Heritage Scoping Report for the proposed Establishment of the Proposed Bosjesmansberg Solar Energy Facility East of Copperton, Northern Cape Province

Prepared For

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By

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EXECUTIVE SUMMARY

Site name and location: The proposed Bosjesmansberg solar energy facility east of Copperton, Northern Cape Province on the Farm Bosjesmansberg 67 portion 1.

1: 50 000 Topographic Map: 2922 CD, 2922 DC

EIA Consultant: Savannah Environmental (Pty) Ltd.

Developer: Networx Renewables (Pty) Ltd

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 6 September 2013

Findings of the Assessment:

This scoping study revealed that a range of heritage sites occur in the larger region consisting of Stone Age Sites, stone enclosures and historical sites and similar sites can be expected within the study area. Other studies in the area highlighted the archaeological importance of pans in the area (Kiberd 2006, Wiltshire 2011, Orton 2012) and if any occur within the study area these should be avoided. Every site is relevant to the Heritage Landscape, but it is anticipated that few if any has conservation value, therefore no fatal flaws are expected. This assumption must be verified by a field survey during the impact assessment phase.

Based on the current information obtained for the area at a desktop level it is anticipated that any sites that occur within the proposed development area will have Grade III Significance.

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- The technology described in any report
- Recommendations delivered to the Client.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment				
ASAPA: Association of South African Professional Archaeologists				
BIA: Basic Impact Assessment				
CRM: Cultural Resource Management				
ECO: Environmental Control Officer				
EIA: Environmental Impact Assessment*				
EIA: Early Iron Age*				
EIA Practitioner: Environmental Impact Assessment Practitioner				
EMP: Environmental Management Plan				
ESA: Early Stone Age				
GPS: Global Positioning System				
HIA: Heritage Impact Assessment				
LIA: Late Iron Age				
LSA: Late Stone Age				
MEC: Member of the Executive Council				
MIA: Middle Iron Age				
MPRDA: Mineral and Petroleum Resources Development Act				
MSA: Middle Stone Age				
NEMA: National Environmental Management Act				
PRHA: Provincial Heritage Resource Agency				
SADC: Southern African Development Community				
SAHRA: South African Heritage Resources Agency				

*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.

GLOSSARY

Archaeological site (remains of human activity over 100 years old) Early Stone Age (2 million to 300 000 years ago) Middle Stone Age (300 000 to 30 000 years ago) Late Stone Age (30 000 years ago until recent) Historic (approximately AD 1840 to 1950) Historic building (over 60 years old) Lithics: Stone Age artefacts

1. INTRODUCTION

Heritage Contracts and Archaeological Consulting CC was contracted by Savannah (Pty) Ltd to conduct a Heritage Scoping Report for the proposed Bosjesmansberg Solar Energy Facility, located close to Copperton in the Northern Cape. The proposed development is to be located on the Farm Bosjesmansberg 67 portion 1, an area of 5000 ha although the actual footprint of the solar facility will be much smaller. The heritage scoping report forms part of the EIA for the proposed project.

The aim of the scoping report is to conduct a desktop study to identify possible heritage resources within the project area and to assess their importance within a Local, Provincial and National context. The study furthermore aims to assess the impact of the proposed project on non - renewable heritage resources and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage legislation.

The report outlines the approach and methodology utilized for the Scoping phase of the project. The report includes information collected from various sources and consultations. Possible impacts are identified and mitigation measures are proposed in the following report. It is important to note that no field work was conducted as part of the scoping phase but will be conducted as part of the Impact Assessment phase of the EIA.



Figure 1: Location of the Bosjesmansberg Solar facility

1.2 Terms of Reference

The main aim of this scoping report is to determine if any known heritage resources occur within the study area and to predict the occurrence of any possible heritage significant sites that might present a fatal flaw to the proposed project. The objectives of the scoping report were to:

- » Conduct a desktop study:
 - Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
 - * Gather data and compile a background history of the area;
 - * Identify known and recorded archaeological and cultural sites;
 - * Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.
- » Report

The reporting of the scoping component is based on the results and findings of the desk-top study, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the IA Phase highlighted. Reporting will aim to identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 development stages of the project, i.e. construction, operation and decommissioning. Reporting will also consider alternatives should any significant sites be impacted on by the proposed project. This is done to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage Legislation.

1.3 Nature of the development

The solar energy facility is proposed to accommodate an array of photovoltaic (PV) panels with an export capacity of up to 300MW. It is proposed to make use of either static or tracking solar panel technology for this facility. Other infrastructure associated with the facility will include:

- » Arrays of PV panels
- » Appropriate mounting structures
- » Cabling between the project components, to be lain underground where practical.
- » An on-site substation and overhead power line to facilitate the connection between the solar energy facility and the Eskom grid via one of the following options:
 - A loop in/loop out of the Cuprum-Burchell 132kV power line which traverses the site;
 - Construction of an overhead distribution power line of approximately 15-20km in length to either Kronos Substation or to Cuprum Substation.
- » Internal access roads and fencing.
- » Workshop area for maintenance, storage, and offices.

1.4 The receiving environment

The study area is located approximately 15km to the east of Copperton. The site is bordered by the 357 provincial road to the south and a Eskom power line traverses the site from east to west on the northern portion of the farm. There are various drainage lines draining the study area all flowing in a south westerly direction. Not many landscape features like pans or farmsteads are noted from the 1:50 000 map of the area, although higherlying areas do occur to the east of the study area that could contain archaeological material. The vegetation is predominantly Bushmanland Arid Grassland vegetation in the Nama-Karoo biome (Mucina & Rutherford 2006) which consists of Karoo scrub and grass and a few isolated *Acacia karoo* trees. Historical imagery on Google earth indicates that the land has been fallow for a number of years.

2. APPROACH AND METHODOLOGY

The assessment is to be undertaken in two phases, a desktop study as part of the Scoping phase and an Archaeological Impact Assessment as part of the Environmental Impact Assessment phase. This report concerns the scoping phase. The aim of the scoping phase is to cover archaeological and cultural heritage data available to compile a background history of the study area. In order to identify possible heritage issues or fatal flaws that should be avoided during development.

This was accomplished by means of the following phases (the results are represented in section 4 of this report):

2.1 Literature search

Utilising data for information gathering stored in the SAHRA archaeological database, published articles on the archaeology and history of the area and a search in the National archives. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites, graves, architecture, oral history and ethnographical information on the inhabitants of the area.

2.2 Information collection

The SAHRA report mapping project (Version 1.0) was consulted to further collect data from CRM practitioners who undertook work in the area to provide the most comprehensive account of the history of the area where possible.

2.3 Public consultation

No public consultation was conducted during this phase.

2.4 Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located.

2.5 Genealogical Society of South Africa

The database of the genealogical society was consulted to collect data on any known graves in the area.

3. LEGISLATION

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is of importance and the following sites and features are protected:

- 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 or scientific or technological value.

The national estate that includes the following:

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

Section 34 (1) of the act deals with structures which is older than 60 years. Section 35(4) of this act deals with archaeology, palaeontology and meteorites. Section 36(3) of the National Heritage Resources Act, deals with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

3.1 Heritage Site Significance and Mitigation Measures

The presence and distribution of heritage resources define a Heritage Landscape. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage 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;
- » Potential to answer present research questions.

The criteria above will be used to place identified sites with in SAHRA's (2006) system of grading of places and objects which form part of the national estate. This system is approved by ASAPA for the SADC region. The recommendations for each site should be read in conjunction with section 11 of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National	Grade 1	-	Conservation; national
Significance (NS)			site nomination
Provincial	Grade 2	-	Conservation; provincial
Significance (PS)			site nomination
Local Significance	Grade 3A	High significance	Conservation; mitigation
(LS)			not advised
Local Significance	Grade 3B	High significance	Mitigation (part of site
(LS)			should be retained)
Generally Protected	-	High/medium	Mitigation before
A (GP.A)		significance	destruction
Generally Protected	-	Medium	Recording before
B (GP.B)		significance	destruction
Generally Protected	-	Low significance	Destruction
C (GP.C)			

4. REGIONAL OVERVIEW

4.1 General Information

4.1.1. Literature search

Two previous heritage studies were conducted in to the west of the study area (SAHRA report mapping project V1.0) by K van Ryneveld (2006 a,b,c). More recently J Orton (2012) conducted a study south of the study area on the farm Hoekplaas and Kaplan & Wiltshire (2011) on portion 3 and 4 of the farm Nelspoortjie, the farm bordering the study area to the west. Another portion of this farm (portion 5 of the farm Nelspoortje 103) was assessed (van der Walt 2012) .All these studies recorded ESA and MSA artefacts scattered over the landscape with MSA and LSA sites entered around pans. Orton also recorded stone kraals.

4.1 3. Public consultation

No public consultation was conducted during the scoping phase.

4.1.4. Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area was utilised to identify possible places where archaeological sites might be located.

4.1.5. Genealogical Society of South Africa

No grave sites are indicated within the study area.

5. HISTORIC PERIOD

5.1. Introduction

The following section will endeavour to give an account of the history of the area and district where the farm Bosjemansberg 67 Portion 1 is located. The report is divided into the following sections:

- » General history of human settlement in the area
- » The history of black and white interaction in the farm area

5.2. Historiography and Methodology

It was necessary to use a range of sources in order to give an accurate account of the history of the area in which the farm Bosjemanskraal 67 portion 1 is located. Sources included secondary source material, maps and archival documents. Although many sources exist on the history of towns and districts, it is often difficult to compile histories that focus on very specific parts of the area, such as individual farms. However information on the history of the surrounding area provides valuable insights into the general history of the study area and helps to contextualise the farm.

This study provides general information as part of the scoping study of the area. The following are relevant sources that can be consulted in the future, if a more thorough investigation is done on the history of the farm area:

- Anderson, E. A. 1987. *A history of the Xhosa of the Northern Cape, 1795-1879.* MA Thesis. Cape Town: University of Cape Town.
- Evans, M. M. 2000. *Encyclopedia of the Boer War. 1899 1902.* Cornwall: MPG Books Limited.
- Hocking, A. 1983. *Kaias and cocopans: the story of mining in South Africa's Northern Cape*. Johannesburg: Hollards Publishers.
- Mountain, A. 2003. The first people of the Cape. Claremont: David Philip Publishers.
- Nasson, B. 1988. The War of Abraham Esau 1899-1901: Martyrdom, Myth and Folk Memory in Calvinia. *African Affairs*, Vol. 87, No. 347 (Apr., 1988), pp. 239-265.
- South Africa. Railways and Harbours Board. 1914. *Report of the Board of the South African Railways and Harbours on a proposed line of railway from Prieska to Upington*. Cape Town.

5.3. Maps Of The Area Under Investigation



Figure 2: A Google Earth image of the Study area (red polygon) in relation to the town of Prieska. (Google Earth. 2013. [1])



Figure 3: A Google Earth image showing the study area in relation to the town of Copperton (Google Earth. 2013. [2]).



Figure 4: Map of the Cape Colony in 1901. This map was compiled from information supplied by the Attorney General's Department at the time. One can see the Prieska district, in which the farm Bosjemansberg was located. The lighter areas surrounding the Prieska district were occupied at this stage of the Anglo-Boer War. (National Archives of South Africa 1901)

5.4. A Brief History of Human Settlement And Black And White Interaction In The Copperton Area

In order to understand the historical context of a certain area, it is necessary to consider the geographic and climatic nature of the region in question. The town of Copperton is located in a region in South Africa known as the Upper Karoo. One gets a good idea of what the natural landscape in the Upper Karoo was like between the late 1700s and early 1800s when one reads the transcripts of some of the early European travellers who passed through the area. One C. J. Skead compiled a book in which many of these texts are assembled. In November 1900, the traveller W. Somerville wrote about the Groot Riviers Poort, or Prieskapoort, 10km south of Prieska and therefore not very far from Copperton. He noted that grasslands and thorn trees covered the landscape, but that no tree was to be seen. When he neared the Orange River, he noted that the banks were covered with wood, but only along the margin of the river. These were mainly willow and karee trees. Along the tributary streams were thorn trees. (Skead 2009: 87)

Exactly one year later, One P. B. Borcherds wrote about the Grootrivierpoort at Prieska, making similar remarks about the flora as Somerville did. He also noted that the *poort* at the entrance to the Orange River was known by the "natives" under the name of t'Gariep. When this traveller passed along the banks of the Orange River near Prieska in the same year, he made notes on the Bushmen, who were still present in the area at that time. Regarding the manufacturing of bows and arrows by the Bushmen, he noted that the wood of the bow was of a type of tree commonly known as *caree boomen*, which was very tough and pliable. The arrows were made of a type of reed fairly common along all springs and river flowing there, known as *fluitjies riet*. The Bushmen apparently used the poison of venomous plants and poison extracted from the fangs of snakes to smear on their arrow points. These people also found sustenance in a type of small bulb, commonly called *mans uitjies* by the Khoikhoi, which were described to be the size of small marbles and not unpleasant in taste. (Skead 2009: 87-88)

In September 1822, W. J. Burchell passed through Prieska, as well as the area to the south and southwest thereof. Some 50km southwest of Prieska, he found a large muddy dam, which was situated in a very extensive hollow flat. This would become a lake in the rainy season. There was apparently still some clean water to be found. The area around this was hard and dry, and plentifully strewed with stones and low shrubs. Burchell passed through Prieska to the Orange River in the same month. He noted that none of the bushes exceeded a foot in height. Nearer to the Orange River, the travelling party found a group of Khoikhoi camped in a grove.

By 1903, Copperton was located in an area in which the annual rainfall measured between 10 and 20 inches, and was therefore quite arid. The farm area is located in a summer rainfall region. By the early 1900s, the Prieska district, in which Copperton would be located, could not be considered a very agriculturally active area. Only between 25 and 50 sheep were kept per square mile, and only between 2 and 5 heads of cattle. The area where Copperton was later founded would have been too dry and too far from the Orange River to allow for the growing of crops. (Burton 1903: 40; 256)

The farm Bosjemansberg 67 is located in close proximity of the small town of Copperton, and the history of this town is therefore of importance. On 16 November 1991, an article was published in *Die Burger* with regards to the town Copperton. It was asserted that the old deserted Northern Cape mining town would be developed and populated as a "Volkstaatsdorp" (city state / Volkstaat town) by the Oranje Development Corps. It was said that Copperton would then be the second Volkstaat town in South Africa that had been developed as such a town. Though the town of Copperton had been abandoned at the time, a business centre, primary school, nursery school, an office development and a drive-in theatre had been developed. About 50% of the town's streets were tarred. (Anon 1991: 2)

In November 1991, the Weekend Argus also published an article regarding the development of Copperton as an Orania-like town. It was noted that the 300 hectares mine area near the town would be used for industrial development, and that agriculture, as well as light industry such as steel, rubber and textile industries, were expected to be developed in the town. It could not be ascertained whether this town was eventually developed in this way. (Anon 1991: 5)

In an article in the Patriot, dated December 1995, some background information is given on the history of the town of Copperton. This town is not very old, as it was only developed in 1972 with the establishment of a copper mine in the area. The mine closed in 1992, and Copperton was sold to a private person, on the condition that the houses in the town would be demolished. About 300 houses were broken down, when it was decided that some homes would be kept in order to develop a retirement town. These houses were apparently solidly built, with stone walls and sink roofs. It was noted that the area was very sparsely populated, and that the farmers in the area farmed with sheep. Next to the Orange River, corn, maize and grapes were planted. It was noted that the closest hospitals were located at Prieska, some 35 to 40 minutes' drive from Copperton, and linked with a tarred road. (Anon 1995: 4)

6. STONE AGE BACKGROUND

6.1 Stone Age Background of the study area

Beaumont *et al.* (1995: 240) observed that "thousands of square kilometres of Bushmanland are covered by a low density lithic scatter". These artefacts are generally very well weathered and mostly pertain to the ESA and MSA. Occasional LSA artefacts are also noted. What is noteworthy of the Northern Cape archaeological record is the presence of pans which frequently display associated archaeological material. Of interest here is the work of Kiberd (2001, 2005, 2006) who excavated Bundu Pan, some 25 to 30 km northwest of Copperton. The site yielded ESA, MSA and LSA horizons and the artefacts were accompanied by warthog and equid teeth to name a few (Beaumont *et al.* 1995).

Orton (2012) noted that to the northwest, west and southwest of Copperton sites have been investigated by Beaumont and colleagues (1995), Smith (1995a) and Parsons (2003, 2004, 2007, 2008) yielding LSA deposits. Work on these sites led to a distinction between hunter-gatherer and herder sites, based on stone artefact assemblages (Beaumont *et al.* 1995). All these Later Stone Age sites have very few, if any, organic items on them. The only organic material found on sites like these is fragments of ostrich eggshell probably belonging to broken water containers. Such flasks have been widely recorded across the Northern Cape (Morris 1994).

The archaeological importance of pans in the area are now well documented (Kiberd 2006, Wiltshire 2011, Orton 2012) and if any occur in the study area they could be of significance. Van der Walt (2012) recorded low densities of ESA, MSA and LSA scatters just west of the current study area and were given a field rating of low archaeological significance. However, several discrete MSA and LSA sites were also documented. Similar to the study by Orton (2012) a stone enclosure was also recorded as several sites with historic material during the 2012 study.

Most of the material expected for the study area is MSA in nature consisting of large flakes, radial and bipolar cores, points, end scrapers, large utilized and retouched blade tools, and utilized and retouched flakes. Raw material are expected to be predominantly in fine grained quartzite, hornfels, banded ironstone, chert and vein quartz based on the results of the 2012 study by the author of this report.

6.2 Palaeontology

Dr Johan Almond (2013) conducted a Palaeontological Impact Assessment for the study area and he concluded:

"The study area of the proposed Bosjesmansberg Solar Energy Facility near Copperton, Northern Cape, is underlain at depth by unfossiliferous Precambrian metasediments as well as by glacial sediments of the Dwyka Group that contain very few fossils (mainly reworked blocks of stromatolitic carbonate). The overlying superficial sediments (alluvium, gravels, aeolian sands, soils *etc*) are of low to very low palaeontological sensitivity. The impact significance of the solar facility development, *including* the various transmission line options, on local fossil heritage resources is considered to be VERY LOW".

Please refer to Annexure A for his full report

7. PROBABILITY OF OCCURRENCE OF SITES

Based on the above information, it is possible to determine the probability of finding archaeological and cultural heritage sites within the study area to a certain degree. For the purposes of this section of the report the following terms are used – low, medium and high probability. Low indicates that no known occurrences of sites have been found previously in the general study area, medium probability indicates some known occurrences in the general study area are documented and can therefore be expected in the study area and a high probability indicates that occurrences have been documented close to or in the study area and that the environment of the study area has a high degree of probability having sites.

» Palaeontological landscape

Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations exposed by road cuttings and quarry excavation: *Low.*

» Archaeological And Cultural Heritage Landscape

NOTE: Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.

Archaeological remains dating to the following periods can be expected within the study area:

» Stone Age finds

ESA: Medium-High Probability MSA: Medium-High Probability LSA: Medium- High Probability LSA –Herder: Medium Probability

» Historical finds

Historical period: Medium- High Probability

Historical dumps: *Medium- High Probability* Structural remains: *Medium Probability* Cultural Landscape: *Medium probability*

- » Living Heritage For example rainmaking sites: Low Probability
- » Burial/Cemeteries

Burials over 100 years: *Medium Probability* Burials younger than 60 years: *High Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

8. ASSUMPTIONS AND LIMITATIONS

The study area was not subjected to a field survey as this will be done in the EIA phase. It is assumed that information obtained for the wider area is applicable to the study area.

9. FINDINGS

The heritage scoping study revealed that the following heritage sites, features and objects that can be expected within the study area.

9.1. Archaeology

9.1.1 Archaeological finds

There is a medium to high likelihood of finding Stone Age sites scattered over the study area. There is an increased likelihood of finding material around the higher lying areas to the east of the study area as well as around pans if any occur within the study area.

9.1.2 Nature of Impact

The construction phase of the solar facility could directly impact on surface and subsurface archaeological sites.

9.1.3 Extent of impact

The construction of the solar facility could have a low to medium impact on a local scale.

9.2. Historical period

9.2.1 Historical finds: I

Historical finds include middens, structural remains and cultural landscape. The desktop study highlighted the fact that the area was occupied at least from the late 1800's and features dating to this period onward associated with farming can occur.

9.2.1 Nature of Impact

The construction of the solar facility can directly impact on both the visual context and sense of place of historical sites. There are few structures identified in the south east of the study area. Due to the visual nature of the solar facility it can also have a direct impact on the sense of place as well as the cultural landscape.

9.2.3 Extent of impact

The solar facility will have a low to medium local impact due to the general physical nature of solar facilities. The sense of place of cultural sites and the cultural landscape will be impacted on a local scale and the impact could be low - medium.

9.3. Burials and Cemeteries

9.3.1 Burials and Cemeteries

Graves and informal cemeteries can be expected anywhere on the landscape.

9.3.2 Nature of Impact

The construction and operation of the solar facility could directly impact on marked and unmarked graves.

9.3.3 Extent of impact

The facility could have a low to medium impact on a local scale.

10. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES

Based on the current information obtained for the area at a desktop level it is anticipated that any sites that occur within the proposed development area will have a Generally Protected B (GP.B) field rating and all sites should be mitigatable and no red flags are identified. This assumption will how ever have to be verified by a field visit.

11. CONCLUSIONS AND RECOMMENDATIONS

This scoping study revealed that a range of heritage sites occur in the larger region and similar sites can be expected within the study area. Every site is relevant to the Heritage Landscape, but it is anticipated that few if any sites in the area have conservation value. The following conclusions are applicable to the following sites:

» Archaeological sites

All sites could be mitigated either in the form of conservation of the sites with in the development or by a Phase 2 study where the sites will be recorded and sampled before the client can apply for a destruction permit for these sites prior to development.

» Historical finds and Cultural landscape

It is not anticipated that the built environment will be severely impacted upon as very little structures occur within the study area and could possibly be younger than 60 years and not protected by legislation. This assumption will how ever have to be verified in the field.

» Burials and cemeteries

Formal and informal cemeteries as well as pre-colonial graves occur widely across Southern Africa. It is generally recommended that these sites are preserved with in a development. These sites can how ever be relocated if conservation is not possible, but this option must be seen as a last resort and is not advisable. The presence of any grave sites must be confirmed during the field survey and the public consultation process. » General

It is recommended that as part of the public consultation process the presence of graves, archaeological and historical sites should be determined. During the planning phase of the proposed power line options for connection into the grid cognisance should be taken of the archaeological sensitivity associated with pans and if any occur in the study area these sites should be avoided.

12. PLAN OF STUDY

In order to comply with the National Heritage Resources Act (Act 25 of 1999) a Phase 1 Archaeological Impact Assessment must be undertaken. During this study sites of archaeological, historical or places of cultural interest must be located, identified, recorded, photographed and described. During this study the levels of significance of recorded heritage resources must be determined and mitigation proposed should any significant sites be impacted upon, ensuring that all the requirements of SAHRA are met.

13. LIST OF PREPARERS

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14. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique and Tanzania as well as the DRC; and have conducted more than 300 AIAs since 2000

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