



Archaetnos Culture & Cultural  
Resource Consultants  
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**A REPORT ON A WALK DOWN ARCHAEOLOGICAL IMPACT ASSESSMENT  
FOR THE PROPOSED CONSTRUCTION OF 132KV DISTRIBUTION LINES FROM  
FERRUM SUBSTATION TO THE PROPOSED NEW SEKGAME SWITCHING  
STATION, GAMAGARA LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE**

For:

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**REPORT NO.: AE01752V**

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

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

## **DISCLAIMER**

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

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## SUMMARY

Archaetnos cc was requested by Landscape Dynamics to conduct a walk down heritage impact assessment for Eskom, related to the proposed construction of 132KV distribution lines from Ferrum substation to the proposed new Sekgame Switching Station. This is close to the town of Kathu within the Gamagara Local Municipality, Northern Cape Province.

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

During the survey no sites of cultural heritage significance were identified. Three Stone Age sites, identified by the archaeologist who did the initial HIA study, were visited. None of these are believed to be sites, due to it containing a very limited number of artefacts. Another stone tool was identified at another location along the surveyed route, indicating that stone tools may be found almost anywhere on the landscape. This however does not necessarily constitute sites.

Thus the impact of the development on these finds are negligent. The proposed development may therefore continue.

It should be noted however that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when the development commences further that if any of these are discovered, a qualified archaeologist be called in to investigate and that the assessment be amended if necessary.

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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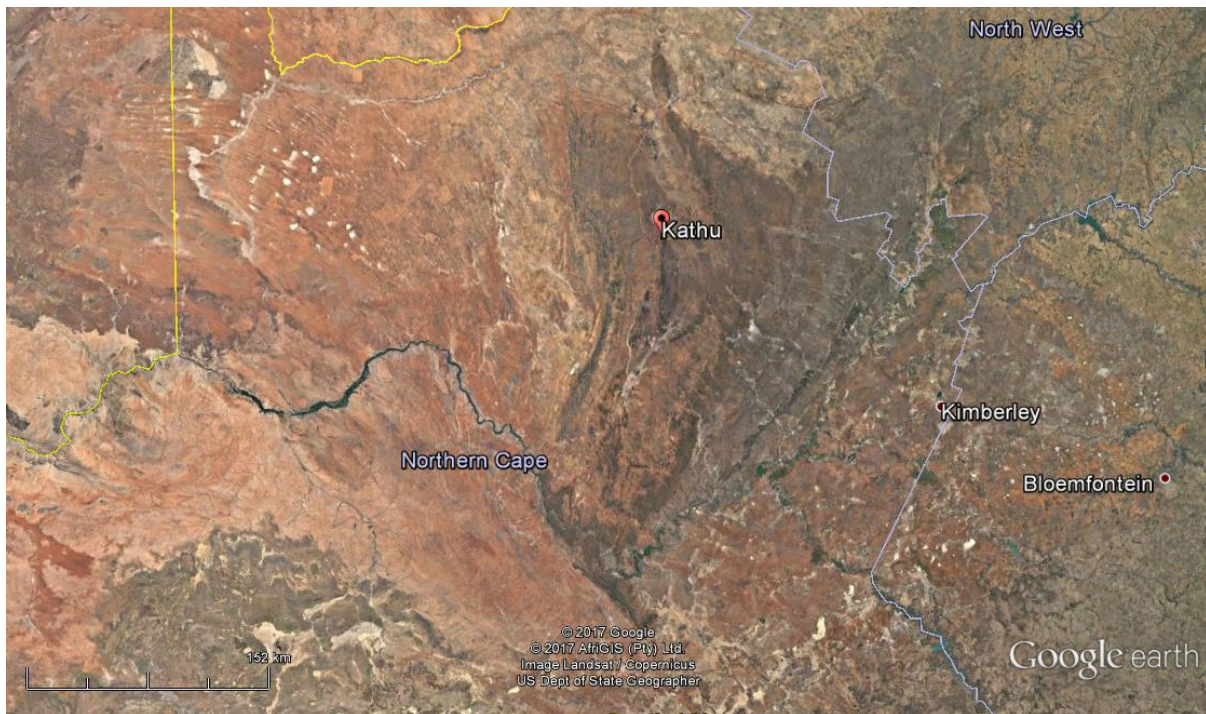
## 1. INTRODUCTION

Archaetnos cc was requested by Landscape Dynamics to conduct a walk down heritage impact assessment for ESKOM, related to the proposed construction of 132KV distribution lines from Ferrum substation to the proposed new Sekgame Switching Station. This is close to the town of Kathu within the Gamagara Local Municipality, Northern Cape Province (Figure 1-3).

The infrastructure associated with the project entails:

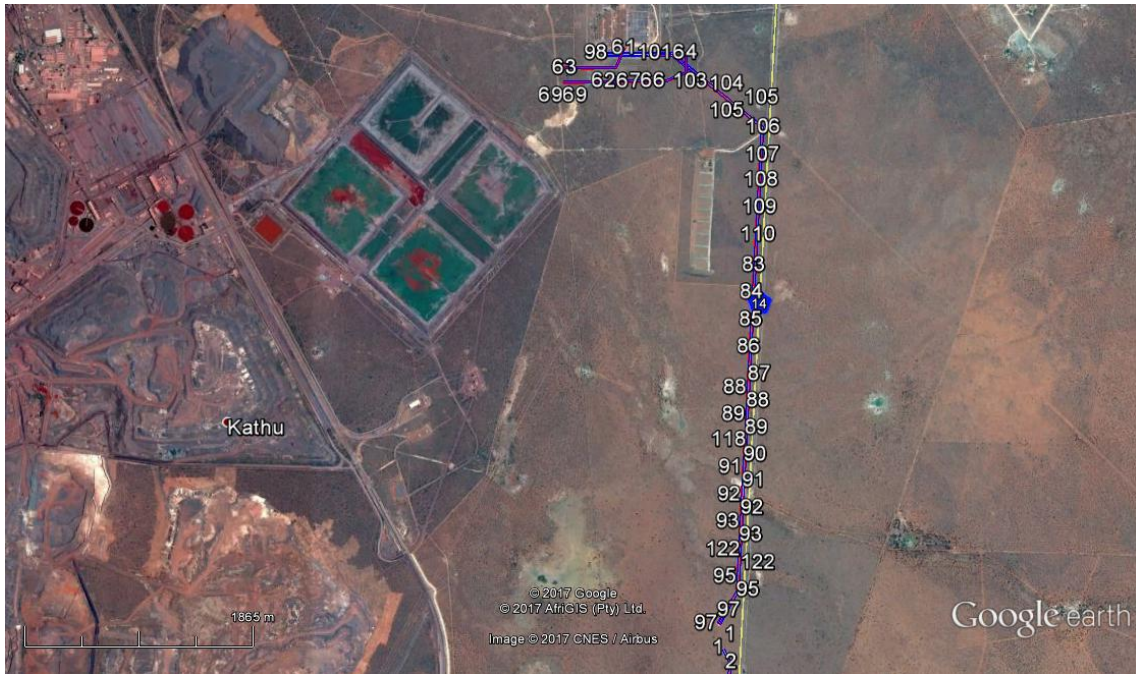
- An 80 m wide servitude from Ferrum Substation along the N14 road to the proposed new Sekgamw Switching Station
- A distribution line (132KV), approximately 5800m in length
- A switching station (Sekgame) approximately 110m from the N14, with a size of 250m x 100m.

The servitude was already approved by SAHRA. Therefore, and since this is a walk-down study, only the final route and pylon positions were investigated. The client indicated the area to be surveyed and the field survey was confined to this area.



**Figure 1: Location of Kathu in the Northern Cape Province. North reference is to the top.**





**Figure 2: Location of the surveyed route in relation to Kathu. Note that the proposed Sekgame Switching Station is situated at coordinate number 97 of the map. The line runs from here northwards to end at the existing Ferrum Substation, situated at coordinate no 69. Only this section was investigated as the remainder (towards the south of Sekgame) forms part of another project.**



**Figure 3: Zoomed in Google Earth image of the surveyed route and pylon numbers.**

## **2. TERMS OF REFERENCE**

The Terms of Reference for the survey were to:

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

## **3. CONDITIONS & ASSUMPTIONS**

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

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artefacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).

4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that this report should make it clear how to handle any other finds that might occur.

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

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

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

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

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

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

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

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed



as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. The different phases during the HIA process are described in Appendix E.

An HIA must be done under the following circumstances:

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

### **Structures**

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

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

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

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

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

- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

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

### **Human remains**

Graves and burial grounds are divided into the following:

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

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;  
or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

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

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

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

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

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

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

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

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

Impacts on the cultural heritage should be minimized. This include the possible maintenance of such sites in situ, or when impossible, the restoration of the functionality of the cultural heritage in a different location. When cultural historical and archaeological artefacts and structures need to be removed is should be done by professionals and by abiding to the applicable legislation.

The removal of cultural heritage resources may however only be considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the effected communities. Again professionals should carry out the work and adhere to the best available techniques.

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

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

## 6. METHODOLOGY

### 6.1 Survey of literature

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

### 6.2 Field survey

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

Where required, the location/position of any site was determined by means of a Global Positioning System (GPS)<sup>1</sup>, while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 4). Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. The surveyed area is approximately 6 km long and the survey took about 5 hours to complete.



**Figure 4: GPS track of the field survey. North reference is to the top.**

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

### **6.3 Oral histories**

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

### **6.4 Documentation**

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

### **6.5 Evaluation of Heritage sites**

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

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

## **7. DESCRIPTION OF THE ENVIRONMENT**

From the south, the route starts at the proposed Sekgame Switching Station. Here the vegetation cover consist of short patches of grass with a few trees. Open patches of soil can also be seen (Figure 6). The route then goes towards the north-east and then follows the N14 road in a northern direction. Between pylons 92-97, 83-90, 112-118 and 120-125 the environment has similar characteristics (Figure 7).

At pylon 91 and 119 the area is disturbed due to an old quarry (Figure 8). The grass cover is denser and longer towards the north of the line, but still open patches are present (Figure 9 10). This is between pylons 72-82 and 103-111. At pylons 75 and 106 the line turns towards the north-west to ends inside of the existing Ferrum Substation. The remainder of the line shows definite signs of disturbance. At pylon 102 this was clearly the result of the previous power lines being installed (Figure 11). Pylons number 61-72 and 98-101 is inside of the existing Ferrum Substation, hence the disturbance (Figure 12).



The topography of the area is reasonably flat with now outstanding outcrops or hills. No drainage lines are found in the surveyed area.



**Figure 6: General view of area around the proposed Sekgame Switching Station.**



**Figure 7: Another view of surveyed area along the N14.**





**Figure 8: The quarry close to pylon 119.**



**Figure 9: General view of vegetation along the northern section of the proposed power line.**



**Figure 10: Dense vegetation close to pylons 73 and 101.**



**Figure 11: View of disturbed landscape close to pylon 102.**





**Figure 12: View of the landscape at the Ferrum Substation.**

## **8. HISTORICAL CONTEXT**

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, but there are a few heritage surveys that were done in the area as was research done in the wider geographical region. This information is included in the discussion.

### **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) 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.

No Early Stone Age sites are known from the study area or the immediate geographical region. Stone Age sites are known to occur in the larger geographical area, including the well-known Wonderwerk Cave in the Kuruman Hills to the east, Tsantsabane, an ancient specularite working on the eastern side of Postmasburg, Doornfontein, another specularite working north of Beeshoek and a cluster of important Stone Age sites near Kathu. Additional specularite workings with associated Ceramic Later Stone Age

material and older Fauresmith sites (early Middle Stone Age) are known from Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester, Sekgame and Mount Huxley to the west (Beaumont 2000: 2-3; Morris 2005: 3; Webley 2014: 6-7).

The onset of the Middle Stone Age coincided with a widespread demand for coloured or glittering minerals that arose at the time for still unknown reasons. The intensive collection of such substances soon exhausted surface exposures and led to the quest being extended underground and thus to the birth of mining practice. Specularite was commonly mined in the Postmasburg area. In 1968 AK Boshier, working in collaboration with P Beaumont, found a number of underground specularite mines on Paling (De Jong 2010: 35). Stone and Iron Age communities mined specularite associated with iron ores for cosmetic purposes at Blinkklipkop, Paling, Gloucester and other farms (De Jong 2010: 41; Snyman 2000: 3). There is a well-known Middle Stone Age site at Lyleveld (Beaumont 2000: 2; SAHRA database) which lies a few kilometres south of the surveyed area.

Many Middle and Late Stone Age tools have been found by Archaetnos during surveys in the Northern Cape. These sites are located close to Griekwastad, Hotazel, Postmasburg and Kenhardt (Archaetnos database). The sites close to Postmasburg were identified on the farms, Kapstewel, Gloucester and Lohatla, much further to the south of the surveyed area.

A number of Stone Age sites and scattered finds of Stone Age material were identified on the nearby farm Paling during an earlier survey (Pelser and Van Vollenhoven 2010: 12-17). Rock engraving (rock pecking) sites are known from Beeshoek, Sishen and Bruce (Beaumont 2000: 2; Morris 2005: 3; Snyman 2000: 3). The latter are associated with the Late Stone Age. Again these lies outside of the corridors investigated.

The mentioned Late Stone Age sites are associated with the San people. Mitchell (2002: 126) indicates that the language group who occupied the Northern Cape is the /Auni-//Khomani and Eastern /Hoa. These people were hunters and gatherers which means that they would have moved around, leaving little trace of their existence.

From the above mentioned it is clear that Stone Age people did utilize and settled in the area. One will therefore more than likely find sites or associated with these people. Scatters of Middle and Late Stone Age material has indeed been identified at Gloucester (Pelser 2012) and at the Ferrum Substation (Mabale 2009). The latter were isolated finds located within a disturbed context. During a survey of the ESKOM line directly towards the south of the one currently being investigated (Van Vollenhoven 2016) no heritage features were identified. However Kruger (2014) did identify what he called three sites within the corridor currently being investigated. All three of these are MSA sites (see discussion below).

Stone Age sites may therefore be encountered at hills especially those with shelter such as caves and overhangs which may even contain rock paintings. The dolerite hills in the vicinity may host rock engravings. Such engravings were for instance identified during a previous survey at Beeshoek (Archaetnos database). This however lies to the south-west of the study area and will not be impacted on.

## **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 are now 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.

No Early or Middle Iron Age sites have been identified previously in the area of study. Iron Age people occupied the central and eastern parts of southern Africa from about 200 A.D., but the San and Khoi remained in the western and southern parts (Inskeep 1978: 126; see also Huffman 2007).

It is known that Iron Age people settled in the eastern parts of the Northern Cape (Bergh 1999: 12), but this is only the furthest intrusion of these people into the west of South Africa. It also is known that Late Iron Age people did utilize the area further to the west, albeit briefly, as they did mine copper in the Northern Cape. This was much further to the west of the study area, closer to the Orange River (Inskeep 1978: 135).

This later phase, termed the Late Iron Age (LIA), was accompanied by extensive stonewalled settlements, such as the Thlaping capital Dithakong, 40 km north of Kuruman. Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is sometimes known as the Ceramic Late Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan (De Jong 2010: 36).

No Iron Age sites, features or objects were found during the survey. Although not impossible, the chances of finding any Iron Age remains in the study area are reasonably slim.

## **8.3 Historical Age**

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. This era is sometimes called the Colonial era or the recent past. Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country

during the recent historical past. Therefore much more cultural heritage resources have been left on the landscape.

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18<sup>th</sup> century and effectively ended with the settlement of white farmers in the interior. This period, known as the *difaqane* or *Mfecane*, also affected the Northern Cape Province, although at a relatively late stage compared to the rest of Southern Africa. Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwana and Phuting tribal groups (De Jong 2010: 36).

Geographically, the study area is part of a region known as Griqualand West. At the end of the 18<sup>th</sup> century and the beginning of the 19<sup>th</sup> century Griqua tribes coming from the south settled in the region in order to escape encroachment of Afrikaner Trekboere who was active along the Orange River. They established the town of Klaarwater, renamed Griquatown in 1813. After the discovery of diamonds in 1867 a serious dispute over the ownership of the diamond fields ensued, involving the Transvaal and Orange Free State Boer republics, Griqua, Korana and Thlaping communities and the Cape colonial government. In October 1871 the diamond fields were proclaimed British territory under the name Griqualand West. In 1879 it was annexed to the Cape Colony (De Jong 2010: 36).

The *difaqane* therefore coincided with the penetration of the interior of South Africa by white traders, hunters, explorers and missionaries. The first traders in the Northern Cape were PJ Truter's and William Somerville's journey of 1801, which reached Dithakong at Kuruman. They were again followed by Cowan, Donovan, Burchell and Campbell and resulted in the establishment of a London Mission Society station near Kuruman in 1817 by James Read (Bergh 1999: 12-13; De Jong 2010: 36). During the 1870's more travelers, such as William Sanderson, John Ryan and John Ludwig passed through the area close to Postmasburg (Snyman 2000: 3).

The Great Trek of the Boers from the Cape in 1836 brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society. The conflict between Boer and Tswana communities escalated in the 1860s and 1870s when the Korana and Griqua communities became involved and later also the British government. The conflict mainly centered on land claims by various communities. For decades the western border of the Transvaal Boer republic was not fixed. Only through arbitration (the Keate Arbitration), triggered by the discovery of gold at Tati (1866) and diamonds at Hopetown (1867) was part of the western border finally determined in 1871. Ten years later, the Pretoria Convention fixed the entire western border, thereby finally excluding Bechuanaland and Griqualand West from Boer domination (De Jong 2010: 36).

The incorporation of Griqualand West into the Cape Colony promoted colonial settlement in the area from the 1880s. Government-owned land was surveyed and divided into farms, which were transferred to farmers. Surveyors were given the task



of surveying and naming some of the many farms in this region. These farms were allocated to prospective farmers, but permanent settlement only started in the late 1920s and the first farmsteads were possibly built during this period (De Jong 2010: 36). The Griqua town of Blinkklip (established in 1882), originally a mission station, was renamed Postmasburg in 1892 and became the centre of a magisterial district (Snyman 2000: 6). Another town, Olifantshoek, was established in the 1880s. The region remained sparsely populated until the advent of the 20<sup>th</sup> century, when cattle farming became popular (De Jong 2010: 36).

Prospecting started in the Postmasburg area during 1882 and manganese was discovered here during 1886 (Snyman 2000: 6, 13). Henry George Brown, who was commissioned in 1888 by the government of British Bechuanaland to erect the first government buildings in Kuruman, became interested in the iron ores that were known from the Klipfontein Hills. While prospecting there in the late 19<sup>th</sup> century, he became the first person to identify manganese in what is today known as the Eastern Belt of the Postmasburg Manganese Field.

Captain Thomas Shone, who arrived in Postmasburg in 1919 to join the diggers following the discovery of diamonds at the town, discovered the manganese ores in the Western Belt during 1922-1924 (De Jong 2010: 38). In 1925 Shone and partners founded the Union Manganese Mines and Minerals Limited in order to secure mineral rights and exploit the ores. Prior to the discoveries by Brown and Shone, manganese was only mined in South Africa on a very small scale west of the present town of Magaliesburg and in the Western Cape. In 1926, Guido the farm and formed The Gloucester Manganese Mines (Postmasburg) Limited. The land was held for future development, as reasonable transportation facilities were not available at that time (De Jong 2010: 38; Snyman 2000: 22).

Following the founding of their manganese mining company, Shone and his partners attempted to entice overseas investments but met with little success, because too little was known about the economic viability of the deposits. The government then sent Dr. AL Hall of the Geological Survey to conduct a detailed geological survey of the Postmasburg manganese deposits. He was the first person to map them along the entire length of the Gamagara Hills and to classify them scientifically as ferruginous manganese ores that were suited for the production of low-grade ferromanganese. His report (1926) was optimistic about the viability of the deposits but stated that lack of proper transport facilities would be a concern (De Jong 2010:39).

Shone's company established small prospect workings all along the Gamagara Hills on farms such as Beeshoek, Paling, Doornfontein and Magoloring. In 1926 a Postmasburg attorney, AJ Bester, started taking up options on the farms in the Klipfontein Hills and established a second mining company, South African Manganese Limited, the forerunner of SAMANCOR. Two years later Guido Sacco formed a third company, Gloucester Manganese Mines (Postmasburg) Limited. The land was held for future development, as reasonable transportation facilities were not available at that time (De Jong 2010: 39).

The presence of manganese deposits in the Klipfontein Hills and observations made from prospecting trenches showed that the manganese ore bodies in the Western Belt

were perhaps more irregular in shape than predicted by Hall. This resulted in the Geological Survey commissioning Dr. Louis Nel to undertake a second survey in 1927-1929 to map the entire manganese field in detail. His results, published in 1929, laid the foundation for much of the present-day knowledge of the geology of the Postmasburg manganese field (De Jong 2010: 39).

Mining by Union Manganese and South African Manganese started in earnest in 1927 in the Postmasburg field. Lack of proper transport facilities and the application of obsolete mining methods (everything was done by hand on a small scale) hampered progress. Manganese ores were collected from the open pits through a system of coco-pans and loaded on wagons (later trucks) that went to the Koopmansfontein railway station, about 100 km away (De Jong 2010:40).

The situation showed promises of being improved when the British Swiss International Corporation Limited provided capital for the construction of a railway line from Koopmansfontein to Postmasburg and Beeshoek in return for certain manganese mineral rights. A new joint company, The Manganese Corporation Limited, was formed and an agreement reached with the Minister of Railways and Harbours. The extended line to Beeshoek was opened in June 1930 and development of the ore bodies at Beeshoek, Doornfontein and Paling could take place. For this purpose a narrow-gauge railway line was laid (De Jong 2010: 40).

However, the September 1929 crash on the New York Stock Exchange, followed by the Great Depression, brought all manganese mining operations to a halt, rendering the newly constructed Koopmansfontein / Beeshoek railway line dormant (De Jong 2010: 41).

May 1930 saw the launch of Ore & Metal Company Limited to import and export mineral concentrates, including manganese. The African Mining and Trust Company Limited were formed in December 1931 to acquire mineral rights and explore mineral deposits. In exchange for shares in African Mining and Trust, the founders transferred their entire Ore & Metal shareholding to the new company, while Guido Sacco transferred his Gloucester Manganese Mines shares. Thus, Ore & Metal and Gloucester Manganese Mines became subsidiaries of African Mining and Trust, now a wholly owned subsidiary of Assore Limited (previously The Associated Ore & Metal Corporation Limited), which was formed in 1950 (De Jong 2010: 41).

During 1934 the South African Railways re-opened the railway line and extended it to Gloucester. In 1935 The Associated Manganese Mines of South Africa Limited ("Assmang") was formed. Anglovaal acquired all the mineral leases of the Manganese Corporation and these were ceded to Assmang, as were the shares of the Gloucester Manganese Mines Limited held by African Mining and Trust in exchange for shares in Assmang. The first shipment of manganese ore left Durban harbour in March 1936 and other shipments continued uninterruptedly (De Jong 2010: 41).

The post office at Glosam was started in 1937 and in 1954 a mining village was established here. Originally it consisted of twelve houses (Snyman 2000: 54, 98). The Associated Manganese Mines of South Africa Limited changed its name to Assmang

on 30 May 2001, and was reorganised into three divisions: Manganese, Chrome and Iron Ore (De Jong 2010: 41).

One may therefore expect sites associated with the first white farmers, early missionaries and mining companies. This of course would include graves. During previous heritage studies in the vicinity, Pelsers & Van Vollenhoven (2009a, 2009b), Van Vollenhoven & Pelsers (2010) and Pelsers (2012) indeed identified various sites related to mining activities on the farms Kapstewel and Gloucester. These are however mostly outside of the investigated area. Grave sites are known from the farms Gloucester and Lohatla. Beautiful old mine buildings, with a heritage value were also identified at Gloucester (Glosam Park) and Beeshoek (Archaetnos database). Again these fall outside of the routes investigated. The town of Postmasburg also hosts a number of heritage buildings, although the town lies too far to the south of any of the corridors to be impacted on. Historical remains of low importance was discovered at the Ferrum Substation by Mabale (2009: 9).

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

It has been indicated above that Kruger (2014) identified three MSA sites. He described these sites as:

- EXIGO-SG461-SA01 – a low density MSA lithic scatter identified along the proposed electricity distribution line in association with a shallow quarry. The occurrence is of limited scientific value within its local site context due to the general loss of context and site integrity for the artefacts at the quarry, and the low density of diagnostic formal tools. However, the site is situated within (and possibly part of) the significant larger Kathu Stone Age Complex and on a regional scale it might be of importance.
- EXIGO-SG461-SA02 – a low density MSA lithic scatter.
- EXIGO-SG461-SA03 – a low density MSA lithic scatter.

He further describes these as similar to related Stone Age occurrences in the area and that these MSA scatters occur mainly as a single horizon within a shallow, decomposed calcrete formation, where precipitation and groundwater have exposed the stone tools.

All three of these sites were visited. The following were noted:

- EXIGO-SG461-SA01 (no 3 on map)

Only two LSA stone artefacts were seen. These are extremely crude and likely to rather be flakes than tools (Figure 13).

GPS: 27°45'52.0"S; 23°04'01.1"E



**Figure 13: LSA artefacts at site EXIGO-SG461-SA01.**

- EXIGO-SG461-SA02 (no 1 on map)  
No stone tools could be found (Figure 14).



**Figure 14: View of site EXIGO-SG461-2A02.**



- EXIGO-SG461-SA03 (no 2 on map)

Only four LSA stone artefacts were identified. These are extremely crude and likely to rather be flakes than tools (Figure 15).

GPS: 27°46'18.1"S; 23°04'02.4"E



**Figure 15: LSA artefacts at site EXIGO-SG461-SA03.**

- Occurrence 4

A single LSA artefact was noted between pylon 77 and 105 during the walk-down survey.

GPS: 27°46'18.1"S; 23°04'02.4"E

Regarding the sites he discovered, Kruger indicated that the Stone Age representations at the site are of interest due to the presence of formal stone tools, as well as its position within the larger Kathu Complex. A specialist analysis of lithics from the sites will provide an understanding of the development and spread of the early MSA in the Northern Cape and Karoo areas. He further stated that these features are of significance in terms of heritage value and impact on sensitive heritage receptors is foreseen. As such, the heritage resources will require further mitigation measures in order to conserve the historical fabric of these features.

According to him, the low density Middle Stone Age (MSA) scatter (Site EXIGO-SG461-SA01) is of limited scientific value within its local site context due to the general loss of context and site integrity for the artefacts at the quarry, and the low density of diagnostic formal tools. The significance of the impact on the heritage resources is

considered low, but the threshold of the impact can be limited to a negligible impact (Kruger 2014: 50).

For the other two sites, large scatters of MSA Material, (Site EXIGO-SG461-SA02, Site EXIGO-SG461-SA03) he indicated that these are of interest due to the presence of formal stone tools, a higher density of artefacts as well as the position of the occurrence within the larger Kathu Stone Age Complex. The significance of the impact on the heritage resources is considered moderate, but the threshold of the impact can be limited to a negligible impact by the implementation of mitigation measures. He recommended Phase 2 investigations and monitoring) for the sites, if / when required (Kruger 2014: 51).

He indicated that the project could continue, but provided that all mitigation measures supplied in his report is implemented prior to the commencement of construction on the site, and subject to the necessary approval from the relevant Heritage Resources Agency. A buffer zone of at least 20 m around these sites were recommended (Kruger 2014: 52).

## **10. CONCLUSION AND RECOMMENDATIONS**

The heritage survey the indicated area was completed successfully. Three sites identified by Kruger (2014) was visited and another single LSA stone tool was identified.

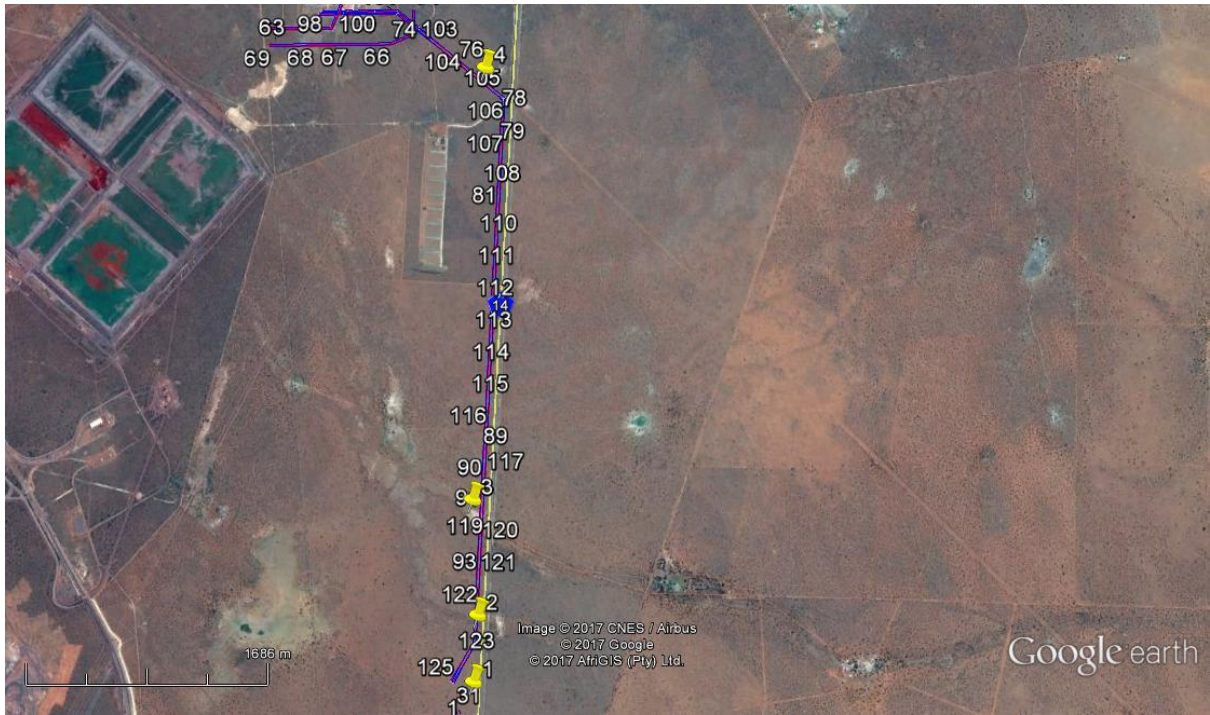
Firstly, it should be noted that none of the finds are sizeable enough to be regarded as sites and should rather be called occurrences.

Regarding the location of these four occurrences, it should be noted that only number 2 and 4 are located within the development footprint (Figure 16-19). It means that there will not be any impact on numbers 1 and 3, which also are more than 20 m from the development (as proposed by Kruger). Impact therefore is minimal.

It should however be noted that none of these are regarded as being important due to the limited number of stone artefacts present. They are of negligible significance.

As that the artefacts identified during the current survey were all from the LSA and not the MSA as Kruger indicated. This likely means that both the MSA and LSA are represented, but that these are constantly washed away during the rainy season and others are exposed from time to time.





**Figure 16: Location of the four occurrences along the proposed development.**



**Figure 17: Location of no. 1 and 2, indicating that only no. 2 will be impacted on.**





**Figure 18: Location of occurrence no. 3, again outside of the footprint of the development.**



**Figure 19: Location of occurrence no. 4 inside of the development footprint.**

The following is recommended:

1. It is the opinion of the author that none of the four locations where stone tools were found warrant being called sites. The artefacts are too few and of a bad quality and should therefore be called occurrences.
2. All of these are of a negligible heritage significance and only two will be impacted on.
3. This report is seen as sufficient mitigation and the proposed development may therefore continue.
4. It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. It is clear from the report that this indeed also happened during the walk-down survey. This indicates that the entire area may yield more such artefacts and that some of these may only be unearthed during construction activities. Care should therefore be taken when development commences that if any of these are discovered, work on site immediately cease and a qualified archaeologist be called in to investigate the occurrence.

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

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

## 11. REFERENCES

Archaeos database.

Beaumont, P. 2000. **Archaeological Impact Assessment Archaeological Scoping Survey for the purpose of an EMPR for the Sishen Iron Ore Mine.** (Unpublished report, Kimberley, McGregor Museum).

- Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.
- Coertze, P.J. & Coertze, R.D. 1996. **Verklarende vakwoordeboek vir Antropologie en Argeologie.** Pretoria: R.D. Coertze.
- De Jong, R.C. 2010. **Heritage impact assessment report: proposed manganese and iron ore mining right application in respect of the remainder of the farm Paling 434, Hay registration division, Northern Cape.** Unpublished report, Pretoria, Cultmatrix.
- Hall, M. & Smith, A.B. (Eds.). **Prehistoric pastoralism in southern Africa. South African Archaeological Society Goodwin Series 5.**
- 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.
- Inskeep, R.R. 1978. **The peopling of southern Africa.** Cape Town: David Phillip.
- International Finance Corporation. 2012. **Overview of performance standards on Environmental and Social Sustainability. Performance Standard 8, Cultural Heritage.** World Bank Group.
- Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.
- Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.
- Kruger, N. 2014. **Sishen Iron Ore Mine: Stormwater infrastructure for the Sishen Mine, John Taolo Gaetsewe District Municipality, Northern Cape Province. Archaeological Impact Assessment.** (Unpublished report, Pretoria, AGES).
- Kruger, N. 2014. **Sishen Iron Ore Company: proposed Sekgame Electricity Infrastructure Expansion Project on the farm Sekgame 461, Sishen Mine, Northern Cape Province.** Archaeological Impact Assessment (Unpublished report, Exigo, Pretoria.)
- Mabale, D. 2009. **Heritage Impact Assessment for the extension of the Ferrum Substation (upgrade and re-alignment of lines) in Kathu, Northern Cape.** (Unpublished report).
- Mitchell, P. 2002. **The archaeology of southern Africa.** Cambridge: Cambridge University Press.
- Morris, D. 2005. **Report on a Phase 1 Archaeological Impact Assessment of proposed mining areas on the farms Ploegfontein, Klipbankfontein, Welgevonden, Leeuwfontein, Wolhaarkop and Kapstewel, west of Postmasburg, Northern Cape.** (Unpublished report, Kimberley: McGregor Museum).
- Pelser, A.J. 2012. **A 2nd report on a Heritage Impact Assessment for the upgrade of Transnet's Glosam Siding for PMG's Bishop Mine (Loading bay) on portion 2 and the remainder of Gloucester 674 near Postmasburg, Tsantsabane Local Municipality, Northern Cape.** (Unpublished report, Groenkloof, Archaetnos).
- Pelser, A.J. & Van Vollenhoven, A.C. 2009a. **A report on a Heritage Impact Assessment study for proposed mining development on the remaining extent and portions 2, 3, 4 and 5 of Kapstewel 436, Kuruman Registration**

- District, Siyanda District Municipality, Northern Cape Province.** (Unpublished report, Wonderboompoort, Archaetnos).
- Pelser, A.J. & Van Vollenhoven, A.C. 2009b. **A report on a Heritage Impact Assessment study for proposed mining development on the remaining extent of the farm Lohatla 673, Kuruman Registration District, Siyanda District Municipality, Northern Cape Province.** (Unpublished report, Wonderboompoort, Archaetnos).
- Pelser, A.J. & Van Vollenhoven, A.C. 2011. **A report on a Heritage Impact Assessment for the upgrade of Transnet's Glosam Siding for PMG's Bishop Mine (Loading bay) on portion 2 and the remainder of Gloucester 674 near Postmasburg, Tsantsabane Local Municipality, Northern Cape.** (Unpublished report, Groenkloof, Archaetnos).
- 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.
- Snyman, P.H.R. 2000. **Changing tides. The story of ASSMANG.** Johannesburg: The Associated Manganese Mines of South Africa Limited.
- 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 Vollenhoven, A.C. 2016. **A report on a cultural heritage impact assessment for the proposed ESKOM Sekgame-Bulkop-Sishen Project in the Northern Cape Province.** (Unpublished report, Groenkloof, Archaetnos).
- Van Vollenhoven, A.C. & Pelser, A.J. 2010. **A report on the heritage relating to the closure EMP of the Assmang Glosam Mine close to Postmasburg, Northern Cape.** (Unpublished report, Wonderboompoort, Archaetnos).
- Webley, L. 2014. **Scoping assessment: proposed construction of RE Capital 10 PV Development on remaining extent of the farm Kapstewel 436, Postmasburg, Northern Cape.** (Unpublished report, St James, ACO Associates).

## **APPENDIX A**

### **DEFINITION OF TERMS:**

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

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

Feature: A coincidental find of movable cultural objects.

Object: Artefact (cultural object).

(Also see Knudson 1978: 20).



## **APPENDIX B**

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

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

## APPENDIX C

### SIGNIFICANCE AND FIELD RATING:

#### Cultural significance:

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

#### Heritage significance:

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

#### Field ratings:

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