



**AN ARCHAEOLOGICAL ASSESSMENT AND WALKTHROUGH SURVEY OF THE PROPOSED CONSTRUCTION OF A FACILITY SUBSTATION COMPLEX, METERING STATION AND 132 kV OVERHEAD POWER LINE WITHIN THE AUTHORISED DEVELOPMENT ENVELOPE OF THE NXUBA WIND FARM NEAR COOKHOUSE, BLUE CRANE ROUTE LOCAL MUNICIPALITY, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE.**

**Prepared for:** Savannah Environmental (Pty) Ltd  
P.O. Box 148  
Sunninghill, 2157  
Tel: (011) 234 6621  
Fax: (086) 684 0547  
Contact person: Ms Tebogo Mapinga  
Email: [tebogo@savannahsa.com](mailto:tebogo@savannahsa.com)

**Prepared by:** Dr Johan Binneman and Mr Kobus Reichert  
**On behalf of:** Eastern Cape Heritage Consultants cc  
P.O. Box 689  
Jeffreys Bay 6330  
Tel: 042 2960399  
Cell: 0728006322  
Fax: 042 296 0399  
Email: [kobusreichert@yahoo.com](mailto:kobusreichert@yahoo.com)  
[jnfbinneman@gmail.com](mailto:jnfbinneman@gmail.com)

**Date:** July 2015

## CONTENTS

EXECUTIVE SUMMARY .....	1
BRIEF PROJECT INFORMATION .....	2
Background to the study .....	2
Type of development .....	2
Purpose of the walkthrough .....	2
The site and location .....	3
Archaeological background .....	6
Relevant impact assessments .....	6
THE WALKTHROUGH ASSESSMENT .....	7
Methodology .....	7
Limitations and assumptions .....	7
Results and findings .....	7
ASSESSMENT OF THE IMPACTS .....	9
Pre-colonial archaeology and colonial period heritage .....	9
Nature of the impacts .....	9
Extent of the impacts .....	9
Table 1. Impacts on the pre-colonial archaeology .....	10
Table 3. Environmental management programme for heritage resources .....	10
DISCUSSION AND MITIGATION .....	12
GENERAL REMARKS AND CONDITIONS .....	13
APPENDIX A: Brief legislative requirements .....	14
APPENDIX B: Guidelines and procedures for proponents .....	16

**AN ARCHAEOLOGICAL ASSESSMENT AND WALKTHROUGH SURVEY OF THE PROPOSED CONSTRUCTION OF A FACILITY SUBSTATION COMPLEX, METERING STATION AND 132kV OVERHEAD POWER LINE WITHIN THE AUTHORISED DEVELOPMENT ENVELOPE OF THE NXUBA WIND FARM NEAR COOKHOUSE, BLUE CRANE ROUTE LOCAL MUNICIPALITY, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE.**

**Compiled by:** Dr Johan Binneman

**On behalf of:** Eastern Cape Heritage Consultants

P.O. Box 689

Jeffreys Bay, 6330

Tel/Fax: 042 2960399

Cell: 0728006322

Email: kobusreichert@yahoo.com

**Note:** This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling Archaeological Phase 1 Impact Assessment (AIA) reports and forms part of a Basic Assessment process.

## **EXECUTIVE SUMMARY**

Savannah Environmental (Pty) Ltd on behalf of Nxuba Wind farm (RF) (Pty) Ltd., appointed Eastern Cape Heritage Consultants to conduct an archaeological walkthrough survey of the proposed construction of an on-site facility substation complex, metering station and a new approximately two (2) kilometre long 132kV overhead power line, within the authorised Nxuba Wind Farm development envelope to the existing Eskom Poseidon Substation.

The walkthrough and assessment was conducted to establish the range and importance of possible exposed and *in situ* heritage remains and features, the potential impact of the development on the aforementioned, and to make recommendations to minimise possible damage to these sites.

The proposed area for the developments is relatively flat, well-covered with dense grass and dotted with numerous anthills. The construction of the existing Eskom Poseidon Substation, several power lines, roads and small scale farming activities has disturbed the area severely in the past. Due to the dense grass cover the archaeological visibility was poor and no archaeological or historical sites/materials were observed. However, it is possible that such remains may be covered by soil and vegetation.

It is recommended that the construction managers/Environmental Control Officer (ECO)/ Environmental Officer (EO) should familiarise himself/herself before construction starts on the possible types of heritage sites/materials they may encounter and the procedures to follow should they find sites of significance. Should any archaeological material be exposed during construction, work must cease in the immediate area affecting the find and reported to

the archaeologist at the Albany Museum in Grahamstown (Tel: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 642 2811), so that a systematic and professional investigation can be undertaken. In general the proposed area is of **low** archaeological and historical significance and the construction activities will have little impact on possible archaeological sites/material, but will contribute to a larger negative cumulative visual impact on the cultural landscape.

## **BRIEF PROJECT INFORMATION**

### **Background**

African Clean Energy Developments (ACED) Bedford Wind Farm (Pty) Ltd obtained an Environmental Authorisation in February 2012 from the National Department of Environmental Affairs (DEA) for the construction of a wind energy facility and associated infrastructure on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/1569/2). The Great Fish River Wind Farm (Pty) Ltd also obtained an Environmental Authorisation in February 2012 from the National DEA for the construction of a wind energy facility and associated infrastructure on a site near Cookhouse in the Eastern Cape Province (DEA Ref No. 12/12/20/2290). Based on technical aspects and the locations of the two above-mentioned projects, being located adjacent to each other, it was determined that the two projects will be more energy efficient when combined. Combining the two projects also resulted in optimisation, both from a commercial as well as an environmental point of view due it being possible to share some infrastructure. The combined projects will be developed by Nxuba Wind Farm RF (Pty) Ltd and will be referred to as Nxuba Wind Farm (Maps 1-2). Nxuba Wind Farm has been awarded Preferred Bidder status within the Renewable Energy Independent Power Producer Process (REIPPP) Round four (4) bid window.

Through detailed feasibility studies and consultation with Eskom it has been determined that an alternative grid connection is required to connect the Nxuba Wind Farm to Poseidon Eskom Substation. Therefore, Nxuba Wind Farm (RF) (Pty) Ltd proposes to construct a 132 kV facility substation complex, metering station and 132kV overhead power line to connect the authorised Nxuba Wind Farm to the existing Poseidon Eskom Substation.

The proposed project will entail:

- » Construction of a 132kV Facility Substation Complex (120 m x 120 m) (as indicated on Map 1 of Appendix 6);
- » Construction of a metering station (40m x 30m) (as indicated on Map 1 of Appendix 6); and
- » Construction of a 132kV overhead power line, to connect the proposed substation complex to the existing Poseidon Substation (as indicated on Map 1 of Appendix 6). The proposed power line is ~2km in length.

A 300m wide corridor has been investigated for the siting of the proposed power line and associated infrastructure.

Several phase 1 Archaeological Impact Assessments were conducted for power lines connecting wind farms in the immediate vicinity to the Poseidon Substation (Binneman 2012a, 2012b & 2013). A phase 1 Archaeological Impact Assessments and report has been compiled for the Nxuba Wind Farm site during 2011 (Booth 2011). A number of phase 1 Heritage Impact Assessments have also been conducted in adjacent areas (i.e., Hart and Webley 2010; Halkett *et al.* 2010; Gaigher 2012; Binneman 2014). All background information is included in these reports and will not be repeated here in detail.

### **Type of development**

Nxuba Wind farm (RF) (Pty) Ltd proposes the construction of an on-site substation complex (120 m x 120 m), a metering station (40 m x 30 m) and a new approximately two (2) kilometre long 132kV overhead power line to the existing Eskom Poseidon Substation, within a 300 metre wide corridor in the authorised Nxuba Wind Farm.

### **Purpose of the Study**

The purpose of the study was to conduct an archaeological walkthrough survey within a 300 metre wide corridor for the proposed construction of a facility substation complex (120 m x 120 m), metering station (40 m x 30 m) and a 2 kilometre long 132kV transmission power line to the existing Poseidon Substation, within the authorised Nxuba Wind Farm, to establish;

- the range and importance of possible exposed and *in situ* heritage remains and features within the servitude of the proposed developments,
- the potential impact of the developments on these heritage resources, and
- to make recommendations to prevent and/or minimize possible damage to these heritage sites/materials.

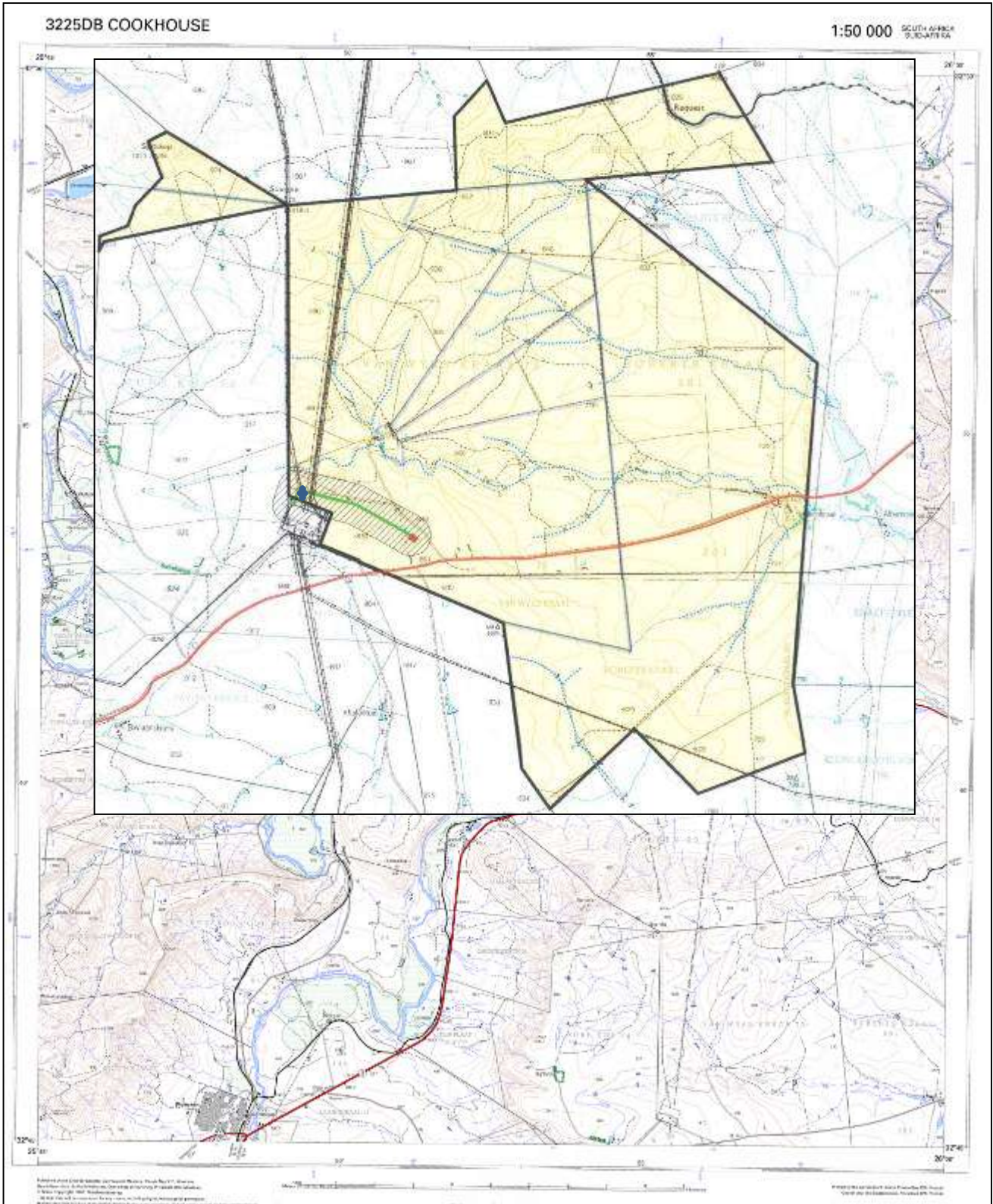
### **The site and location**

The proposed construction of an on-site facility substation complex, metering station and the overhead power line to the Poseidon Substation in the Nxuba Wind Farm site near Cookhouse are located within the 1:50 000 topographic reference map 3225DB Cookhouse (Maps 1-2). The development falls within the Blue Crane Route Local Municipality and Sarah Baartman District Municipality of the Eastern Cape Province. They are situated in close proximity to the Poseidon Substation approximately 12 kilometres east of Cookhouse and 15 kilometres south-west of Bedford. The site is located next to (north) the gravel road connecting Cookhouse and Bedford and will be constructed on the following farm;

- Portion 0 of Farm Van Wyks Kraal 73.

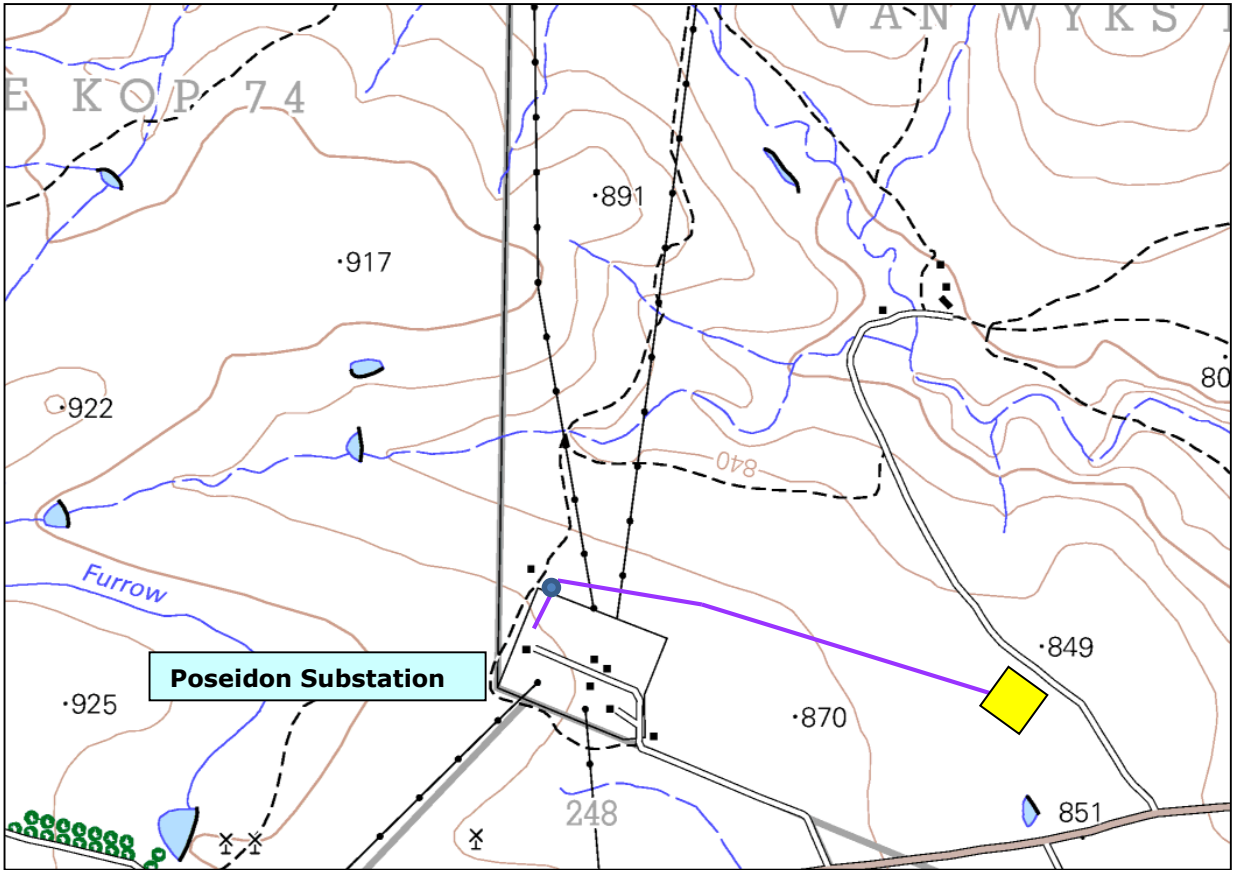
The proposed area for the development near the Poseidon Substation is relatively flat, well-covered with dense grass and dotted with numerous anthills (Figure 1). The construction

of the Poseidon Substation, several overhead power lines, roads and small scale farming activities has disturbed the area severely in the past. The main activity in the study area is commercial stock farming and the land is used for grazing of livestock.



**Map 1. 1:50 000 Topographic maps indicating the location of the proposed Nxuba Wind Farm (yellow area) near Cookhouse. The proposed substation complex is marked by the red dot, the metering station is marked by a blue dot and the power line by the green line (insert map courtesy of Savannah Environmental (Pty) Ltd).**





**Map 2. 1:50 000 Topographic map and aerial image indicating the location of the proposed development near the Poseidon substation. (aerial image courtesy of Savannah Environmental (Pty) Ltd).**



## **Archaeological background**

The archaeology and history of the area have been addressed in several reports and will not be repeated here again (see relevant impact assessment reports below).

### **Selected impact assessments adjacent to the Poseidon Substation**

- Binneman, J. 2014. An archaeological walkthrough survey of the final layout of the proposed Nojoli Wind Energy Facility near Cookhouse, Blue Crane Route Local Municipality, Bedford District, Eastern Cape Province. Prepared for Savannah Environmental Ltd. (Pty). Eastern Cape Heritage Consultants.
- Binneman, J. 2013. A phase 1 archaeological impact assessments of the proposed new substation and 132kv power line at the Cookhouse South Wind Farm near Cookhouse, Blue Crane Route Local Municipality, Bedford District, Eastern Cape Province. Prepared for Savannah Environmental Ltd. (Pty). Eastern Cape Heritage Consultants.
- Binneman, J. 2012a. Basic archaeological assessments for: 1. the kopleegte substation (250m x 250m), 2. The new 132kv power line from Kopleegte Substation to Poseidon Substation, 3. The re-route of the 66kv power line from Poseidon Substation to Zebra Substation, 4. The re-route of the 132kv power line from Klipfontein to Poseidon Substation, Cookhouse District, Blue Crane Route Municipality, Eastern Cape Province. Prepared for Savannah Environmental Ltd. (Pty). Eastern Cape Heritage Consultants.
- Binneman, J. 2012b. Basic archaeological assessments for the proposed: 1. Golden Valley-Poseidon 132kv power lines (3 power lines), 2. Golden Valley-Kopleegte power lines (2 power lines) and, 3. The 132kv Golden Valley Substation (250m x 250m) (2 options), Bedford District, Blue Crane Route Local Municipality, Eastern Cape Province. Prepared for Savannah Environmental Ltd. (Pty). Eastern Cape Heritage Consultants.
- Booth, C. 2011. A phase I archaeological impact assessment (AIA) for the proposed Cookhouse II wind energy facility, Blue Crane Route Local Municipality, Eastern Cape. Prepared for Savannah Environmental Ltd. (Pty). Albany Museum.
- Gaigher, S. 2012. Walk-through survey and re-evaluation report indicating the possible impact on heritage resources by the infrastructure proposed for the wind farm near Cookhouse in the Eastern Cape. Prepared for Savannah Environmental Ltd. (Pty). G & A Heritage.
- Halket, D., Webley, L., Orton, J. and Pinto, H. 2010. Heritage impact assessment of the proposed Amakhala-Emoyeni wind Energy Facility, Cookhouse District, Eastern Cape. Prepared for Savannah Environmental Ltd. (Pty). ACO Associates cc.
- Hart, T. and Webley, L. 2010. Heritage impact assessment of a proposed Cookhouse Wind Energy Project, Blue Crane Route Local Municipality. Unpublished report prepared for CES Ltd. (Pty). ACO Associates cc.
- Webley, L., Halkett, D. and Hart, T. 2009. Heritage Impact Assessment of a proposed Wind Energy Facility to be situated on portions of farms Arolsen 69, Farm 148, Farm 148/1; Roidraai 146, Baviaans Krans 151, Baviaans Krantz 151/2, Klip Fonteyn 150/2, Roberts Kraal 281, Zure Kop 74/1, Zure Kop 74/2, Van Wyks Kraal 73, Van Wyks Kraal

73/2 and Van Wyks Kraal 73/3 in the Cookhouse District, Eastern Cape. Unpublished report prepared for Savannah Environmental Ltd. (Pty). ACO Associates.

## **THE WALKTHROUGH ASSESSMENT**

### **Methodology**

The landowner was contacted prior to the visit to inform him of the investigation and to obtain permission to access his property. He was also consulted on possible locations of historical buildings and features, cemeteries, graves and archaeological sites. All previous relevant survey information for the immediate and adjacent areas was consulted before the walkthrough started (see reference list). A Google Earth aerial image investigation was also conducted of the area prior to the investigation (Map 2). The walkthrough for the proposed development followed the layout as supplied by the project company. The walkthrough survey was conducted on foot by two archaeologists and spots checks and surveys were also conducted from a vehicle to investigate as much of the terrain as possible. GPS readings were taken and all important features were digitally recorded.

### **Limitations and assumptions**

Although the terrain was easy to access, the archaeological visibility in general was poor due to the dense surface cover of grass (Figure 1). The dense surface vegetation and absence of sheet erosion made it difficult to locate archaeological sites/materials. Regardless of the restrictions imposed by the dense vegetation, the experiences and knowledge gained from several other investigations in the wider surrounding region provided background information to make assumptions and predictions on the incidences and the significance of possible pre-colonial archaeological sites/material which may be located in the area, or which may be covered by soil and vegetation.

### **Results and findings**

Due to the dense grass no significant archaeological sites/materials were observed during the walkthrough survey of the facility substation complex, metering station and overhead power line route to the Poseidon Substation. However, although sites/materials may be covered by soil and vegetation, the proposed 300 metre wide corridor appears to be of **low** cultural sensitivity and it would be unlikely that any archaeological remains of significance will be found *in situ* or exposed during the development. There are no known buildings/features or graves older than 60 years in the corridor.



**Figure 1. General views of the proposed area for the construction of a facility substation complex, metering station and a 2 kilometre overhead power line to the Poseidon Substation.**

## **ASSESSMENT OF THE IMPACTS**

Overhead power lines and substations are an integral part of the South African landscape. This is especially the case for the wider Poseidon Substation area, where huge pylons and power lines dominate the skyline in all directions. The proposed overhead power line, facility substation complex and metering station, however, are relatively small in comparison to the existing network of power lines, but will contribute to the cumulative visual impact and the change of 'significance of place'.

It is assumed that the construction of the proposed 132kV power line will consist of overhead cables suspended from wooden/metal structures placed a few hundred metres apart. These structures must be firmly positioned several metres deep in the ground. Although the placing of the structures will only affect a few square metres, it will be the additional activities such as the service roads for the construction vehicles and clearing of vegetation along the servitude which may disturb the land surface on a large scale, albeit, only for a length of ~2km.

The area for the proposed facility substation complex is relatively large and together with the additional activities such as the service road for the construction vehicles, clearing of vegetation and levelling of the site will disturb the land surface on a large scale. These activities may have a negative effect on the above and below ground archaeological remains, in the event that they are discovered/if any. These disturbances to the landscape may be rehabilitated over time, however, the substation complex, power line and associated infrastructure, will have a long term visual impact on the general countryside.

### **Pre-colonial archaeology and colonial period heritage**

#### *Nature of the impacts*

The main impact on the pre-colonial archaeological and colonial period heritage sites/remains (if any) will be the physical disturbance of the material and its context. The construction of the substation complex and the tower foundations for the power line and service roads may expose, disturb and displace pre-colonial archaeological and colonial period heritage sites/material. Nevertheless, from the available information and walkthrough it would appear that the proposed 132kV overhead power line route from the proposed Nxuba Substation complex to the Poseidon Substation is of **low** archaeological sensitivity. However, sites/material may be covered by soil and vegetation.

#### *Extent of the impacts*

Construction of the facility substation complex, metering station and power line tower foundations and service roads may impact on remains which are buried, but these impacts will be limited and restricted to the local area. The construction of the tower foundations will also only disturb small areas and the negative impact on possible pre-colonial archaeology and colonial period heritage sites/materials may be relatively small. The

construction of service roads will disturb larger areas and may expose sites/materials on a larger scale.

**Table 1. Impacts of the proposed construction of the Nxuba Substation Complex, metering station and the 132kV overhead power line from the substation to the Poseidon Substation on the pre-colonial archaeology and colonial period heritage.**

<b>Nature:</b> The potential impact of the construction of the substation complex, metering station and power line foundations and service roads on above and below ground pre-colonial archaeological and colonial period heritage sites/materials.		
	<b>Without Mitigation</b>	<b>With Mitigation</b>
<b>Extent</b>	Local (1)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Minor (1)	Minor (1)
<b>Probability</b>	Unlikely (2)	Unlikely (2)
<b>Significance</b>	<b>Low (14)</b>	<b>Low (14)</b>
<b>Status (positive or negative)</b>	Negative	Neutral
<b>Reversibility</b>	No	No
<b>Irreplaceable loss of resources?</b>	No, but in some cases, yes	No
<b>Can impacts be mitigated?</b>	Yes	
<p>Mitigation</p> <p>No mitigation is proposed before construction starts because the archaeological remains (if any) are of low significance (excluding human remains). However, if concentrations of pre-colonial archaeological and colonial period heritage materials are exposed then work in the immediate area affecting the find must stop for an archaeologist to investigate (see below).</p> <p>If any human remains (or any other concentrations of heritage material) are exposed during construction, all work must cease and it must be reported immediately to the Albany Museum (Tel: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 642 2811), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.</p> <p>Construction managers/foremen should be informed before construction starts on the possible types of heritage sites/materials they may encounter and the procedures to follow when they find sites. The ECO and the contractor's Environmental Officer (EO) may be trained to identify, follow the relevant procedure and report to the site manager if sites are found.</p>		
<b>Cumulative impacts:</b> The number of tower foundations will determine the impact on the buried materials (if any), but in general it will be negligible. The size of developments at the substation in the future will determine the impact on the buried materials (if any) and if these increase, so will the impact.		
<b>Residual impacts:</b> Long term to permanent, especially in the case of human remains/graves.		

**Environmental management programme for the construction of the proposed Nxuba Substation complex, metering station and the 132kV overhead power line from the substation to the Poseidon Substation.**

<b>Objective:</b> To conserve the pre-colonial archaeological and colonial period heritage sites/remains of the construction of the facility substation complex, metering station and 132kV overhead power line from the proposed Nxuba Substation complex to the Poseidon Substation as outlined in the National Heritage Resources Act of 1999.	
<b>Project component/s</b>	Construction of a facility substation complex, metering station and a 132kV overhead power line from the proposed Nxuba Substation complex to the Poseidon Substation and associated infrastructure.
<b>Potential impact</b>	The physical disturbance and/or destruction of pre-colonial archaeology and colonial period heritage sites/remains.
<b>Activity/risk source</b>	Levelling, construction and excavation for substation complex and the tower foundations for the power line, access roads for construction vehicles, clearing of vegetation and earthworks.
<b>Mitigation: Target/Objective</b>	All construction activities on the substation complex must be monitored by an archaeologist/heritage practitioner, or alternatively a person specially trained to conduct the monitoring, such as the ECO or Contractor's EO. This must include the clearing of the vegetation (which constrained the visibility of heritage resources during the walkthrough investigation).

<b>Mitigation: Action/control</b>	<b>Responsibility</b>	<b>Timeframe</b>
If any human remains or any other concentrations of archaeological heritage material are exposed during construction, all work must cease and it must be reported immediately to the archaeologist at the Albany Museum in Grahamstown (Tel: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 642 2811), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation (see Appendix C below).	Project company, Consultant/ ECO/EO, contractor and the archaeologist/heritage practitioner.	From the start and duration of all phases of the construction, i.e., during the clearing of the vegetation for the above ground heritage. During the levelling and construction phases for the buried heritage.
Apply for permits from the Eastern Cape Province Heritage Resources Authority to collect and/or excavate sites/materials from archaeological sites when exposed during construction work.	Consultant/ EO, contractor and the archaeologist/heritage practitioner.	Before the construction continues and for the duration of the project.
Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural	Consultant/ECO/EO, contractor and the archaeologist/ heritage practitioner.	Before the construction starts.



material they may encounter and the procedures to follow when they find sites.		
--	--	--

<b>Performance indicator</b>	All heritage sites/materials must be managed within the legislative guidelines. The success of the monitoring will be determined by the degree of damage/disturbance that can be avoided to heritage sites.
<b>Monitoring</b>	All construction activities must be monitored by a heritage practitioner or alternatively a person must be specially trained, for example the ECO or contractor's EO. A report and if required a list of recommendations, should be compiled as part of the ECO Monthly/Quarterly Report and submitted to the Eastern Cape Provincial Heritage Resources Authority after the monitoring phase(s) for comment.

## DISCUSSION AND MITIGATION

The terrain was easy to access, but the archaeological visibility in general was poor due to the dense grass cover and little sheet erosion. These conditions made it difficult to locate any pre-colonial archaeological sites and materials. Notwithstanding sites/materials may be covered by soil and grass, but it would appear that in general the proposed facility substation complex, metering station and the power line route from the proposed Nxuba Substation to the Poseidon Substation is of **low** cultural significance. Although it would appear unlikely that any significant *in situ* sites/material will be exposed during these developments, it is recommended that;

1. All construction activities must be monitored by an archaeologist/heritage practitioner or alternatively a person must be trained, for example the ECO or Contractor's EO, to conduct the monitoring. This must include the clearing of the dense grass (which constrained the visibility of heritage resources during the walkthrough), leveling, placing and excavations of the pylon foundations and construction of the access roads, if required.
2. Construction managers/foremen should familiarise himself/herself before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. The ECO and the contractor's Environmental Officer (EO) may be trained to identify, follow the relevant procedure and report to the site manager if sites are found.
3. Although it is unlikely that any sensitive archaeological sites/remains will be exposed during the development, there is always a possibility that human remains and/or other archaeological and historical material may be uncovered during the development. Should such material be exposed then work must cease in the immediate area affecting the find and it must be reported to the Albany Museum (Tel: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 642 2811), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material (See Appendix B for a list of possible archaeological sites that maybe found in the area).

## GENERAL REMARKS AND CONDITIONS

**Note:** This is an Archaeological Walkthrough Report compiled for the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) to enable them to make informed decisions regarding the heritage resources assessed in this report and only they have the authority to revise the report. This Report must be reviewed by the ECPHRA where after they will issue their review Comments to the EAP/project company. The final decision rests with the ECPHRA who must grant permits if there will be any impact on cultural sites/materials as a result of the development

This report is an Archaeological Walkthrough Impact Assessment and does not exempt the project company from any other relevant heritage impact assessments as specified below:

In terms of the National Heritage Resources Act, No. 25 of 1999 (section 38) ECPHRA may require a full Heritage Impact Assessment (HIA) to assess all heritage resources, that includes *inter alia*, all places or objects of aesthetical, architectural, historic, scientific, social, spiritual, linguistic, or technological significance that may be present on a site earmarked for development. A full Heritage Impact Assessment (HIA) should assess all these heritage components, and the assessment may include archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects (refer to archaeological background on p.7 for a reference list of various HIA's undertaken in and around the study area).

It must be emphasized that this Phase 1 AIA is based on the visibility of archaeological sites/material and may not therefore reflect the true state of affairs. Sites and material may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered during construction activities, ECPHRA or an archaeologist must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed (see attached list of possible archaeological sites and material). The project company must finance the costs should additional studies be required as outlined above. The *onus* is on the project company to ensure that the provisions of the National Heritage Resources Act No. 25 of 1999 and any instructions from ECPHRA are followed. The EAP/project company must forward this report to ECPHRA in order to obtain their Review Comments, unless alternative arrangements have been made with the heritage specialist to submit the report.

## **APPENDIX A: brief legislative requirements**

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

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

*35 (4) No person may, without a permit issued by the responsible heritage resources authority—*

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

### ***Burial grounds and graves***

*36. (3) (a) No person may, without a permit issued by SAHRA or a provincial 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, 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 equipment, or any equipment which assists in the detection or recovery of metals.*

### ***Heritage resources management***

*38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –*

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) the construction of a bridge or similar structure exceeding 50m in length;*
- (c) any development or other activity which will change the character of the site –*
  - (i) exceeding 5000m<sup>2</sup> in extent, or*
  - (ii) involving three or more erven or subdivisions thereof; or*
  - (iii) involving three or more erven or divisions thereof which have been*

*consolidated within the past five years; or*

*(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*

*(d) the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or*

*(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

## **APPENDIX B: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for proponents**

### **Human Skeletal material**

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general human remains are buried in a flexed position on their side, but are also found buried in a sitting position with a flat stone capping. Proponents are requested to be on alert for the possibility of uncovering such remains.

### **Freshwater mussel middens**

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m<sup>2</sup> in extent, should be reported to an archaeologist.

### **Large stone cairns**

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

### **Stone artefacts**

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

### **Fossil bone**

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

### **Historical artefacts or features**

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.