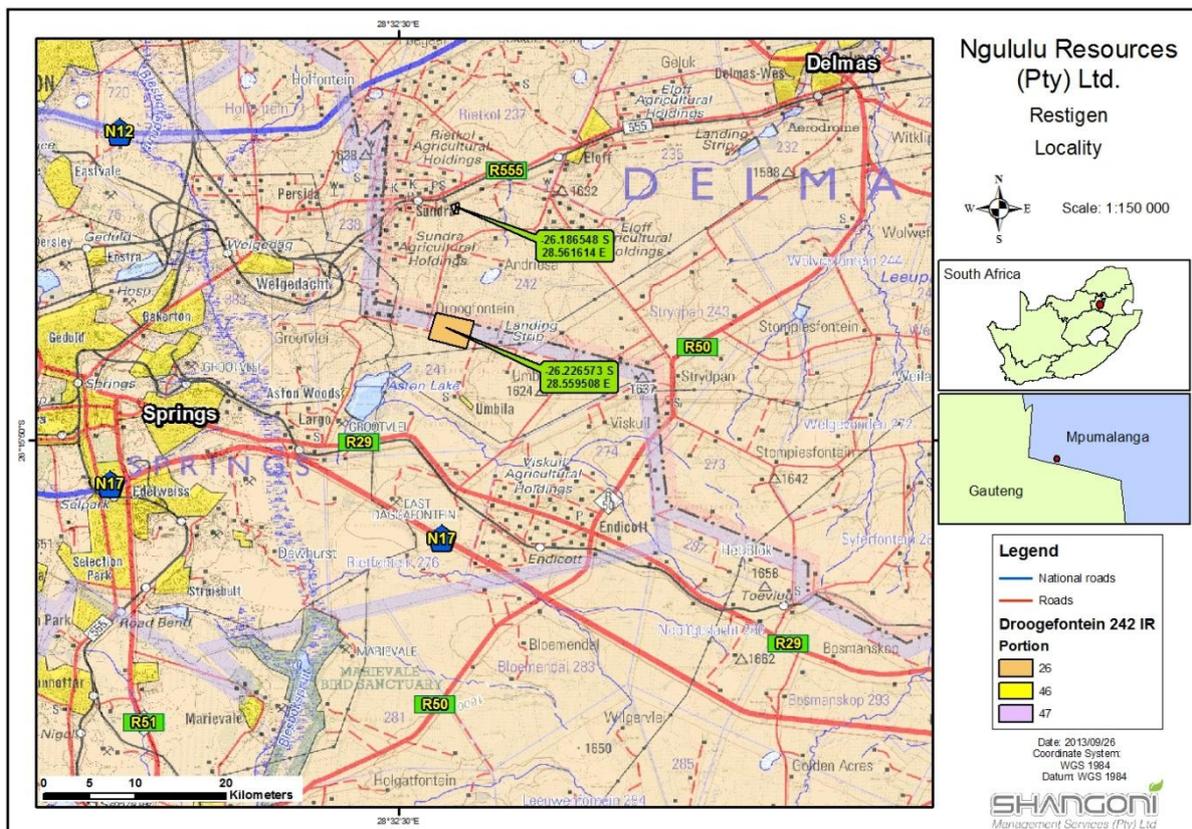


Figure 1: Location of Study area. Map courtesy Shangoni.

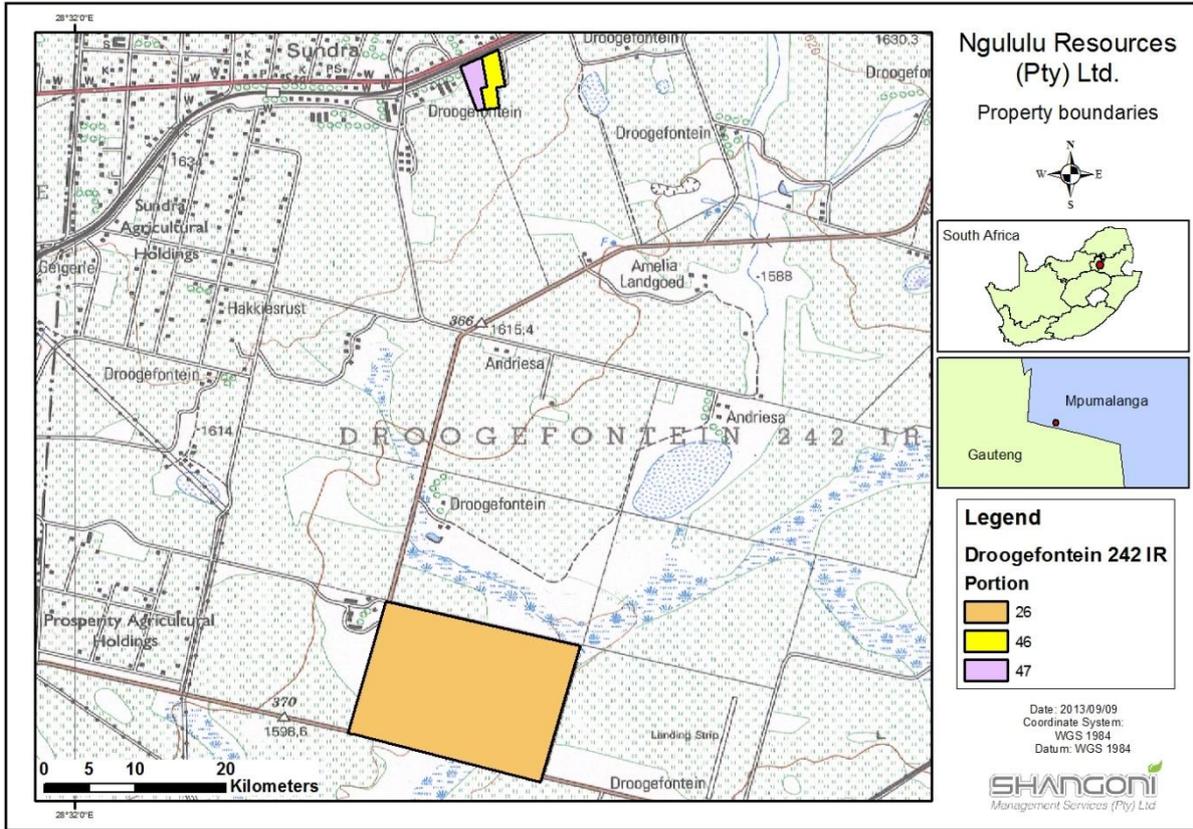


Figure 2: Topographic Location of study area and land parcels.
Map courtesy Shangoni.

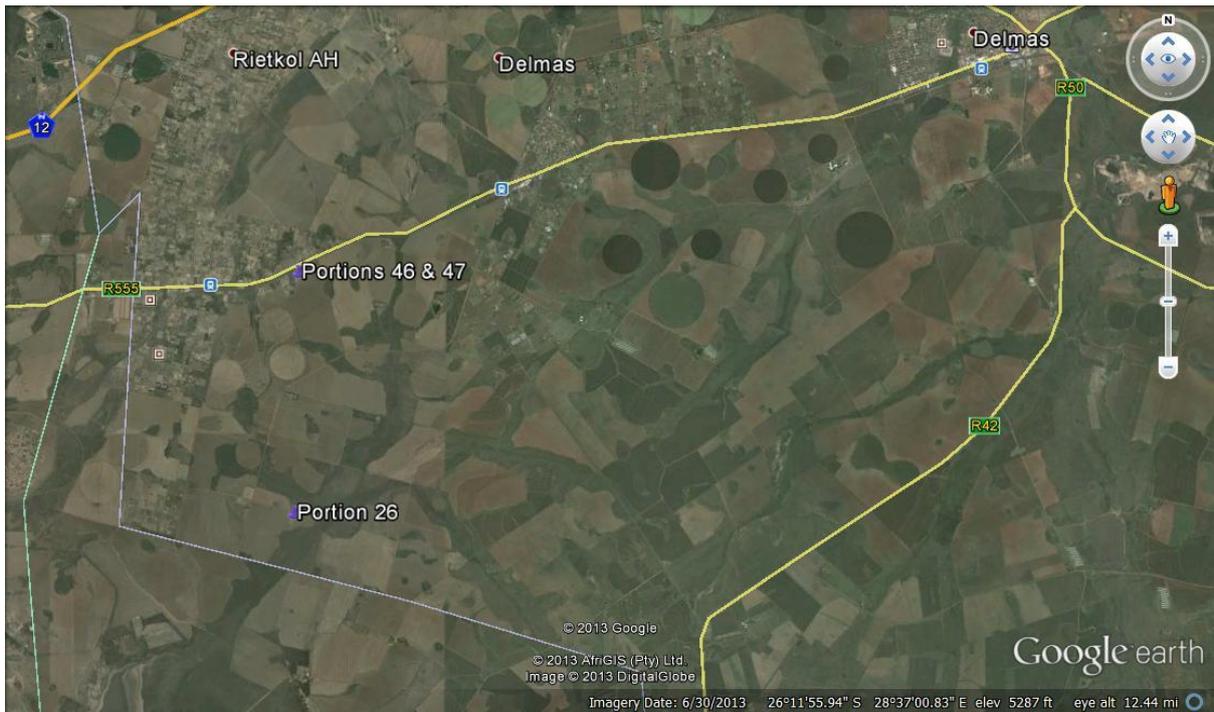


Figure 3: Aerial view of location of study areas (Google Earth 2013 – Imagery date 2013/06/30).



Figure 4: Closer view of Portion 26. Note the ploughed fields and wetland section (Google Earth 2013 – Image date 2013/06/30).



Figure 5: Closer view of Portions 46 & 47 (Google Earth 2013 – Image date 2012/08/29).



Figure 6: View of a section of Portion 26. Most of the area has been ploughed.



Figure 7: Another view of Portion 26. This shows a portion of the wetland section.



Figure 8: A view of a section of Portion 47.



Figure 9: A view of a section of Portion 46.

6. DISCUSSION

The Stone Age is the period in human history when lithics (or stone) was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is important to note that these dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

There are no known Stone Age sites in the area (including rock art), although this might be the result of a lack of detailed research (Bergh 1999: 4-5). No Stone Age sites or objects were recorded during the assessment of the area.

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.

Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are 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.

With the Iron Age it also seems as if there are no known Iron Age sites in the immediate area (again this could point to a lack of research). The closest known Late Iron Age settlement sites are found in and around Pretoria and the Cullinan area (Bergh 1999: 6-7).

The historical age normally starts with the first recorded oral histories in an area. It includes the moving into the area of people that were able to read and write. The earliest Europeans to move close to the area were the group of Robert Schoon in 1836. They were closely followed by the first Voortrekkers after that (Bergh 1999: 13). Delmas was officially accepted by the government as town in January 1909, while it became a Magisterial District in 1953 (Bergh 1999: 150-151).

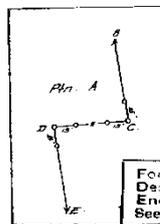
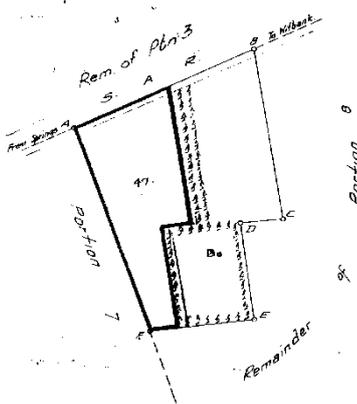
Old maps of the farm and farm portions obtained from the database of the Chief Surveyor General (www.csg.dla.gov.za) gives some information on the recent history of the area. The oldest map (dated 1928) and related to Portion 26 of the farm (document number 10IAEH01) indicates that the farm was originally called Droogfontein 34 and was located in the District of Delmas and Ward of Bronkhorstpruit. The portion was surveyed in July 1923 and the whole of the original farm was granted by title deed to one J.A.A.Bodes on the 6th of November 1865. Document 10IAGF01 (dated August 1938) shows that Portion 46 was surveyed and transferred by deed of transfer to one Margaret Marshall Steven MacDonald in November 1928, while it seems as if Portion 47 was surveyed in February 1946 (Document 10IAGJ01). No historical sites or structures are shown on any of these maps.

Approved

H. S. ...
 H.S. Surveyor-General
 1938

Description of Bascons.
 A. Nail Section 2" high
 B. 1/2" peg and broken brick cairn
 C. D. Iron bolts in concrete with witness marks (See inset below)
 E. 3/8" peg alongside iron post
 F. 3/8" peg 2' East of large iron post

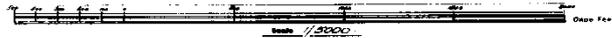
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BC 870 7	BC 260 36 20	B - 50952 6 - 33354 0
CD 193 2	CD 355 52 0	C - 60073 6 - 33496 1
DE 495 1	DE 281 52 20	D - 60059 4 - 33501 3
EF 480 3	EF 332 6 30	E - 33368 3 - 33371 3
FA 1094 0	FA 71 7 40	F - 33302 4 - 34695 7



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Portion 46 of Portion 47 of the farm DROEGEFONTEIN No 20

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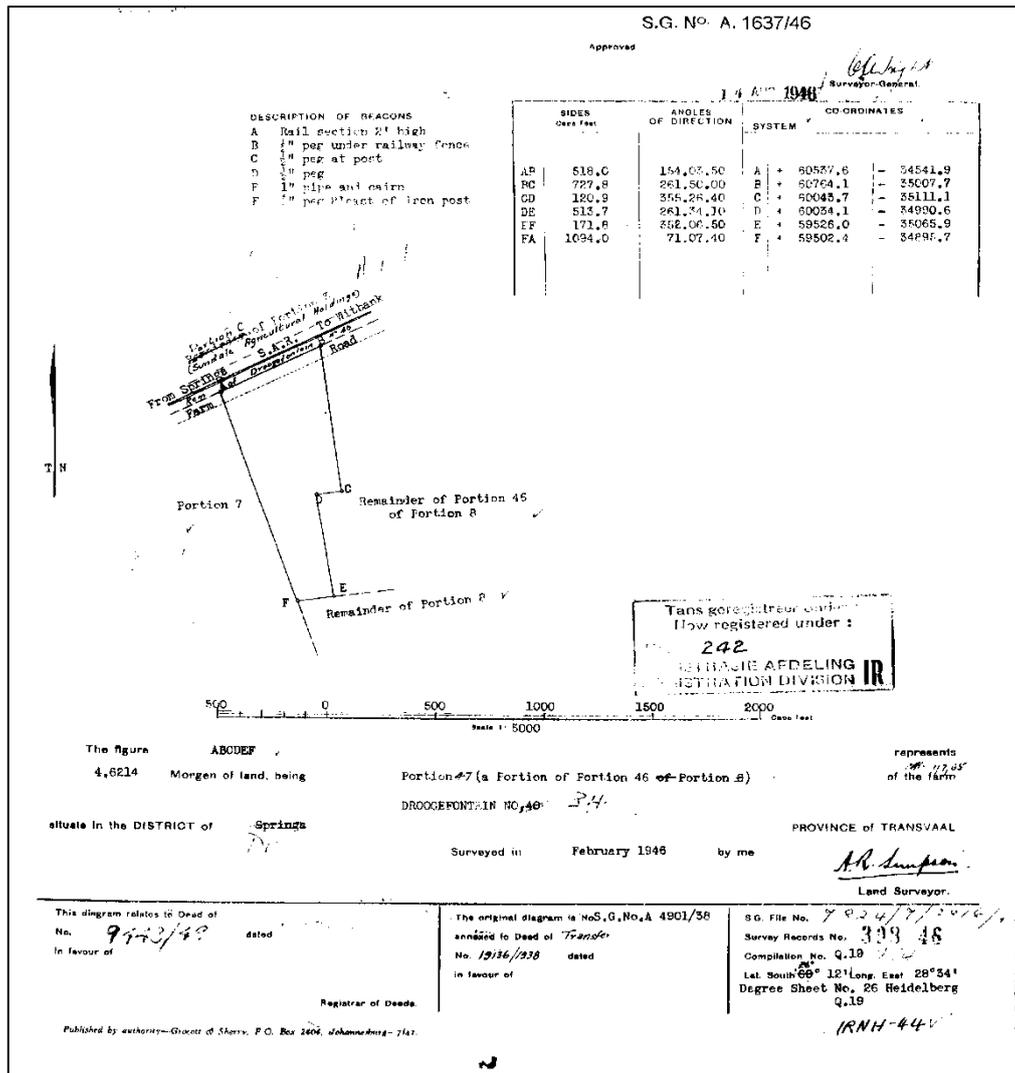
Surveyed in August 1938 by me H. S. ...
 Land Surveyor.

This diagram relates to Deed of No. 119136/38 in favour of ... Registrar of Deeds.

The original diagram is No. A 341/24 relating to Deed of Transfer No. 13520/28 dated 20 Nov 1929 in favour of Margaret Marshall Steven Macdonald.

S.G. File No. Y 824/6/10984/38
 Survey Records No. 1
 Completion No. Q 13 of 14
 Lat. South 26° 12' Long. East 28° 34'
 Degree Sheet No. 26 Heidelberg Q. 12

Figure 11: Map of Portion 46. CSG document 10IAGF01.



**Figure 12: Map of Portion 47.
CSG Document 10IAGJ01.**

Results of the Fieldwork

No cultural heritage (archaeological or historical) sites, features or objects were found on Portions 46 & 47. All the structures/buildings on these two portions (including the homesteads) are less than 60 years of age. If any did exist here in the past it would more than likely have been destroyed or disturbed in the recent past through various changes.

Portion 26 has been largely ploughed for crop-raising, while a part of the land parcel is covered by a wetland. Any significant archaeological or historical sites that could have existed here in the past would have been severely disturbed or destroyed as a result of agricultural practices. Two sites dating to the recent past were however identified and recorded on Portion 26.

Site 1 - Graveyard

The first site is an informal graveyard containing at least 80 graves, although there might be more located here. Many of the graves have formal headstones with legible inscriptions,

while some are only marked with single stones at the head; some are only identified through the depressions left by the burial pit, while others are demarcated by soil heaps, bricks and cement dressings. A number of families are represented by the graves (those who could be identified from inscriptions). These include Gamede, Ndungwane, Molife, Radebe, Majola and Mvathulane. The oldest date of death seen is 1963, with the most recent being 1988. A large number of the graves seem to have been those of young children or infants. The graves are more than likely those of farm workers who used to work and live on this and other farms in the area.

GPS Location:

S26.22413 E28.56550

Cultural Significance: High – graves and cemeteries always carry a High Significance

Heritage Significance: Grade III. Should be included in the heritage register and may be mitigated (high/ medium significance).

Field Ratings: Local Grade IIIB. Sites of local importance and therefore worthy of conservation.

Mitigation: No development should be allowed close to the stone walled settlement sites on and around the hills and outcrops. They should be demarcated (fenced-in) and a Heritage Management Plan for the archaeological sites in the area should be drafted and implemented.

Site 2 – Settlement remains

The site contains the remains of a mud-brick and plastered dwelling, as well as the foundations of other structures and ash and refuse dumps. It is possibly the remnants of a farmworker “settlement” on Droogefontein, and might be related to the graveyard found at Site 1. It should be noted that there is always a possibility that the burials of still-born or small infants could be located inside or close to the dwellings, and this aspect should be taken into consideration during any development actions.

GPS Location: S26.22852 E28.55396

Cultural Significance: Low

Heritage Significance: None

Field Ratings: General protection C (IV C): Phase 1 is seen as sufficient recording and it may be demolished (low significance)

Mitigation: None required. However, the possibility of the presence of unmarked burials close to or inside the dwellings should be considered. Social consultation in regards to the graves located at Site 1 should include this.



Figure 13: View of the Graveyard (Site 1).



Figure 14: A closer view of the site.



Figure 15: View of one of the depressions indicating some of the graves.



Figure 16: Some graves are marked with a headstone only.



Figure 17: One the inscribed headstones.



Figure 18: Some of the headstones have been overturned.



Figure 19: View of Site 2.



Figure 20: Closer view of the mud-brick dwelling on Site 2.



Figure 21: There are a number of ash and refuse dumps at Site 2.



Figure 22: Site distribution Portion 26 (Google Earth 2013 – Image date 2013/06/30).



Figure 23: Closer view of graveyard, showing approximate extent (Google Earth 2013 – Image date 2013/06/30).



Figure 24: Closer view of Site 2 settlement remains (Google Earth 2013 – Image date 2013/06/30).



Figure 25: One of the modern structures on Portion 47.



Figure 26: Homestead on Portion 47.



Figure 27: Homestead Portion 46.



Figure 28: Workers' dwellings on Portion 46.

7. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Phase 1 HIA for the proposed coal mine development on Portions 26, 46 & 47 of the farm Droogfontein 242IR, located near Sundra in the Delmas Magisterial District of Mpumalanga, has been conducted successfully. Portion 26 has been altered through ploughing and crop growing over the past, while both Portions 46 & 47 are small holdings or plots containing fairly modern dwellings and small scale agricultural developments. If any archaeological and historical sites, features or objects did exist here in the past it would have been severely disturbed or destroyed as a result. Two sites dating to the recent past was however identified on Portion 26, including an informal graveyard containing around 80 graves and the remnants of a possible farmworker settlement. The graveyard carries a High Significance and should be mitigated to negate any impact by the proposed development.

The following is recommended:

1. should the development proceed on Portion 26 then the graveyard would be impacted. Two possible mitigation actions can be considered. The first option is to fence-in, clean and manage the site within the development. This would entail providing access to descendants and family members to visit their graves and the drafting and implementing of a Graves Management Plan. The second option is the exhumation and relocation of the graves, after following a detailed social consultation process that will include the erection of site notices, radio and newspaper ads, meetings with community members, getting consent for the removals from family members and the obtaining of permits for the exhumation and relocation process.

Finally, from a cultural heritage point of view the development should be allowed to continue taking heed of the above. The subterranean presence of archaeological or historical sites, features or objects is always a possibility. This could include unknown and unmarked burial pits. Should any be uncovered during the development process and archaeologist should be called in to investigate and recommend on the best way forward.

8. REFERENCES

Location Maps of study area location: Shangoni Management Services

Aerial views of study area, site distribution and views of sites: Google Earth 2013 – Image dates 2012/08/29 & 2013/06/30.

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

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

www.csg.dla.gov.za: Database of the Chief Surveyor General.

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:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. 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.