

Archaetnos Culture & Cultural
Resource Consultants
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**A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED ESKOM
KIMBERLEY STRENGTHENING PHASE 4 PROJECT BETWEEN THE BOUNDARY
AND ULCO SUBSTATIONS IN THE NORTHERN CAPE PROVINCE**

For:

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SUMMARY

Archaetnos cc was appointed by Landscape Dynamics to conduct a Heritage Impact Assessment (HIA) for the ESKOM Kimberley Strengthening Phase 4 Project between the Boundary and Ulco substations. This is located in the Northern Cape Province.

It entails the erection of approximately 94 km of double circuit power line, as well as the building of a new substation at Ulco next to the existing Ulco substation. The project is situated to the west of Kimberley, with the Boundary substation to the east of the town. Three possible route corridors for the power lines were investigated during an overview site investigation. These were adapted as a result of the scoping investigation and these were now investigated. These were named Alternative One Route and Alternative One Route Corridor, Alternative One (b) Route and Alternative One (b) Route Corridor and Alternative Two Route and Alternative Two Route Corridor.

The fieldwork undertaken revealed one site of cultural heritage significance. The site is within the Alternative Two Route Corridor. However, it would be easy to avoid the site.

From a heritage perspective it definitely seems as if the Alternative Two Route Corridor has more possible heritage based issues. Apart from the site identified, many other sites are known along this route. It would therefore be much better to rather avoid this alternative.

However, should it be decided to use Alternative Two, it would be possible to mitigate the impact on heritage resources. This option may therefore be supported on condition that mitigation measures be implemented.

None of the three alternatives routes are within a 10 km radius of a world heritage site.

There is no specific preference for any of the other two route alternatives. Therefore either of these (Alternative One or Alternative One (b)) are recommended. Areas on these two alternative routes to be avoided would be high-lying areas such as hills or mountains, but very few of these were encountered during the survey.

No further action is necessary with regards to the site identified during the survey.

It should be noted that due to the nature of the subterranean presence of archaeological and/or historical sites, features or artifacts, the possibility to find these during the course of construction work are always real. Care should therefore be taken, when development work commences, that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate. The results of such an investigation should be submitted to SAHRA and the recommended mitigation measures should be included in the Environmental Management Plan.

By not placing the pylon positions on any such sites, no further action will be necessary as these sites may be over-spanned. The only exception is graves which may not be over-spanned and for which a 20 m buffer zone is recommended. A final walk-down, to inspect pylon positions, is therefore recommended.

The proposed development may therefore continue as long as the above mentioned recommendations are adhered to.

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1. INTRODUCTION

Archaetnos cc was appointed by Landscape Dynamics to conduct a Heritage Impact Assessment (HIA) for the ESKOM Kimberley Strengthening Phase 4 Project between the Boundary and Ulco substations. This is located in the Northern Cape Province.

It entails the erection of approximately 94 km of double circuit power line, as well as the building of a new substation at Ulco next to the existing Ulco substation. The project is situated to the west of Kimberley, with the Boundary substation to the east of the town. Three possible route corridors for the power lines were investigated during an overview site investigation. These were adapted as a result of the scoping investigation and these were now investigated (Figure 1-2).

The client indicated the area where the proposed development is to take place. These were named Alternative One Route and Alternative One Route Corridor, Alternative One (b) Route and Alternative One (b) Route Corridor and Alternative Two Route and Alternative Two Route Corridor. The survey was confined to this area.

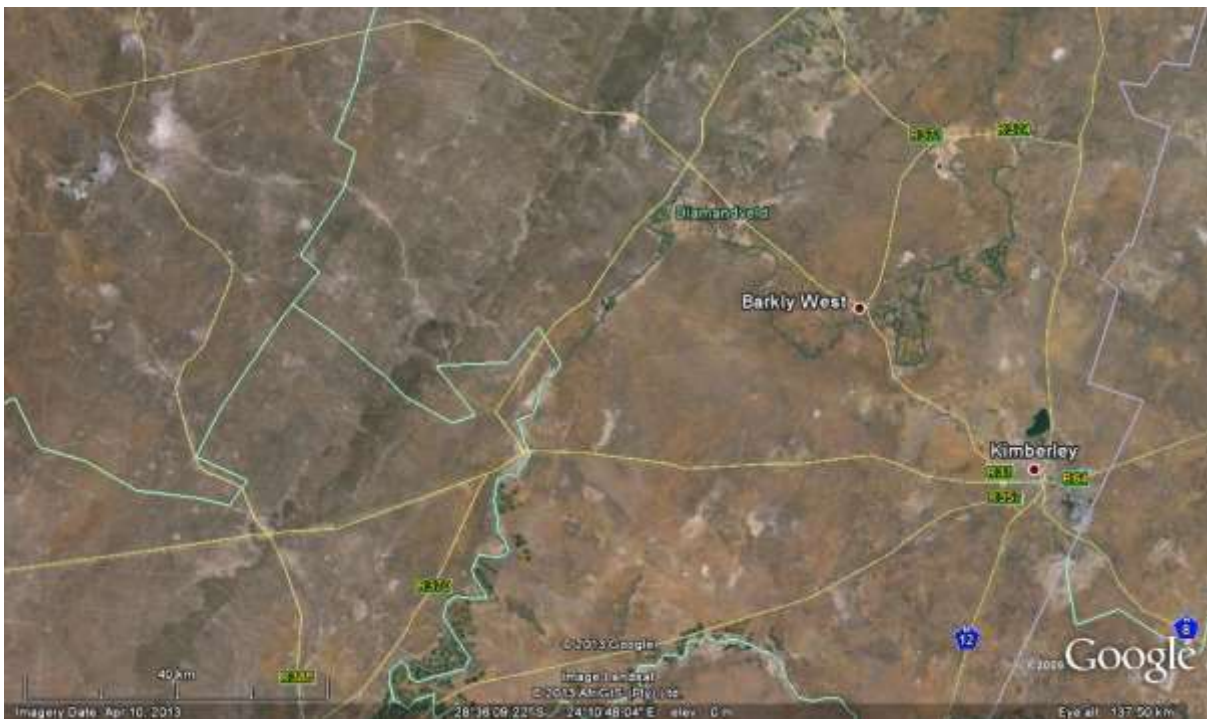


Figure 1: Location of the towns of Kimberley and Barkly West in the Northern Cape Province. North reference is to the top.

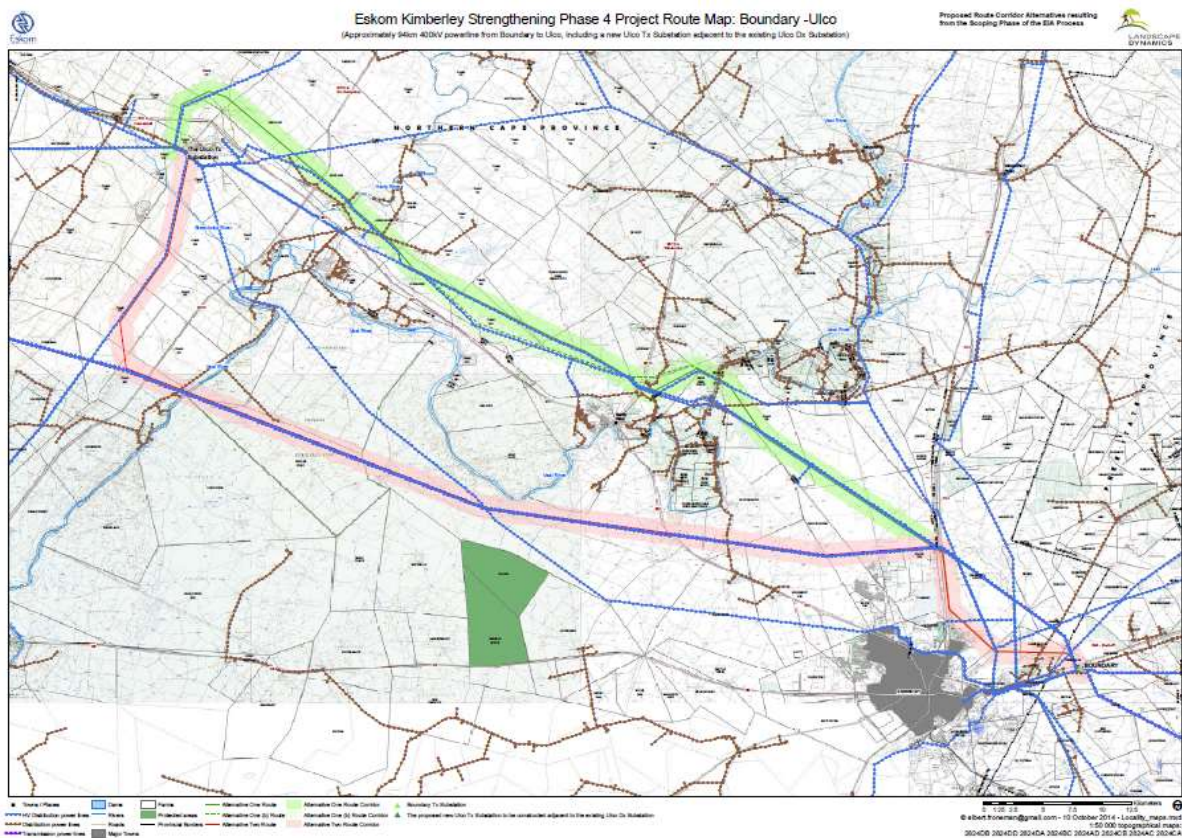


Figure 2: Map indicating the three alternative route corridors. These were named Alternative One Route and Alternative One Route Corridor (green), Alternative One (b) Route and Alternative One (b) Route Corridor (green lines) and Alternative Two Route and Alternative Two Route Corridor (pink).

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). However, since this was a basic assessment, a detailed survey was not done and therefore these sites only are an indication of what is to be expected
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. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources.
5. Recommend suitable mitigation measures should there be any sites of significance that might be impacted upon by the proposed development.
6. Review applicable legislative requirements.

3. CONDITIONS AND ASSUMPTIONS

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

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structures and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix B).
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. Factors such as the density and height of vegetation also have an influence on the horizontal and vertical archaeological visibility. Sometimes gates are locked which also hampers the possibility to obtain access. Developers should however note that the 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 artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

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

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

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. 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 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 paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or
- d. Bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- e. Alter or demolish any structure or part of a structure which is older than 60 years as protected.

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

Human remains

Graves and burial grounds are divided into the following:

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

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

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

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

Human remains that are less than 60 years old are subject to provisions of the 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 artifacts and structures need to be removed is should be done by professionals and by abiding to the applicable legislation. The removal of cultural heritage resources may however only be considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of

the overall project to the effected communities. Again professionals should carry out the work and adhere to the best available techniques.

It is necessary to engage into consultation with affected communities. 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 extraordinary 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 heritage practices and was aimed at locating as much cultural heritage sites as possible in the area of investigation. A field visit was done and the area screened by means of a helicopter as well as motor vehicle in order to locate possible objects, sites and features of cultural significance in the area of proposed development. When necessary a foot survey was done.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)¹, while photographs were also being taken where needed. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration, in this case, the route corridors of 2 km wide as well as a 5 km radius around proposed new substations.

Since it was a linear development crossing many farm boundaries, the foot survey was limited to investigation certain areas where the vegetation seemed to indicate that there may be a disturbance which could be as a result of the presence of a heritage resource (Figure 3). The length of the proposed route is approximately 94 km, but of course more as one needs to take the alternative also into consideration. The field survey was done by one person and took 8 hours to complete.

¹ A Garmin Oregon 550 with an accuracy factor of a few meters.



Figure 3: Track route of the surveyed routes.

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 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

The three proposed alternative routes runs through a large number of farms (see Figure 2). For the first section, from Boundary to the N12 road, the three corridors run together. After that, following a western direction, the Alternative One Route and Alternative One (b) Route) goes to the north of the R31 road, until it crosses to the south, right at the Ulco substation. It mainly follows farm boundaries and existing Eskom lines. The only difference between these two route alternatives is that Alternative One (b) runs to the south of Alternative One for a short section in the centre of the proposed corridor.

The Alternative Two Route runs to the south of the R31 road, again following farm boundaries and existing Eskom lines. It then turns to the north to end at Ulco where a new substation is to be erected.

The general view on all three alternative routes is basically the same. The vegetation consists of low grassland with only a few trees. There are however areas with long grass and some clumps of trees, in certain cases clearly pioneer species, indicating earlier disturbance of the area by human activities (Figure 4). These mainly consist of old fields, agricultural activities and indications of old prospecting and mining. The underlying sand is red and here and there forms dunes and many barren spots in between the vegetation (Figure 5-6). Most of the vegetation seems natural and the area mainly hosts game farms. Signs of agricultural activities are however also present. The proposed lines will mainly follow existing Eskom lines, running through areas with at least some degree of disturbance (Figure 7-9).

The topography is reasonably flat, but some sand dunes as well as a few low hills are found within the landscape (Figure 10). The area where the new Ulco substation is being planned is flat, containing reasonably dense vegetation (Figure 11). Most of the only rivers identified consist of non-perennial streams. The Alternative One Route Corridor however crosses the Vaal River towards the north-east of Barkly West.



Figure 4: General view along Route Alternative One and One (b).



Figure 5: View of vegetation on a sand dune along Alternative Two.



Figure 6: Red sand and low vegetation along Alternative Two.



Figure 7: General view of area around existing power lines along Alternative One.



Figure 8: Another view of vegetation, sand dunes and existing power lines along Alternative Two.



Figure 9: Another view of scarce vegetation and existing power lines along Alternative Two.



Figure 10: Example of one of the low hills along Alternative Two.



Figure 11: Area where the new Ulco substation is to be erected.

8. HISTORICAL CONTEXT

Only one site of cultural heritage significance was located during the survey. However, due to the constraints mentioned earlier (access to farms and dense vegetation in certain areas), it needs to be considered that sites may become known later. These need to be dealt with in accordance with the legislation discussed above.

In order to enable the reader to better the sites identified as well as to understand possible archaeological and cultural features that may be unearthed during construction activities, it is necessary to give a background regarding the different phases of human history. 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 only a few such sites are indicated here, but many sites from the historical era are listed. It also is clear that many new developments are taking place in Kimberley and Barkly West and these have been discussed in heritage reports, mainly done by David Morris. However, none of these are located on any of the three alternative routes indicated.

In general the environment does provide shelter and building material for prehistoric communities. This is however limited to the hills which, with the exception of one, seem to be too far from any of the routes to be impacted on. One may therefore find isolated artefacts such as stone tools and possible farm houses or graves along these routes.

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.

Significant Early Stone Age sites are known from the farm Drooge Veldt no. 292, close to Barkly West (Beaumont 2012). Alternative Two runs over this farm and therefore this may not be a good option for the power lines.

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 Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley to the north (Morris 2005: 3). Apart from the first mentioned, the other are significantly far from the study 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). Again these are actually far from the study area.

The Rooipoort archaeological site, in the Rooipoort Nature Reserve inter alia consists of San petroglyphs (Personal communication: PC Anderson). The reserve includes the farms Waterkolk 95, Randt Plaas 96, Vogelstruis Pan 98 and Klipfontein 99. Beaumont (2012) also identified several occurrences of rock engravings and paintings on the farm Drooge Veldt 292. This is also where Alternative Two is proposed.

The Wildebeestkuil Rock Art Centre is found to the south of Alternative Two, but too far away to be impacted on. It does however serve as proof that Stone Age sites are situated in the broader geographical area.

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 settle in the area. One will therefore more than likely find sites or associated with these people. Stone Age sites may 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. Isolated stone tools will very likely be identified, but due to it being out of context, it does carry a high heritage value.

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. Therefore the chances of finding any Iron Age remains in the study area are reasonably slim.

During the Late Iron Age (LIA), people stayed in 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). This however is more than 100 km away from the surveyed area.

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 18th 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, Hlakwa 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 18th century and the beginning of the 19th 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).

In the early 19th century, the London Missionary Society came to the Kimberley area. Boer farmers that moved inland from the Cape Colony during the 1830s and 1840s, further added to this arena of conflicting claim (Roberts 1985: 3-7).

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).

Kimberley came into being after the so-called Diamond rust of the 1860's and 1870's (Van Zyl 1986: 16-17). Accordingly it has many buildings with historical significance. These include, but is not limited to the Milner Street Memorial, city hall and market square, old stables in Stockdale Street, De Beers head office, Star of the West hotel, and the Alexander McGregor Museum (SAHRA database). The route corridors however pass the town and therefore there will be no impact on these.

The route corridors also pass the town of Barkly West. This town contains provincial heritage sites such as an old toll house, a bridge over the Vaal River, the St Mary's Church, old Magistrate's Court and the Dutch Reformed Church. It also contains a declared heritage area, being the old mining village called Sydney-on-Vaal (SAHRA database).

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).

The Northern Cape saw some action during the Anglo-Boer War. The town of Kimberley was beleaguered by the Boers during the Anglo-Boer War, from 3 November 1899 until 15 February 1900 (Pretorius 1985: 15; 21). In the Dronfield Nature Reserve multiple Anglo-Boer War sites have been identified (Personal communication: PC Anderson). This reserve, consisting of the farms Samaria 75, Picardi 72 and Kenilworth Estate 71, was however excluded from the final route alternatives as a result of the scoping investigations made earlier (see Van Vollenhoven 2014).

One may therefore expect sites associated with the first white farmers, early missionaries, Anglo-Boer War and mining companies. This of course would include graves. Beaumont (2012) has indeed found two grave sites, walled sites (e.g. stock kraals), other building remains and numerous old diamond diggings on the farm Drooge Veldt 292 which lies on Alternative Two.

The site identified during the survey, dates to this period in time. It was found against the slopes of a hill to the west of the R31 road and very close to, but to the north of Alternative Two. This may be impacted on should one of this alternative be chosen.

9. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

One site of note was identified, being a historical mining site. The site is reasonably close to Alternative Two and inside of the Alternative Two Route Corridor and may therefore be impacted on (see Impact Assessment Tables – Appendix F). No sites were identified on the other two route alternatives.

9.1 Site 1 – Historical mining site

The site consists of various (at least 21) stone packed structures or structures built with brick and clay. It includes at least three circular shaped kraals of between 30 and 50 m in diameter, two smaller stone circles of about 10 m in diameter and various square/rectangular structures of between 5 and 20 m in size. Some of these are attached to the circular structures (Figure 12). It seems to be associated with mine diggings, lying to the north thereof.

GPS: 28°36'04.85S
24°33'17.79"E



Figure 12: Remains of Historical mining site.

The site is regarded as having a medium cultural significance as it seems not to be unique for this area. It reminds one of the site described by Beaumont (2012), closer to Barkly West. The field rating for the site is high/ medium, Local Grade IIIB. The site should therefore be included in the heritage register and may be mitigated.

However, the site may be over-spanned by the power cables, as long as no pylon is placed on it. Therefore there is no reason to impact on the site. It should remain as it is and no further action is needed.

10. CONCLUSIONS AND RECOMMENDATIONS

The site identified is indicated in Figure 13. This is within the 2 km corridor of the Alternative Two Route Corridor.



Figure 13: Location of the sites identified during the survey.

The final recommendations are as follows:

- None of the three alternative routes are within a 10 km radius of a world heritage site and therefore other factors need to be considered in determining the best alternative.
- From a heritage perspective it definitely seems as if the Alternative Two Route Corridor has more possible heritage based issues. Apart from the site identified, many other sites are known along this route. It would therefore be much better to rather avoid this alternative.
- However, should it be decided to use Alternative Two, it would be possible to mitigate the impact on heritage resources. This option may therefore be supported on condition that mitigation measures be implemented.
- Mitigation would include to firstly determine if the heritage sites are directly impacted on (since a corridor was investigated, it might be possible to steer clear from these sites. Should there be no impact, the project may continue. Should there be impact, each individual site needs to be assessed to determine the best way of dealing therewith. This would include Phase II studies.
- It is therefore recommended that the final route, if on this corridor, be assessed to determine possible direct impact on heritage resources.
- From a heritage perspective there is no specific preference for any of the other two route alternatives. Therefore either Alternative Route One or One (b) may be used.

- Utilizing these alternatives however does not come without problems, but it does seem less than in the case of Alternative Two.
- Areas on Alternative One and One (b) to be avoided would be high-lying areas such as hills or mountains, but very few of these were encountered during the survey.
- It seems logical that a walk-down survey would be needed once pylon positions have been fixed, in order to determine and ensure that no heritage site is being impacted on. This would go for any option chosen.
- It should be noted that due to the nature of the subterranean presence of archaeological and/or historical sites, features or artifacts, the possibility to find these during the course of construction work are always real. Care should therefore be taken, when development work commences, that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate.
- The results of such an investigation should be submitted to SAHRA and the recommended mitigation measures should be included in the Environmental Management Plan.
- It can be concluded that the chances of finding Stone Age sites is reasonably low as long as the mountains and hills are being avoided. Chances are high to find loose stone tools, but since these are out of context, it would not be important and may be ignored.
- Chances to find Iron Age sites and occurrences are also very slim. Again, by avoiding high-lying areas, this may never be an issue.
- One will more than likely find historical structures and graves and the location thereof on the landscape cannot be predicted.
- However, by not placing the pylon positions on any such sites, no further action will be necessary as these sites may be over-spanned. The only exception are graves which may not be over-spanned and for which a 20 m buffer zone is recommended.
- The proposed development may therefore continue as long as the above mentioned recommendations are adhered to.

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APPENDIX A

DEFINITION OF TERMS:

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

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

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

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

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- 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, paleontological, 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, paleontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.

APPENDIX F

IMPACT ASSESSMENT IMPACT ASSESSMENT

Extent of impact	Explanation of extent
Site	Impacts limited to construction site and direct surrounding area
Local	Impacts affecting environmental elements within the local area / district
Regional	Impacts affecting environmental elements within the province
National	Impacts affecting environmental elements on a national level
Global	Impacts affecting environmental elements on a global level

Duration of impact	Explanation of duration
Short term	0 - 5 years. The impact is reversible in less than 5 years.
Medium term	5 - 15 years. The impact is reversible in less than 15 years.
Long term	>15 years, but where the impacts will cease if the project is decommissioned
Permanent	The impact will continue indefinitely and is irreversible.

Probability of impact	Explanation of Probability
Unlikely	The chance of the impact occurring is extremely low
Possible	The impact may occur
Probable	The impact will very likely occur
Definite	Impact will certainly occur

Magnitude/Intensity of impact	Explanation of Magnitude/Intensity
Low	Where the impact affects the environment in such a way that natural, social and cultural functions and processes are not affected
Moderate	Where the affected environment is altered, but natural, social and cultural functions and processes continue albeit in a modified way
Severe	Where natural, social and cultural functions or processes are altered to the extent that it will temporarily or permanently cease

Significance of impact	Explanation of Significance
None	There is no impact at all
Low	Impact is negligible or is of a low order and is likely to have little real effect
Moderate	Impact is real but not substantial
High	Impact is substantial
Very high	Impact is very high and can therefore influence the viability of the project

Impact Description	Severity of Impact without Mitigation None, Low, Moderate, High, Very High	Extent Site / Local / Regional / National / Global	Duration Short / Medium / Long / Permanent	Probability <i>Unlikely / Possible / Probable / Definite</i>	Magnitude / Intensity Low / Moderate / Severe	Severity of Impact After Mitigation None, Low, Moderate, High, Very High
1. Placement of pylons on historical mining site	Very high	Local	Permanent	Unlikely	Severe	None
2. Over-spanning historical mining site	Moderate	Local	Long term	Possible	Moderate	None
3.						
4.						
5.						
6.						
7.						
8.						
9.						