

**Heritage impact assessment report for the
PROPOSED ESTABLISHMENT OF THE EXXARO PV PLANT ON THE
FARM NELSONSKOP, NORTH-WEST OF LEPHALALE,
LIMPOPO PROVINCE**

HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED ESTABLISHMENT OF THE EXXARO PV PLANT ON THE FARM NELSONSKOP, NORTH-WEST OF LEPHALALE, LIMPOPO PROVINCE

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Prepared for:

SAVANNAH Environmental (Pty) Ltd
Representative: Ms T Kruger

Postal Address: PO Box 148, Sunninghill, 2151
Tel: 011 234 6621
E-mail: tammy@savannahsa.com

Prepared by:

J van Schalkwyk (D Litt et Phil), Heritage Consultant
ASAPA Registration No.: 168
Principal Investigator: Iron Age, Colonial Period, Industrial Heritage

Postal Address: 62 Coetzer Avenue, Monument Park, 0181
Mobile: 076 790 6777
Fax: 012 347 7270
E-mail: jvschalkwyk@mweb.co.za

Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
October 2011

EXECUTIVE SUMMARY

HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED ESTABLISHMENT OF THE EXXARO PV PLANT ON THE FARM NELSONSKOP, NORTH-WEST OF LEPHALE, LIMPOPO PROVINCE

Exxaro resources is proposing the development of a 30MW PV facility on the farm Nelsonskop, located east of the Grootegeluk Mine approximately 15 km north-west of Lephale in Limpopo Province.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by **Savannah Environmental** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the photovoltaic plant and associated infrastructure.

- On the koppie named Koorn Kop (also referred to as Nelsonkop) some interesting engravings of animal spoors, cupules and cut marks were identified on the southern face of the hill. In addition, on top of the hill a number of small stone walled sites occur. A few non-diagnostic stone flakes and potsherds occur in the shelter.

From ethnographic sources it is known that hills or promontories, for example in the Karoo, are important features to the San because they offer vantage points in an otherwise remarkably flat landscape. The fact that there is a big panel with a variety of engravings on it indicates that this is in all probability a site of potency, for the making of rain by the San and later Sotho-Tswana speaking people in the area.



J A van Schalkwyk
Heritage Consultant
September 2011

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GLOSSARY OF TERMS AND ABBREVIATIONS

TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1 & 2.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

Iron Age: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. These people, according to archaeological evidence, spoke early variations of the Bantu Language. Because they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

Historical Period: Since the arrival of the white settlers - c. AD 1840 - in this part of the country

ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
BP	Before Present
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED ESTABLISHMENT OF THE EXXARO PV PLANT ON THE FARM NELSONSKOP, NORTH-WEST OF LEPHALALE, LIMPOPO PROVINCE

1. INTRODUCTION

Exxaro resources is proposing the development of a 30MW PV facility on the farm Nelsonskop, located east of the Grootegeluk Mine approximately 15 km north-west of Lephalale in Limpopo Province.

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. According to Section 27(18) of the National Heritage Resources Act (NHRA), Act 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by **Savannah Environmental** to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the photovoltaic plant and associated infrastructure.

This HIA report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and is intended for submission to the South African Heritage Resources Agency (SAHRA).

2. TERMS OF REFERENCE

2.1 Scope of work

The aim of this HIA, broadly speaking, is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the transmission line.

The scope of work for this study consisted of:

- Conducting of a desk-top investigation of the area, in which all available literature, reports, databases and maps were studied.
- A visit to the proposed development area.

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development area;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;

- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

2.2 Limitations

- It must be kept in mind that by its very nature, archaeological sites occur below ground surface, making its detection in some cases difficult.

Table 1: Applicable category of heritage impact assessment study and report.

Type of study	Aim	SAHRA involved	SAHRA response
Heritage Impact Assessment	<p>The aim of a full HIA investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives are to identify heritage resources (involving site inspections, existing heritage data and additional heritage specialists if necessary); assess their significances; assess alternatives in order to promote heritage conservation issues; and to assess the acceptability of the proposed development from a heritage perspective.</p> <p>The result of this investigation is a heritage impact assessment report indicating the presence/ absence of heritage resources and how to manage them in the context of the proposed development.</p> <p>Depending on SAHRA's acceptance of this report, the developer will receive permission to proceed with the proposed development, on condition of successful implementation of proposed mitigation measures.</p>	Provincial Heritage Resources Authority	Comments on built environment and decision to approve or not
		SAHRA Archaeology, Palaeontology and Meteorites Unit	Comments and decision to approve or not

3. HERITAGE RESOURCES

3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- Places, buildings, structures and equipment of cultural significance;
- Places to which oral traditions are attached or which are associated with living heritage;
- Historical settlements and townscapes;
- Landscapes and natural features of cultural significance;
- Geological sites of scientific or cultural importance;
- Archaeological and palaeontological sites;
- Graves and burial grounds, including –
 - Ancestral graves;
 - Royal graves and graves of traditional leaders;
 - Graves of victims of conflict;
 - Graves of individuals designated by the minister by notice in the gazette;
 - Historical graves and cemeteries; and
 - Other human remains which are not covered in terms of the human tissue act, 1983 (act no. 65 of 1983);
- Sites of significance relating to the history of slavery in South Africa;
- Movable objects, including –
 - Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - Objects to which oral traditions are attached or which are associated with living heritage;
 - Ethnographic art and objects;
 - Military objects;
 - Objects of decorative or fine art;
 - Objects of scientific or technological interest; and
 - Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the national archives of South Africa Act, 1996 (Act No. 43 of 1996).

3.2 Cultural Significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- Its importance in the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- Sites of significance relating to the history of slavery in South Africa.

A matrix was developed whereby the above criteria were applied for the determination of the significance of each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar sites.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figures 1 and Figure 3.

4.2 Methodology

4.2.1 Preliminary investigation

4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. Some surveys done in nearby areas exist, but could not be accessed from SAHRA in the time available (Huffman & Van der Walt 2008; Pistorius 2007; Van Schalkwyk 2005a, 2005b, 2008, 2009a, 2009b, 2009c).

- Information on events, sites and features in the larger region were obtained from these sources.

4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor General (CS-G)* and the *National Archives of South Africa (NASA)* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development. The original Title Deed for the farm was accessed.

4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature was obtained from these sources.

4.2.2 Field Survey

The area that had to be investigated was identified by Savannah Environmental by means of maps. Based on previous knowledge and the desktop study that indicated that very little would be found, an approach to the field survey was developed that was aimed at locating all possible sites:

- The area where the PV plant is to be developed was surveyed by walking four transects across it.
- The power line routes and access routes, all of which will follow existing tracks, was surveyed by driving along them.

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5.1 Site location and description

The site is located east of the Grootegeluk Mine, approximately 15 km north-west of Lephalale in Limpopo Province. It consists of Portions of the farm Nelsonskop 464LQ (Fig. 1).

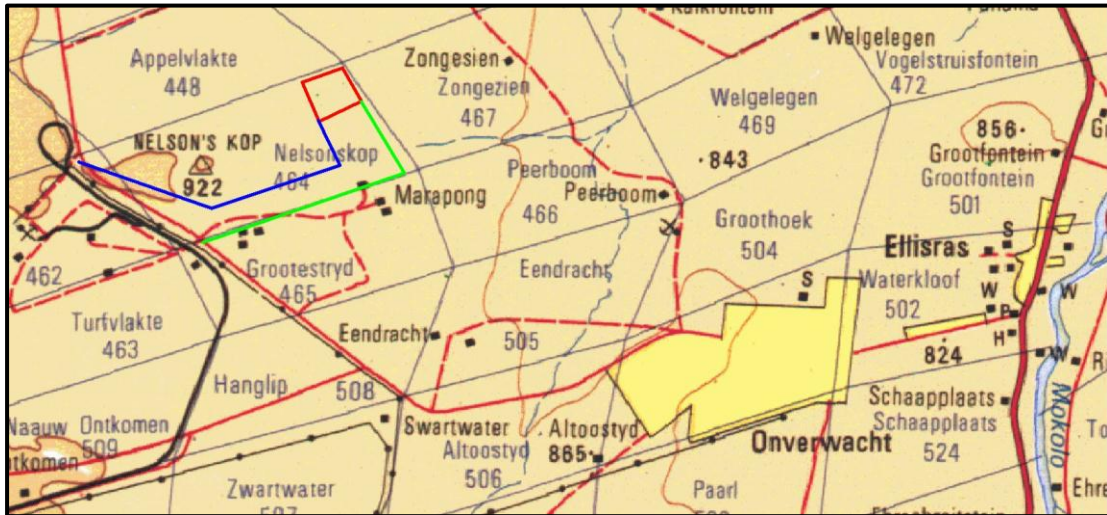


Fig. 1: Location of the study area in regional context (Map 2326: Chief Surveyor-General)

The topography of the area is very flat, with very few features (e.g. hills, outcrops or rock shelters, rivers) that usually drew people to settle in its vicinity, are found in the area. Only a few small hills or outcrops occur. All the rivers crossing the area are non-perennial. The biggest river, the Makolo, passes some distance to the east of the study area, flowing from south to north.

The geology is made up of alternating bands of arenite and shale, with a basalt intrusion to the west of the study area. All is overlain by sand, probably aeolic in origin, having being laid down from the west.

The area can be described as typical savannah, with the original vegetation consisting of Mixed Bushveld, with a section to the north classified as Sweet Bushveld. In the recent past, all of these properties were used for cattle farming and game ranching.

The original Title Deed for the farm, No. 3949, date to 1908 but does not state who the owner was.



Fig. 2: Views over the study area

5.2 Development Overview

Exxaro proposed the development of a renewable energy facility that would consist of the following elements (Fig. 3):

- The area where it is proposed to develop the photovoltaic plant (outlined in white);
- The power line from the PV plant to the substation, for which two alternatives have been identified (the blue and green lines);
- Access routes to the PV plant (also the blue and green lines).



Fig. 3: Location of the study area and layout of the proposed development (Photo: Google Earth)

5.3 Regional overview

The cultural landscape qualities of the larger region essentially consist of a single component, which is a rural area in which the human occupation is made up of a pre-colonial (Stone Age) occupation and a much later colonial (farmer) component.

Pre-colonial period

Stone tools are known to occur in a low density on the banks of some of the rivers as well as at the foot of outcrops and small hills. These mostly date to the Earlier Stone Age as well as to the Middle Stone Age and include typical points, blades, and rectangular flakes. However, all these objects were found on the surface and are therefore out of their original context. As result, they are viewed to have low significance. Some rock art dating to the Later Stone Age occur in a number of shelters to the north-west of Lephalale.

Iron Age sites are only known to occur to the south, north and east of the study area. These are linked to the Tswana and date in all probability to the period from 1600 and later.

- Archaeological sites



NHRA Category	Archaeological and palaeontological sites
Protection status	General Protection - Section 35: Archaeology, palaeontology and meteorites
	

Fig. 4: Typical Later Stone Age rock art in the region

The stone tools in the picture to the right are not from the region and are only used to illustrate the difference between Early (left), Middle (middle) and Later Stone Age (right) technology.

Colonial history

The historic period starts quite late in this part of the country. Probably one of the earliest published sources that refer to the area, in a generalised sense, is that of the explorer Thomas Baines who passed through the area during the early 1870s. Although for other sections of his travels he gives detailed descriptions of the local population, he does not comment on anybody in this particular area. Although his rendering of the various rivers and other topographical features are quite accurate for the time, he seems to imply that there were no communities settled here (Baines 1877).

In the town of Lephalale (Ellisras) there is a cemetery containing the graves of some of the earliest white settlers in the area. The town of Ellisras was only laid out in December 1960, and was named after two of the pioneer families in the area, Ellis and Erasmus. In 2002, the name was changed to Lephalale. This latter name is taken from the Phalala River, which is derived from the Tswana verb 'to flow' or 'one which overflows' (Raper 2004: 86, 204).

With reference to the study area itself, some information has been obtained about the different farms. It seems as if they are part of government land until the early part of the 20th century and most were only surveyed in the period 1909 - 1910. Drilling activities undertaken by the "Irrigation Department" in 1920, apparently revealed more than water and the presence of coal and oil bearing shale was established on the farms Grootegeluk and Hooikraal. This prompted an individual by the name of F.F. Pienaar to peg 50 claims on each of the farms Kringatspruit, Hooikraal, Grootegeluk, and Enkelbult (Reference MM1713/20, 1920; Reference MM2827/20, 1920).

- Farmsteads

Farmsteads are complex features in the landscape, being made up of different yet interconnected elements. Typically these consist of a main house, gardens, outbuildings, sheds and barns, with some distance from that labourer housing and various cemeteries. In addition roads and tracks, stock pens and wind mills complete the setup. An impact on one element therefore impacts on the whole.

NHRA Category	Buildings, structures, places and equipment of cultural significance
Protection status	
General Protection - Section 34: Structures older than 60 years	



Fig. 5: Examples of farmsteads and farming related features in the region

- Cemeteries

Apart from the formal cemeteries that occur in municipal areas (towns or villages), a number of these, some quite informal, i.e. without fencing, is expected to occur sporadically all over, but probably in the vicinity of the various farmsteads. Many might also have been forgotten, making it very difficult to trace the descendants in a case where the graves are to be relocated.

Most of these cemeteries, irrespective of the fact that they are for land owners or farm labourers (with a few exceptions where they were integrated), are family orientated. They are therefore serve as important 'documents' linking people directly by name to the land.

NHRA Category	Graves, cemeteries and burial grounds
Protection status	
General Protection - Section 36: Graves or burial grounds	



Fig. 6: The oldest cemetery in Lephalale

- Infrastructure and industrial heritage

In many cases this aspect of heritage is left out of surveys, largely because it is taken for granted. However, the land and its resources could not be accessed and exploited without the development of features such as roads, bridges, railway lines, electricity lines and telephone lines, as well as industries that exploit locally available resources.

NHRA Category	Buildings, structures, places and equipment of cultural significance
Protection status	
General Protection - Section 34: Structures older than 60 years	



Fig. 7: Head-gear of the first mine shaft that was sunk in the region

5.4: Identified sites

The following sites, features and objects of cultural significance have been identified on the development site.

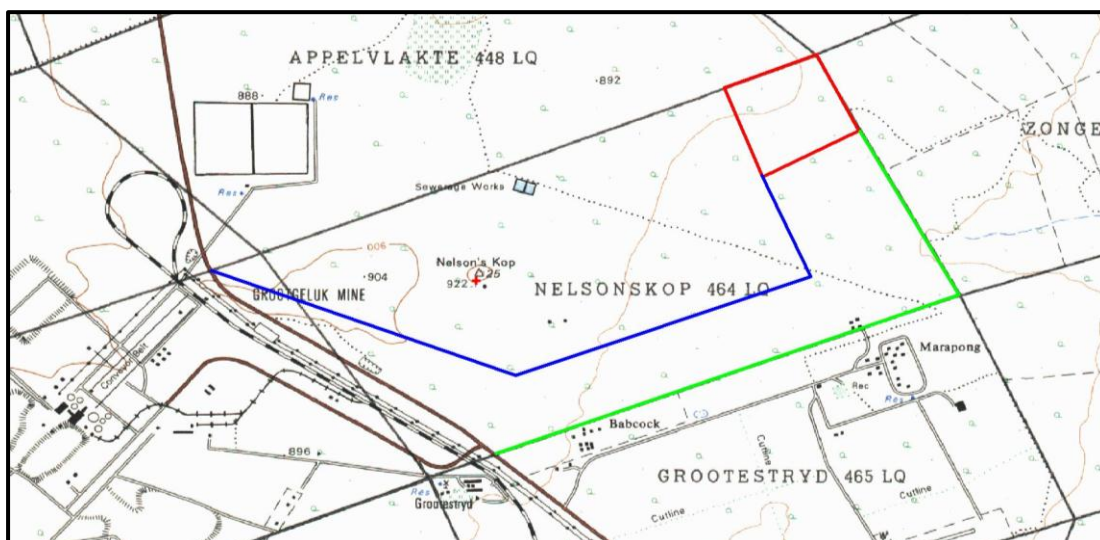


Fig. 8: The study area showing the location of known heritage sites

5.4.1 Stone Age

- Archaeological sites

NHRA Category	Archaeological and palaeontological sites
Protection status	General Protection - Section 35: Archaeology, palaeontology and meteorites

Location	1	S 23.65132	E 27.58651
Description	<p>On the koppie named Koorn Kop some interesting engravings of animal spoors, cupules and cut marks were identified on the southern face of the hill. In addition, on top of the hill a number of small stone walled sites occur. A few non-diagnostic stone flakes and potsherds occur in the shelter.</p> <p>From ethnographic sources it is known that hills or promontories, for example in the Karoo, are important features to the San because they offer vantage points in an otherwise remarkably flat landscape from which the springbok may be watched (Deacon 1988). This is probably the purpose of the stone circles on top of Nelson's Kop, serving as lookout points. The fact that there is a big panel with a variety of engravings on it indicates that this is in all probability a site of potency, for the making of rain by the San and later Sotho-Tswana speaking people in the area (see Van der Ryst <i>et al</i> 2004).</p>		
Significance	High on a regional level – Grade II		
Mitigation	Present understanding indicates that there would not be any direct impact on the site as a result of the proposed development.		



Fig. 9: The panel with cut marks and an engraving of a kudu spoor

5.4.2 Iron Age

- No sites, features or objects dating to the Iron Age were identified in the study area.

5.4.3 Historic period

- No sites, features or objects dating to the historic period were identified in the study area.

6. SITE SIGNIFICANCE AND ASSESSMENT

6.1 Heritage assessment criteria and grading

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable of mitigation measures would allow the development activities to continue.

6.2 Statement of significance

A matrix was developed whereby the above criteria, as set out in Sections 3(3) and 7 of the NHRA, No. 25 of 1999, were applied for each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar sites. Three categories of significance are recognized: low, medium and high. In terms of Section 7 of the NHRA, all the sites currently

known or which are expected to occur in the study area are evaluated to have a grading as identified in the table below.

Table 2: Summary of identified heritage resources in the study area

Identified heritage resources	
<i>Category, according to NHRA</i>	<i>Identification/Description</i>
Formal protections (NHRA)	
National heritage site (Section 27)	None
Provincial heritage site (Section 27)	None
Provisional protection (Section 29)	None
Place listed in heritage register (Section 30)	None
General protections (NHRA)	
Structures Older Than 60 Years (Section 34)	None
Archaeological Site Or Material (Section 35)	Yes
Palaeontological Site Or Material (Section 35)	None
Graves Or Burial Grounds (Section 36)	None
Public Monuments Or Memorials (Section 37)	None
Other	
Any other heritage resources (describe)	None

6.3 Impact assessment

Based on current information regarding sites in the surrounding area, the sites identified in the study region are judged to have Grade II significance.

- The identified site is viewed to have a high significance on a regional level. Present understanding indicates that there would not be any direct impact on the site as a result of the proposed development.

Nature: The potential impact of the construction of the PV panels on above and below ground archaeology.		
	Without Mitigation	With Mitigation
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	High (5)	High (5)
Probability	Unlikely (2)	Unlikely (2)
Significance	Low < 30	Low < 30
Status (positive or negative)	Negative	Neutral
Reversibility	No	No
Irreplaceable loss of resources?	No, but in some cases, yes	No
Can impacts be mitigated?	Yes	

Mitigation:

- » No mitigation is proposed before construction starts because the archaeological remains outside the proposed development area. However, if concentrations of archaeological materials are exposed then all work must stop for an archaeologist to investigate (see below).
- » 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 nearest museum/archaeologist or to the South African Heritage Resources Agency, 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.

Cumulative impacts:

N/A

Residual impacts:

N/A

7. CONCLUSIONS

The aim of this survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area of the proposed development, to assess the significance thereof and to consider alternatives and plans for the mitigation of any adverse impacts.

- On the koppie named Koorn Kop (Nelsonkop) some interesting engravings of animal spoors, cupules and cut marks were identified on the southern face of the hill. In addition, on top of the hill a number of small stone walled sites occur. A few non-diagnostic stone flakes and potsherds occur in the shelter.
- From ethnographic sources it is known that hills or promontories, for example in the Karoo, are important features to the San because they offer vantage points in an otherwise remarkably flat landscape. The fact that there is a big panel with a variety of engravings on it indicates that this is in all probability a site of potency, for the making of rain by the San and later Sotho-Tswana speaking people in the area.

Present understanding indicates that there would not be any direct impact on the site as a result of the proposed development. In contrast the visual impact would be greater, especially if one stands on top of the hill.

8. REFERENCES

8.1 Data bases

Chief Surveyor General
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.
Heritage Atlas Database, Pretoria.
National Archives of South Africa
SAHRA Archaeology and Palaeontology Report Mapping Project (2009)

8.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

Baines, T. 1877. *The gold regions south eastern Africa*. London: Edward Stanford.

Deacon, J. 1988. The power of place in understanding southern San rock engravings. *World Archaeology* 20(1): 129-140.

Eastwood, E.B., Bristow, C. & Van Schalkwyk, J.A. 1999. Animal behaviour and interpretation in San rock art: a study in the Makgabeng Plateau and Limpopo-Shashi confluence area, southern Africa. *Southern African Field Archaeology* 8: 60-75.

Hall, S. & Smith, B. 2000. Empowering places: rock shelters and ritual control in farmer-forager interactions in the Northern Province. *South African Archaeological Society Goodwin Series* 8: 30-46.

Huffman, T.N. & Van der Walt, J. 2008. *Road Construction and Widening Project*. Unpublished report, Archaeological Resources Management. Johannesburg: University of the Witwatersrand.

Pistorius, J.C.C. 2007. *A Phase 1 heritage impact assessment study for the Eskom Mmamabula-Delta project near Lephalale in the Limpopo Province of South Africa*. Pretoria: Unpublished report.

Van der Ryst, M., Lombard, M. & Biemond, W. 2004. Rocks of potency: engravings and cupules from the Dovedale ward, southern Tuli Block, Botswana. *South African Archaeological Bulletin* 59(179): 1-11.

Van Schalkwyk, J.A. 2005a. *Heritage impact scoping report for the proposed new Matimba B power station, Lephalale district, Limpopo Province*. Unpublished report 2005KH060. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2005b. *Heritage survey report of the Kumba Properties at Grootegeluk Mine, Lephalale area, Limpopo Province*. Unpublished report 2005KH090. Pretoria.

Van Schalkwyk, J.A. 2008. *Heritage survey report for the development of a water reservoir and pipelines for the new Medupi Power Station, Ellisras magisterial district, Limpopo Province*. Unpublished report 2008/JvS/015. Pretoria.

Van Schalkwyk, J.A. 2009a. *Heritage scoping assessment for the proposed development of a power station west of Lephalale, Ellisras magisterial district, Limpopo Province*. Unpublished report 2009/JvS/001. Pretoria

Van Schalkwyk, J.A. 2009b. *Heritage impact assessment report for the proposed coal-fired power stations in the Waterberg region west of Lehalale, Limpopo Province*. Unpublished report 2009KH003. Pretoria.

Van Schalkwyk, J.A. 2009c. *Heritage scoping assessment for the proposed development of coal mining activities west of Lephalale, Ellisras magisterial district, Limpopo Province*. Unpublished report 2009/JvS/023. Pretoria.

8.3 Maps and aerial photographs

1: 50 000 Topocadastral maps: 2327DA
Google Earth

APPENDIX 1: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
2. Aesthetic value				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
3. Scientific value				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
4. Social value				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
5. Rarity				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
6. Representivity				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics 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.				
7. Sphere of Significance		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
8. Significance rating of feature				
1.	Low			
2.	Medium			
3.	High			

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(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;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment 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.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) 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.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.