PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT SPECIALIST STUDY REPORT FOR PROPOSED CONSTRUCTION OF A 150MW PHOTOVOLTAIC POWER PLANT ON ERF 6, 7 AND 9 OF THE FARM TWEEFONTEIN 541 JR, BRONKHORSPRUIT IN KUNGWINI LOCAL MUNICIPALITY, METSWEDING DISTRICT WITHIN GAUTENG PROVINCE

Prepare by Nzumbululo Heritage Solutions

FOR: KALA-HARI SURVEY SOLUTIONS AND PRODUCTS CC

Final Report
2nd Edition

October 2010

www.nzumbululo.com

DOCUMENT INFORMATION

Citation:	**PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT SPECIALIST STUDY REPORT FOR PROPOSED CONSTRUCTION OF A 150MW PHOTOVOLTAIC POWER PLANT ON ERF 6, 7 AND 9 OF THE FARM TWEEFONTEIN 541 JR, BRONKHORSPRUIT IN KUNGWINI LOCAL MUNICIPALITY, METSWEDING DISTRICT WITHIN GAUTENG PROVINCE**
Versions:	Version1: Draft Working Report issued September 2010 Version 2: Final Scoping HIA Report Sept. 2010 REF. 2010 PLK.HESSA.PRO.0018 (Issues to Client & G-PHRA) Version 3: PHASE 1 A/HIA FINAL REPORT (Edition 2) 2010 PLK.HESSA.PRO.0018/2 [G-PHRA Authority, October 2010]
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CAVEAT

PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT SPECIALIST STUDY REPORT FOR PROPOSED CONSTRUCTION OF A 150MW PHOTOVOLTAIC POWER PLANT ON ERF 6, 7 AND 9 OF THE FARM TWEEFONTEIN 541 JR, BRONKHORSPRUIT IN KUNGWINI LOCAL MUNICIPALITY, METSWEDING DISTRICT WITHIN GAUTENG PROVINCE

Authorship: This Report has been prepared for Kala-hari Survey Solutions & Products by Nzumbululo Heritage Solutions as part of Environmental Impact Assessment Exercise. The report is for the review of the Gauteng Provincial Heritage Authority.

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: Nzumbululo Heritage Solutions is not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the EIA of the proposed Construction of A 150mw Photovoltaic Power Plant nn Erf 6, 7 And 9 of the Farm Tweefontein 541 Jr, Bronkhorspruit in Kungwini Local Municipality, Metsweding District Within Gauteng Province.

Signed by Principle Investigator:

McEdward Murimbika (Ph.D.)
October 2010

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AUTHOR IDENTIFICATION

Dr. Murimbika assisted by Mr M. Mabuda and Mr T Mlilo of Nzumbululo Heritage Solutions prepared this Report.

ACKNOWLEDGEMENTS

The authors acknowledges the assitance of Kala-hari Survey Solutions & Products staff for their assistance and coorperation during the field investigations and for their assistance with information, guidelines and logistical support.

MANAGEMENT SUMMARY

Nzumbululo Heritage Solutions (HeSSA) has been commissioned by Kala-hari Survey Solutions & Products to conduct an Archaeological and Heritage Assessment Study on a Site of Interest for the proposed construction of a 150MW Photovoltaic power plant on ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality, Metsweding District within Gauteng Province. The proposed development will include construction of a 150MW power plant and its associated infrastructure which include a substation and loop in and out power-lines. Field studies were conducted in July and August 2010 under the direction of Principal Investigator, M. Murimbika (Dr). The study focuses on potential impacts on archaeological, and cultural heritage resources associated with the proposed construction's receiving environment. This report includes results of an archaeological and heritage scoping study done for the affected photvoltaic power plant development project area. Therefore, the findings of this A/HIA report are informed by desktop review, and field survey and assessment studies and the subsequent Phase 1 Archaeological and Heritage Impact Assessment Scoping Report (September 2010).

Analysis of the archaeological, cultural heritage, environmental and historic context of the study area predicted that archaeological sites, burial grounds or artefacts were likely to be present in the geographical region where the project area is located. The field survey did verify this prediction and confirmed the presence of at least 31 historic graves spread on eight different burial grounds within the farmland affected by the proposed development. The level of disturbance on large sections of the affected project site is such that it is unlikely that any other high significant physical archaeological heritage sites remain in tact and visible on ground surface and *in situ*. Large tracts of land were previously and currently cultivated for commercial agricultural activities. The evidence of previous accesss road works, and associated earth movement, and existence of farm boundary fence line development, fire breaks, Powerline servitudes, Telkom telecommunication line servitude, and contemporary agro-activity infrastructures on the farmland highlight the obeservation that considerable land portions associated with proposed construction of a 150MW Photovoltaic power plant on ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality had previously undergone extensive earth movement and subsurface ground distrubance actitivities.

The report makes the following observations:

- The study did not find conclusive descenable or tangable evidence of the existance of archaeological sites on affected farmland. This is especially clear from the observation that the project site is severely degraded from generational changing land use patterns in the area. However, the study identified at least 31 graves spread over ten sites which are located within each other's proximity within the affected farmland.
- The possibility of encountering *in situ* archaeological or historical sites associated with project area, should the proposed development be approaved, is limited. However, there are sections of the project site that are considered potential archaeological areas which may have attracted pre-historic communities. As such, this study can not rule out the posibility of encountering chance finds during the course of the proposed development, particulalrly during subsurface foundation and trench construction works.
- Although no archaeological, physical cultural properties sites were recorded on the project site, the affected area does retain local historical cultural landscape significance.

The Report makes the following recommendations:

- The affected section of the Land Portions ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality, Metsweding District within Gauteng Province area is situated within a contemporary degraded cultural landscape with and surrounded by existing agri-activity landscape, with sections that were previously built up as historic commercial farm settlements, and associated infrastructures. As such the area should be treated as of low significance from cultural landscape perspective.
- Should the proposed development be cleared to proceed as designed and given the nature of the proposed development, it is recommended that all the burial graves recorded during this study be relocated to a safe and secure cemetery or burial ground. Although some of the affected burial sites and associated graves form the eight recorded sites may not be directly disturbed by the proposed construction, the nature of the power plant will remnder these sites in-accessible making them isolated from the communities and the decendants of the deceased. There being no other tehcnical or physical protection of the affected sites available, this study recommends total relocation of all affected burials in order to protect and ensure access to these graves by the descendants in the furutre.
- The study did not identify any archaelogical or heritage resources barrier to the proposed development and associated infrastructure developments.
- The proposed construction of a 150MW Photovoltaic power plant development will not affected any known archaeological or historical physical cultural properties in the area. As such the construction of a 150MW Photovoltaic power plant may be approved subject to cautionary heritage monitoring measures being incorporated into the development Environmetal Management Plan (EMP).
    - The proposed developments may be approved by the heritage authority to proceed as planned subject to:
        - A heritage monitoring plan and chance find rescue and salvage measures being incorporated into the project construction EMP.
        - A phase 2 Heritage Impact Study should be commissioned to ensure the proper exhumation and relocation of the affected graves to a secure and acceptable burial ground. All the SAHRA regualtions, associated provincial and SAHRA Burial and Graves Unit guidelines and local municipality grave ordinances will form the basis of the recommended Phase 2 HIA Burial Relocation Study.
    - Should construction work commence for this project:
        - The contruction teams should be inducted on the significance of the possible archaeological resources that may be encountered during subsurface construction work before they work on the area in order to ensure approate treatment and course of action is afforded to any chance finds.
        - If archaeological materials are uncovered during subsurface construction, work should cease immediately and the heritage authority be notified and activity should not resume until appropriate management provisions are in place.

The findings of this report, with approval of the heritage authority, may be classified as accessible to any interested and affected parties within the limits of the laws.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
C	Contractor
CECO	Construction Environmental Conservation Officer
EAP	Environmental Assessment Practitioner
ECO	Environmental Conservation Officer
EIA	Environmental Impact Assessment
ESA	Early Stone Age
EM	Environmental Manager
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
PM	Project Manager
SA	Stone Age
SM	Site Manager
SAHRA	South African Heritage Resources Agency

DEFINITIONS

The following terms used in this A/HIA are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, PHRA and South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter (Burra Charter):

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the National Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeolontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or

scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

***In Situ* material** *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Fabric means all the physical material of the place including components, fixtures, contents and objects.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Use means the functions of a place, as well as the activities and practices that may occur at the place.

Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Setting means the area around a place, which may include the visual catchment.

Interpretation means all the ways of presenting the cultural significance of a place.

1. INTRODUCTION

1.1 BACKGROUND

This Archaeological and Heritage Impact Assessment (HIA) Version 2 Report has been prepared for the construction of a 150MW Photovoltaic power plant and associated infrastructure development project. A Phase 1 HIA Scoping Study Report was produced for this study in which preliminary results and recommendations were made. The study was conducted as part of the Environmental Impact Assessment (EIA) for the proposed construction of a 150MW Photovoltaic power plant and associated infrastructure on ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality, Metsweding District within Gauteng Province (see Fig. 1). Kala-hari Survey Solutions and Products CC commissioned the study. This report is a follow through version of the scoping report already published for this study. As such the report details the field study, results of the study as well as discussion on the anticipated impacts of the proposed development. It focuses on identifying and assessing potential impacts on archaeological resources as well as on other physical cultural properties including historical heritage resources in relation to the proposed 150MW Photovoltaic power plant and associated infrastructure.

The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the power plant and associated auxiliary installations as well as associated infrastructure development. The assessment includes recommendations to manage the expected impact of the 150MW Photovoltaic power plant and associated infrastructure route. The report includes recommendations to guide heritage authorities in make appropriate decision with regards to approval process for the proposed development. The report concludes with detailed recommendations on heritage management associated with the proposed development construction work.

In line with the South African Heritage Resources Agency (SAHRA) national guidelines, this report, not necessarily in that order, provides:

1) Management summary
2) Methodology
3) Information with reference to the desktop study
4) Map and relevant geodetic images and data
5) GPS co-ordinates and Directions to project area
6) Site description and interpretation of the cultural area where the project will take place
7) Management details, description of affected cultural environment, photographic records of the project area

8) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site

9) Conclusion.

1.2 LOCATION OF ACTIVITY AREA

This study focuses on a *specific area of interest*, covering ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality, Metsweding District within Gauteng Province (Fig. 1). The activity area forms part of farmland used for farming (see Figs. 1–3). There are farm boundary fence lines, access gravel roads, tracks criss-crossing the affected land as well as cleared land strips on sections with dense grass cover, an large tracts of land under agricultural landuse. Portions of the affected area were under cultivation during the field survey.

Figure 1: Topographic Map of the area where proposed project is situated off the R42 southeast of the Bronkhorspruit Dam in Kungwini Local Municipality.

The project area is accessed through the N4 from Pretoria travelling east and turn into Bronkhorspruit Road and then south into R42 Road within Kungwini Local Municipality. The affected farmland is just east of Bronkhorspruit Dam (see Fig. 1, 2, 3).

1.2 ACTIVITY DESCRIPTION

A new 150MW Photovoltaic power plant is proposed on ERF 6, 7 and 9 of the farm Tweefontein 541 JR, Bronkhorspruit in Kungwini Local Municipality, Metsweding District within Gauteng Province. The Photovoltaic plant in South Africa Technical Report provides a technical description of the proposed plant as follows:

> *The power plant will consist of thin-film photovoltaic modules with an amorphous and microcrystalline silicon layer. This microamorphous tandem structure not only absorbs visible light but also the invisible portion of the solar spectrum. This makes especially efficient use of solar energy. The module is SHARP NA – 145 (G5) Series with has a nominal power of 145Wp, efficiency 9.5 % and their efficiency well reduce of about 20% in 25 years.*
>
> *The photovoltaic power plant well be made with 151 photovoltaic fields (see Illustration 1) and each one has a peak power of 997,02 kWp. Every field has 573 strings and every string has 12 modules, so each field has 6876 modules; in total the power plant has 1.038.276 modules, for a total power of 150.55 MWp. The strings are connected in parallel into string panels, the string panels are connected into subfield panels that will be connected to the inverter/transformer (low voltage/medium voltage) DC/AC – 600 V/ 20.000 V with a nominal power of 1000 kVA. So, in the cabins there are:*
>
> *- field panels;*
>
> *- inverter/transformer;*
>
> *- switches.*
>
> *Into the electrical power station will be 5 transformers, medium voltage/high voltage (20/220) kV with a power of 30 MVA each, for delivering the production of energy in the electrical grid. The modules are orientated to north with azimuth of 17°. The global irradiation, that in South Africa is between 2.400 and 2.500 kWh/m2.*

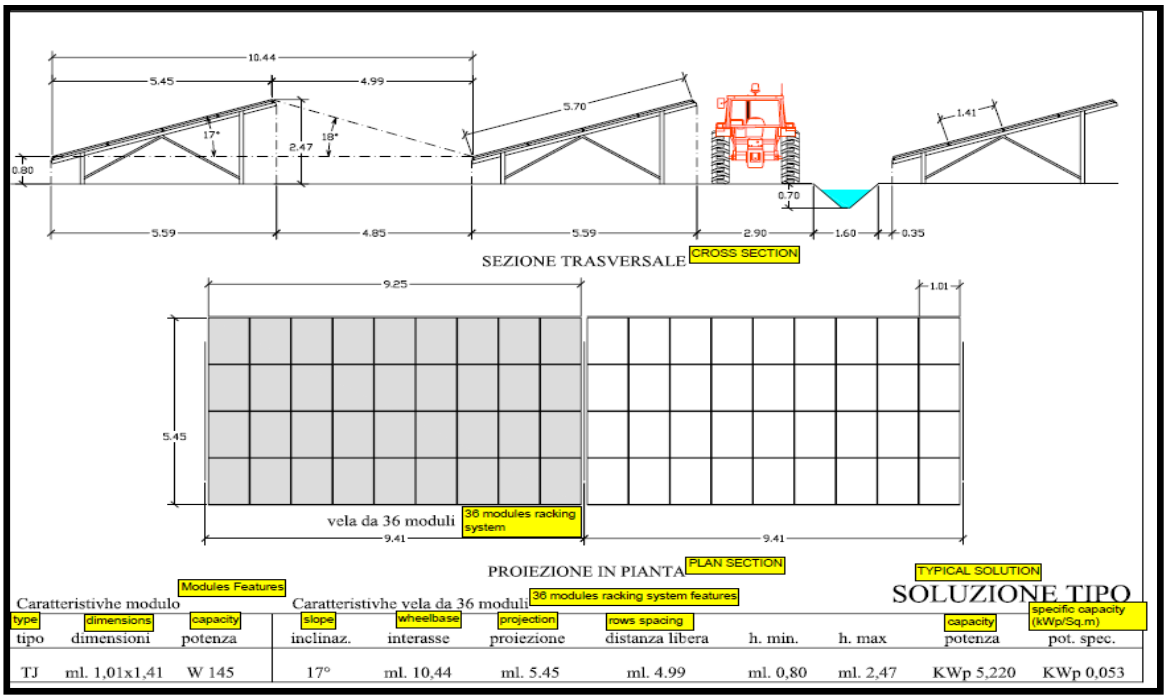


Figure 2: Technical design layout of proposed photovoltaic power plant.

2. STATUTORY REQUIREMENTS

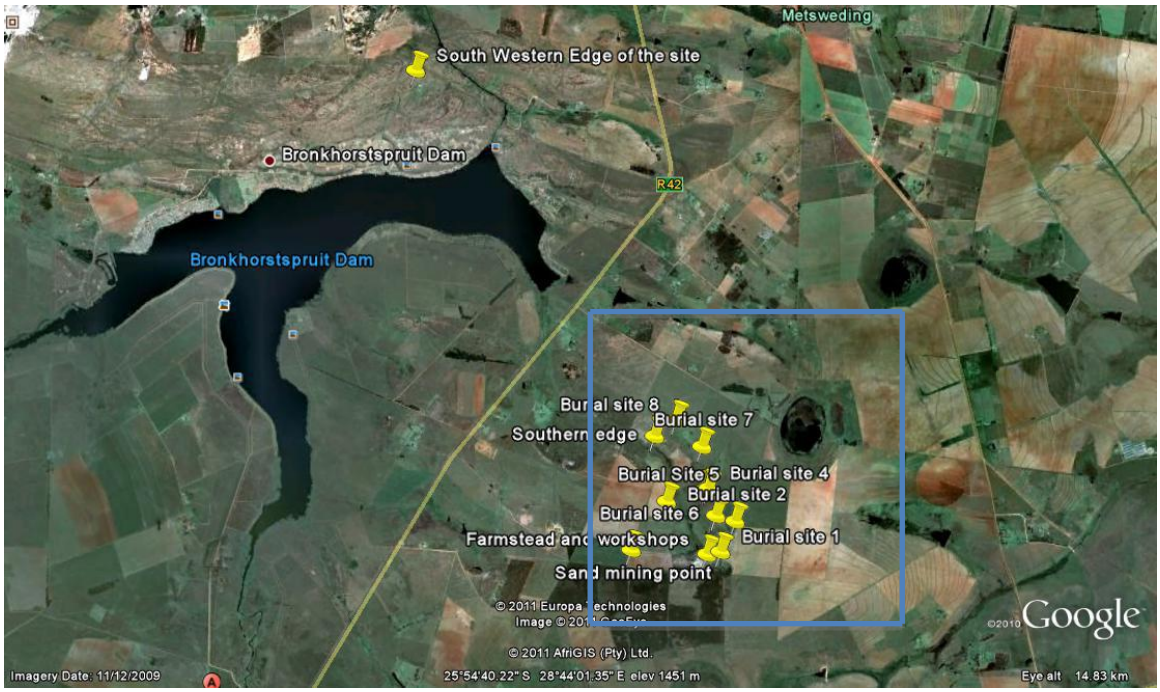
The statutory mandate of heritage impact assessment studies is to encourage and facilitate the protection and conservation of archaeological and cultural heritage sites, in accordance with the provisions of the National Heritage Resources Act, Act 25 of 1999 and the supporting provincial regulations. Therefore, in pre-development context, heritage impact assessment study is conducted to fulfil the requirements of Section 38 (1) of the National Heritage Resources Act (No 25 of 1999). The Act requires that when constructing a linear development exceeding 300m in length or developing an area exceeding 5000 m² in extent, the developer must notify the responsible heritage authority of the proposed development and they in turn must indicate within 14 days whether an impact assessment is required. The NHR Act notes that —any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent", the heritage authority here being Provincial Authority.

Both the national legislations and provincial provisions provide protection for the following categories of heritage resources:

- Landscapes, cultural or natural;
- Buildings or structures older than 60 years;
- Archaeological Sites, palaeontological material and meteorites;
- Burial grounds and graves;
- Public monuments and memorials;

- Living heritage (defined as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships).

Figure 3**:** Areal View of the project area covered in this study. Note the burial sites within the project area – discussed below (After Google Earth, 2010).



3. STUDY TERMS OF REFERENCE

Nzumbululo Heritage Solutions was asked to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of site associated with the proposed Construction of a 150MW Photovoltaic power plant development, including any known data on sites in the affected areas;
- Provide details on methods of study, identify potential impacts and provide recommendations to guide the provincial/national heritage authority to make an informed decision with regards to authorisation of the proposed photovoltaic power plant development.

Figure 4: Aerial view of the affect farmland where the photovoltaic farm will be established. Site is bound by the R42 to the west (left side of aerial image).

4. METHODOLOGY

The proposed Construction of a 150MW Photovoltaic power plant Development requires clearance and authorisation from government compliance agencies including the heritage authority of the Gauteng Province. Key A/HIA objectives for this project are to:

- Fulfil the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, section 38 and the auxiliary provincial regulations.
- To identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed photovoltaic power plant project. This study should include where appropriate, identifying sites and features of traditional historical, social, scientific, cultural and aesthetic significance within the affected study area as well as the identification of gravesites.
- Assess the significance of the archaeological and other heritage resources where they are identified.

- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed development.
- Provide guidelines for protection and management of identified heritage sites and places (including associated intangible heritage resources management that may apply).
- Consult with the affected and other interested parties, where applicable, in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Take responsibility for communicating with the heritage authorities in order to obtain the relevant permits and authorization with reference to heritage aspects.

In order to meet the objectives of the A/HIA Phase 1 study, the following tasks were conducted: 1) site file search, 2) limited literature review, 3) completion of a field survey and assessment and 4) analysis of the acquired data and report production. The following activities were undertaken:

- Preparation of a predictive model for archaeological heritage resources in the study area.
- A review and gap analysis of archaeological, historical and cultural background information, including possible previous heritage consultant reports specific to the affected project area, the context of the study area and previous land use history as well as a site search;
- Field survey of sampled sections of the project sie and, in order to test the predictive model regarding that heritage sites in the area;
- Physical cultural property recording of any identified sites or cultural heritage places;
- Identification of heritage significance; and
- Preparation of A/HIA report with recommendation, planning contraints and opportunities associated with the proposed development.

The background information on the existing environment in the project area was recorded during a reconnaissance survey and was complimented by information provided by the project environmentalists. The reconnaissance study was conducted in August 2010 during which we gathered geographical and topographical background information along the proposed construction site (Fig 1- 4). We subsequently conducted a detailed field survey of the affected landscape. The survey was aimed at identifying archaeological sites and physical cultural resources signatures as well as other cultural heritage sites such as graves, burial and religious or sacred sites that may be affected by the proposed construction of a 150MW Photovoltaic power plant and associated infrastructure project. A team of two archaeologists systematically transacted the proposed construction site on foot.

Distribution of archaeological sites across the landscape depends on a number of related factors, such as preservation conditions over time, the degree to which sites are exposed through erosion or lack of

vegetation and the actual decisions of the people who created the sites and deposited the materials originally. Using the preliminary findings from the reconnaissance study we applied a judgement surveying strategy (stratified sampling). We divided the affected landscape into geographical zones (built up sections, land under crops, open grass lands, hills, gully, ridge, and stream, cleared land strips or stream valley section). Naturally, we placed more emphasis on areas we believed had potential of archaeological, historical or other physical cultural resources.

Figure 5a & b: View of the general condition of the proposed power plant site. The affected area has been used for agricultural activities for several generations.

Old agricultural fields, grazing lands, vegetated stream valleys; access and main road infrastructures, existing operational open cast gravel mining site and other auxiliary infrastructures dominate the affected project area. The project area is highly accessible. However, some sections are covered with dense bushes. In general it was difficult to locate archaeological sites/materials because most of the areas covered by dense bushes were impenetrable. This made detailed surficial inspection of such portions of the proposed the development site limited. Although the survey covered most of the project site by transect foot survey, the survey applied judicial systematic stratified sampling across the affected landscape focusing on the cleared land strips and open field sections (also see Figures 5a & b and Figures 1 and 8). Although limited sections of ground surface were covered with grass and thick bushes, this did not impede adequate surficial feature identification of possible archaeological sites in sampled areas particularly those earmarked for the development (Figure 5a & b).

Geographic coordinates were obtained with a handheld Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.


Figure 6a & b: Most of the affected project area consists of historic commercial agricultural landscape. The area still has cultivated sections and cleared portions used for cattle grazing. Note the gravel open cast-mining site in the foreground.

4.1. ASSUMPTIONS AND LIMITATIONS

A limited literature review was completed to provide the general archaeological and historical context to determine the sensitivity of the cultural landscape. Literature does highlight that the Kungwini Local Municipality area of the Gauteng Province cultural landscape has potential to yield physical cultural properties including Iron Age archaeological and historical sites potential.

The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, eroded river banks, sand mining degraded areas and the sections exposed by erosion or field ploughing. Some assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should however, be noted that these do not invalidates the findings of this study in any way:

- The proposed construction of a 150MW Photovoltaic power plant and associated infrastructure development will be limited to an area of about 570 ha. The photovoltaic; modules will take up 400 ha because it has to consider a buffer zones for a waterway; an electric power station is foreseen in an about 30 ha large area in the south part of the land.
- Given the heavily degraded nature on most affected project area and the level of high existing developments within the affected landscape, it is assumed most sections of the project area have low potential to yield significant *in situ* archaeological or physical cultural properties.
- No excavations or sampling were undertaken, since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on surficially observed indicators. However, these surface observations concentrated on exposed sections such as road cuts and clear farmland.
- No palaeontological survey was conducted.
- This study did not include any ethnographic and oral historical studies nor did it investigate the settlement history of the area.

4.2. CONSULTATION

No community consultation was conducted during this phase of the A/HIA study. However, the EIA Public Participation Process (PPP) invited public comments on any matter related to the proposed development. No heritage matter was raised or arose from the EIA PPP exercise, save for the possible grave relocation should the project be approved to proceed as planned.

5. CULTURE HISTORY BACKGROUND OF THE PROJECT AREA

5.1. BIOPHYSICAL DESCRIPTION OF THE PROJECT AREA

The proposed project development is located in a commercial farming area marked with built up areas, roads and farm tracks, power and telecommunication lines, boundary fence lines, grazing land , cornfields and sand mining sites (Figures 1 to 5). From the records accessed, no systematic specific archaeological research and local archaeological surveys/recordings have been conducted on the affected project area in Bronkhorspruit. Generally, this area has a long history of intensive land use that left a distinctively altered landscape. Culture-historically, Gauteng area has yielded evidence of human settlement extending into hundreds of thousands of years of prehistory going back as far as the palaeontological human-evolutions through Stone Age, Iron Age, Historical period to contemporary communities.

Iron Age sites associated with the ancestors of the modern Sotho-Tswana and Ndebele speaking communities are wide spread in the region. In recent colonial history, the area played host to different competing local settler communities. The area was a scene of series of colonial wars. By the end of the 19th century, the region was placed under British rule and the local people displaced. Today most of the land is used for commercial, mining, agricultural activities and industrial activities. It is within this cultural landscape that the project area is located.

5.2. STONE AGE

The project area, like most of Eastern and Western Cape coastal and inlands, has a culture history that goes back to Stone Age periods (also see Deacon and Deacon, 1997). The San hunter-gather people have lived in the coastal to inland southern and northern grasslands and hills of the modern day Gauteng Province for millenniums long before the Bantu-speaking farmers began arriving in southern Africa 1500 year ago. The San hunter-gatherer left behind a large amount of archaeological evidence including hunting camps marked with shell ash midden, stone tools, rock art (usually on rock shelter and cave walls and as well as cliff faces that today are some of the most unique prehistoric paintings on the continent) (Deacon and Deacon 1999).

In general, the oldest evidence of the early inhabitants in the Gauteng comprise of large stone tools, called hand axes and cleavers found amongst river gravels and in old spring deposits in the region. These date to the Earlier Stone Age (ESA) and may date between 1,5 million and 250 000 years old (also see Deacon, 1970). In line with culture history chronology, the large hand axes and cleavers were replaced by smaller stone tools of the Middle Stone Age (MSA), which consists of flake and blade industries. Evidence of MSA sites occur throughout the Gauteng region and date between 250 000 and 30 000 years old. These stone artefacts, like the Earlier Stone Age tools are also found in the gravels along the banks of the main rivers. Most archaeological sites found in the Gauteng area Later Stone Age (LSA) dating from the past 10 000 years. The LSA is characterised campsites of San hunter-gatherers and Khoi pastoralists. Despite their estimated ubiquitous, LSA sites pose a bigger challenge to identify *in situ* because they are spread on open agricultural lands most of which today are covered by the cultural landscape affected by the proposed project area. The preservation of these LSA sites is poor and it is not always possible to date them. At most LSA sites are only represented by a few stone tools and fragments of bone (Deacon & Deacon 1999).

5.3. IRON AGE

Some 1600 years ago, southern Africa region witnessed the arrival of Bantu farmers. The Iron Age of the Indian Ocean, the earliest arrivals, in South Africa dates back to the 5th Century AD. These Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region which was then occupied by San hunter-gatherers and the Khoi pastoralists. These EIA communities are archaeologically referred to as the Mzonjani facies of the Urewe EIA Tradition (Huffman, 2007: 127-9). They occupied the foot-hills and valley lands along the general Indian Ocean coastland introducing settled life, domesticated livestock, crop production and the use of iron (also see Huffman 2007). These settled farming communities were concentrated to the eastern regions (Huffman, 2007).

From the Late Iron Age (LIA) perspective, the project area is associated with Late Iron Age Sotho Tswana communities and has yielded four ceramic sequences of the Urehwe tradition: Ntsuanatsatsi (1450-1650), Olifantspoort (AD 1500 - 1700) and Uitkomst (AD 1700-1850) and Buispoort (1700-1840) [Huffman 2007: 443). These Late Iron Age Nguni communities engaged in the Indian Ocean Trade exporting ivory and importing consumables such as cloth and glass beads. This brought the Nguni speaking community in touch with the IndoAsian and first Europeans (Portuguese). It was the arrival of the Dutch and the English traders that opened up Delagoa Bay to more trade (Huffman 2007). Furthermore, The arrival of the first European settlers on the coast in Cape Town in the mid-1600s added a new mix that will shape the history of the region to what became South Africa.

5.4. HISTORICAL BACKGROUND

From the late 1700s, trade in supply of meat to passing ships on the east coast had increased substantially to an extent that by 1800 meat trade is estimated to have surpassed ivory trade. At the same time population was booming following the increased food production that came with the introduction of maize that became the staple food. These changes promoted further westwards movement by the Nguni farming communities.

Naturally, there were signs that population groups had to compete for resources and at time move out of region, which may have been under stress. KwaZulu Natal, east of the Gauteng has a special place in the history of the region and country at large. This relates to the most referenced *mfecane* (wandering hordes) period of tremendous insecurity and military stress. Around the 1805, the region was witnessing the massive movements, which later came to be associated with the *mfecane*. The causes and consequences of the *mfecane* are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988).

In recent colonial history, the area played host to different competing local settler communities. The area was a scene of series of colonial wars. By the end of the 19th century, the region was placed under British rule and the local people displaced. This part of Gauteng was scene of the most recorded colonial war, the Battle of Majuba during the Anglo-Boer War 1899-1902. At the end of these wars, the colonial era of the Union of South Africa and the subsequent apartheid regimes on the Republic of South Africa, some areas were reserved for African settlements often referred to as Bantu homelands such as the KwaNdebele homeland.

6. RESULTS OF THE ARCHAEOLOGICAL/HERITAGE ASSESSMENT STUDY

6.1. LOCATION DETAILS

Province: Gauteng

Municipalities: Kungwini Local Municipality

Proposed development: Photovoltaic power plant spatial development covering 520 hectares. The development will consist of construction of photovoltaic power plant, access and local roads, powerlines, and associated infrastructure. The development will be an in situ construction and installation of photovoltaic power generating facilities within farmland existing in Bronkhorspruit (see Fig 1 and 2).

1:50 000 map name: 2528 Bronkhorspruit (Figures 1 and 8).

Name Properties affected: ERF 6, 7 and 9 of the farm Tweefontein 541 JR

GPS Co-ordinates:

- S25° 55'.25.6" E028° 44' 34.1" (South Western edge of the site)

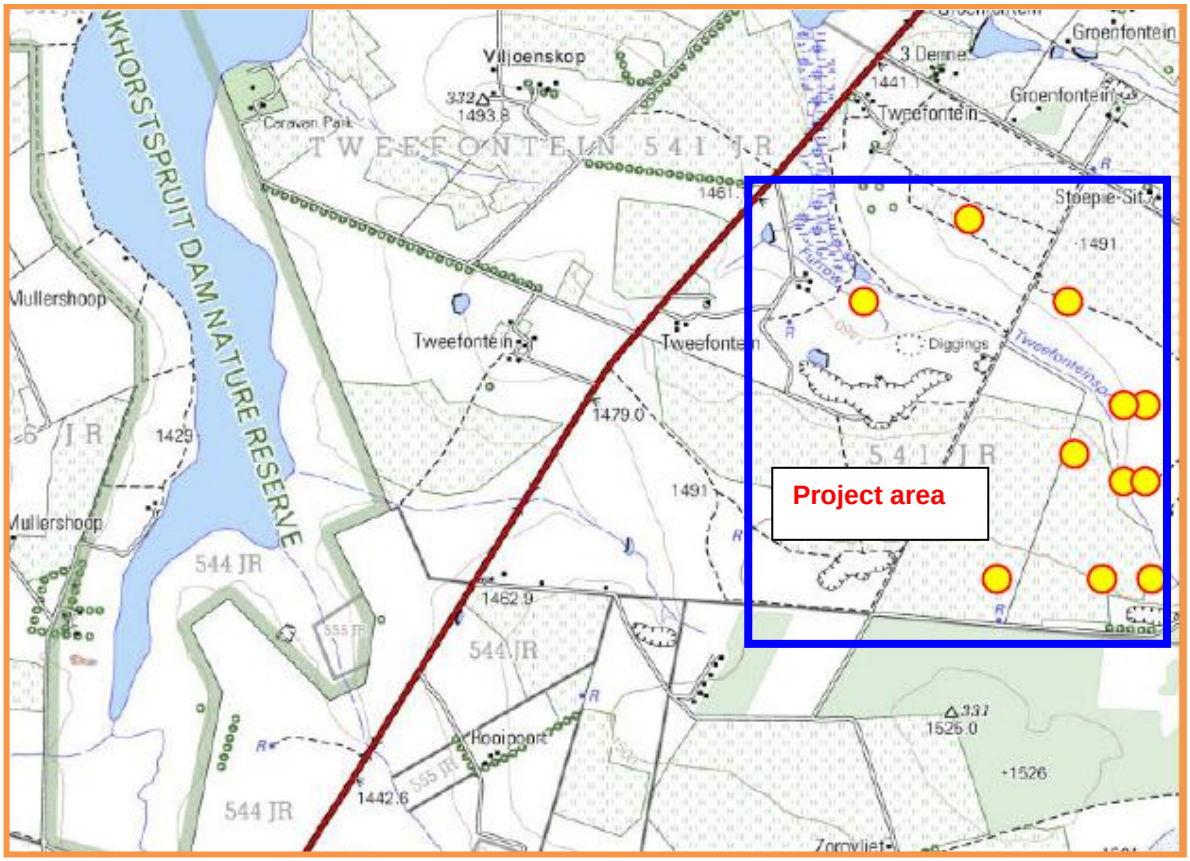
- S25° 56' 14.5" E028° 44' 22.8" (Southern edge)
- S25° 56' 16.4" E028° 44'.59.1" (Sand mining point.)
- S25° 56'.15.3" E028° 45'.05.6" (Farmstead and workshops)
- S25° 56' 02.2" E028° 45' 12.6" (Burial site 1)
- S25° 55' 48.7" E028° 44'.57.8" (Burial site 2.)
- S25° 55 '.48.1" E028 44'.59.9" (Burial site 3)
- S25° 55' 53.7" E028° 44' 39.8" (Burial site 4)
- S25° 55' 59.8" E028° 45' 03.4" (Burial site 5.)
- S25° 55' 30.1" E028° 44'.56.8" (Burial site 6)
- S25° 55' 18.5" E028° 44'.44.4" (Burial site 7)
- S25° 55' 15.0" E028° 44'.26.8" (Burial site 8).

Electrical Connection points coordinates

- Option 1 - 25°48' 44.5"S 28° 46' 14.9"E
- Option 2 - 25° 53' 37.2"S 28° 32' 31.0"E
- Option 3 - 25° 51 ' 57"S 28° 44 28"E
- Option 4 - 26° 0' 8.6"S 28° 16' 11.5"E.

Figure 7: Aerial view of project area showing proposed powerline connections points.

Figure 8: Location of the proposed photovoltaic power plant development site (Topographic Map 2528 Bronkhorspruit).



6.2. ARCHAEOLOGICAL AND HERITAGE SITE

The site of interest for the proposed Construction of a 150MW Photovoltaic power plant development did not yield any archaeological sites or material. The considerable sections of the site are heavily degraded from previous agricultural and contemporary land uses such as sand querying. The detailed inspection of road sections, eroded borrow pit sections, and clear agricultural land strips did not yield any archaeological materials. As such the chances of recovering significant archaeological materials *in situ,* particularly open sites, were seriously compromised and limited. If such sites existed on this particular project area, they may have been destroyed over the land use history of development and other destructive land use patterns such as deep ploughing, road works, borrow pit excavations, residential and associated infrastructure constructions that already exist on the project area (also see Figure 5a&b and 6a&b).

Based on the field study results and field observations, it is the considered opinion of the author that the affected landscape has low potential to yield previously unidentified archaeological sites during subsurface excavations and construction work associated with the proposed photovoltaic power plant development.

6.3. HISTORICAL AND RECENT SITES

Generically speaking, historic sites are associated with white settlers, colonial wars, industrialization; recent and contemporary African population settlements, contemporary ritual sites dating to the last hundred years. However, recent historic period sites and features associated with the, African communities, settler and commercial farming communities are on record in the general Bronkhorspruit project area environs. Although the affected general landscape is associated with historical events such as white settler migration, colonial wars and the recent African peopling of the region, no listed specific historical sites are on the proposed development sites.

The more common functions of places of cultural historical significance may include:

- Domestic
- Recreation & culture
- Commerce & trade
- Agriculture & subsistence
- Social
- Health care
- Religion
- Designed landscape
- Funeral (cemeteries, graves and burial grounds)
- Civil and Structural Engineering
- Education
- Defence /Military

The affected farmland has a couple of farmhouses. Farm labourers and tenant farmers have largely occupied the area until the 1990s. No significant historical sites or historical buildings were recorded within the affected project area. There are no declared or listed historical structures or monuments within the project area.

6.4. BURIAL GROUNDS AND GRAVES

Thirty one (31) graves were identified on eight burial sites within the proposed Photovoltaic power plant Project site. The graves are most probably associated with the farm labourers and the farm tenants who resided within the area until the 1990s.

Generally, all burial grounds and gravesites retain the highest social significance threshold (see Appendix 3). They have both historical and socio-cultural significance and are considered sacred to African communities. Wherever they exist, they may not be tempered with or interfered with during any proposed development (even when they are accidentally discovered during development).

Furthermore, it should be noted that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Therefore, in addition to the recorded burial sites, it is common that accidental burial finds are made on construction sites from time to time across the country particulalrly on historical cultural landscapes similar to the development project area.

Burial Ground Site 1 (BGS1)

Burial Ground Site 1 is located at GPS coordinates S25° 56' 02.2" E028° 45' 12.6". Eleven graves were identified at this site. The burial site is fenced off and the graves are clearly visible. Two graves are marked by cement plaster and inscribed headstones. One of the headstones is inscribed *Jona Kabinde 17-08-47 and 5-6-1978*, the inscriptions on the other grave are not very visible because the headstone is cracked. Nine graves are marked by oval shaped stone cairns. We gathered vital information about the history of the graves and their custodians from Alfred Mbulawa Ngoma a local resident.

Figure 9a & b: View of Burial Site 1 with 11 graves fenced in a small enclosure. Note the inscribed headstone (Right) with vital information about one of the deceased buried on this site.

Significance

All 11 graves have high social contemporary significance. They are not older than 60 years old and therefore not covered as heritage sites under the NHRA. The graves are protected under the Human Tissues Act of 1983 and the Municipal Grave Ordinances and a host of other auxiliary measures. However, some of the graves in this burial site are considered ancestral burial sites and as such are treated as places of traditional worship and ancestral offerings. This qualifies them as intangible religious heritage (worship and traditional belief system) sites with significance tied to the historic physical graves.

Impact and Recommendation

All the graves will potentially be disturbed during the proposed power plant development. Furthermore, once the plant is developed and operational, there will be no access to this burial site should it be protected in situ. It is the considered recommendation of this study, should the development be cleared to proceed as planned, a Phase 2 HIA Study be conducted to facilitate the exhumation and relocation of all the graves from this site. The option of leaving the graves in situ is not recommended given the fact that once the plant is operational, the grave site will be cut-off the descendants will not be able to reach the ritual or traditional site of worship where the graves are situated.

Burial ground site 2 (BGS2)

Burial Ground Site 2 is located at GPS coordinates S25° 55' 48.7" E028° 44' 57.8" adjacent to Burial ground site 1. Ten graves were identified at this site. The burial site is fenced off and the graves are clearly visible. One grave is marked by cement plaster and a headstone inscribed *Engis Masilela wabuba 12 Dec 1970*. Eight (8) graves are marked by oval shaped stone cairns.

Figure 10a & b: View of Burial Site 2 with 10 graves and an inscribe headstone of a burial dated to 1970 (Right).

Significance

All ten graves have high social contemporary significance dating from the 1970s. Although they are not older than 60 years old and protected by Section 36 of the NHRA, the burial ground has high socio-cultural significance. This significance is tied to the site being considered an ancestral resting place, a place of ancestral worship or a place where descendants commune with their departed relatives and ancestors. Furthermore, the graves are protected under the Human Tissues Act of 1983 and the Municipal Grave Ordinances and a host of other auxiliary measures.

Impact and Recommendation

The proposed power plant development may potentially damage some or all of the graves. The construction and operation of a power plant on this site will also render the burial ground inaccessible. We therefore recommend that, should the development be cleared to proceed as planned, a Phase 2 HIA Study be conducted to facilitate the exhumation and relocation of all the graves from this site to a new secure and accessible burial ground. Such relocation exercise may proceed in accordance with applicable heritage and human tissues Act regulations as well as the municipal public health by-laws that governs the management of exhumation and internment of human remains. The option of leaving the graves in situ is not recommended because it will be impossible and impractical to protect this site during the proposed development. Furthermore, the site will be closed from public access once the

power plant is in operation. This will mean the descendants of the deceased individuals will not be able to visit the graves.

Burial ground site 3 (BGS3)

Burial Ground Site 3 is located at GPS coordinates S25° 55' 48.1" E028° 44' 59.9" A solitary grave was identified at this site. The grave is marked by oval shaped stone cairns.

Figure 11: View of a solitary grave at Burial Site 3.

Significance

An undated grave on this site was recorded and it is on the direct part of the proposed development. However, reading from their location and the nature of grave goods associated with the burial, it is unlikely that it dates to before 1960s. Nonetheless, the grave is protected under the Human Tissues Act of 1983 and the Municipal Grave Ordinances and a host of other auxiliary measures. From a cultural perspective, it is highly significant and should be treated as ancestral resting-ground where descendants may visit in times of troubles in order to appease the ancestors should the deceased have descendants. As such, the burial ground qualifies as an intangible religious heritage (worship and traditional belief system) site with significance tied to the historic physical grave.

Impact and Recommendation

Development on or in the vicinity of this burial site will interfere with the burial ground. Furthermore, protecting this particular site within the proposed development power plant area is not practical since the site will be seal off to public access once the power plant is in operation. Therefore, we recommend that the burial graves be located to a safe and secure burial ground in line with all applicable regulations.

Burial ground site 4 (BGS4)

Burial Ground Site 4 is located at GPS coordinates S25° 55' 53.7" E028° 44' 39.8". One grave was identified at this site. The burial site is the only one located in the cornfields. The grave is marked by oval shaped stone cairns. The grave is not clearly visible because of the grass cover around the area.

Figure 12: View of a grave identified at burial site 4. Note the burial site is also not clearly visible because of the grass cover.

Significance

An undated grave on this site was recorded and it is on the direct part of the proposed development. This grave is most probably more than 60 years in age. It does seem that it has been in situ for that long and the farming activities around the site suggest that the farmers have avoided disturbing it for a long time. As such, it has high Social and Cultural heritage significance as stipulated by the NHRA, Act 25 of 1999.

Impact and Recommendation

The proposed development will disturb this site. As such, we recommend that a Phase 2 HIA Study be conducted to facilitate for the application for a Burial And Relocation Permit from SAHRA BGU. Such a permit would allow for the grave to be relocated to a secure burial ground where the descendants will continue to have access to. It is not recommend to protect this site in situ given the observation that the project area will be cut off from general and frequent public access once the proposed power plant is developed and in operation.

Burial Ground Site 5 (BGS5)

Burial Ground Site 5 is located at GPS coordinates S25° 55' 50.9" E028° 45' 103.4". One grave was identified at this site. The grave is marked by oval shaped stone cairn.

Figure 13: View of a solitary grave at Burial Site 5.

Significance

This grave is isolated and was not dated. The site is on the direct part of the proposed development. Although the grave is was not immediately dated, it appears to be an old grave most probably more than 60 years old. As such, it is the considered opinion of the author that the burial grave is protected under the Sec. 36 of the NHRA and Human Tissues Act of 1983 as well as the Municipal Grave Ordinances and a host of other auxiliary measures. From a cultural perspective, it is highly significant and should be treated as ancestral resting-ground where descendants may visit in times of troubles in order to appease the ancestors should the deceased have descendants. Furthermore, this burial ground qualifies as an intangible religious heritage (worship and traditional belief system) site with significance tied to the historic physical grave.

Impact and Recommendation

Development on or in the vicinity of this burial site will interfere with the burial ground. Furthermore, protecting this particular site within the proposed development power plant area is not recommended and given the nature of the proposed power plant and associated infrastructure, it will not be practical to leave the site in situ since the site will be seal off from open public access once the power plant is in operation. Therefore, we recommend that the burial graves be located to a safe and secure burial ground in line with all applicable regulations. Such relocation requires Phase 2 HIA study and the associated application for the Relocation burial permit. The relocation will be carried out in consideration of the SAHRA and other applicable regulations.

Burial ground site 6 (BGS6)

Burial Ground Site 6 is located at GPS coordinates S25° 55' 30.1" E028° 44' 56.8". Five graves were identified at this site. The burial site is also not clearly visible because of tall grass around the area. One grave is marked by a head stone inscribed *Johanes Mutsheni 16-05-1958 and 16-09-1957*. Although the site is not very visible we were able to count and verify individual graves at the site.

Figure 14: View of Burial Site 6. The burial ground is mostly covered with tall grass concealing most of the graves. The grave in this picture dates to 1958.

Significance

All five graves on this site have high social contemporary significance dating from the 1950s. The graves are a mixture of burials older than 60 and those that appear to date to the 1970s. As such Section 36 of the NHRA protects the burial site. The burial ground has high socio-cultural significance. This significance is tied to the site being considered an ancestral resting place, a place of ancestral worship or a place where descendants commune with their deceased relatives and ancestors. Furthermore, the graves are protected under the Human Tissues Act of 1983 and the Municipal Grave Ordinances and a host of other auxiliary measures.

Impact and Recommendation

All the graves on this site are in danger of being disturbed once the power plant construction work is approved. Further, it is not recommended to protect the site in situ. The construction and operation of a power plant on this site will also render the burial ground inaccessible. If the site is not accessible, it will loose its socio-cultural significance that is tied to the site being an ancestral worship site with traditional religious significance. We therefore recommend that, should the development be cleared to proceed as planned, a Phase 2 HIA Study be conducted to facilitate the exhumation and relocation of all

the graves from this site to a new secure and accessible burial ground. Such relocation exercise may proceed in accordance with applicable heritage and human tissues Act regulations as well as the municipal public health by-laws that govern the management of exhumation and re-internment of human remains. The option of leaving the graves in situ is not recommended because it will be impossible and impractical to protect this site during the proposed development. Furthermore, the site will be closed from public access once the power plant is in operation. This will mean the descendants of the deceased individuals will not be able to visit the graves.

Burial ground site7 (BGS7)

Burial Ground Site 7 is located at GPS coordinates S25° 55' 18.5" E028° 44' 44.4". One grave was identified at this site. The grave is marked by oval shaped stone cairn.

Figure 15: View of Burial Site 7. Note the tall grass around the burial site.

Significance

This grave s isolated and was not dated. The site is on the direct part of the proposed development and as such in danger of being destroyed or at least being disturbed. Although the grave is was not immediately dated, it appears to be an old grave most probably more than 60 years old and therefore protected under the Sec. 36 of the NHRA and Human Tissues Act of 1983 as well as the Municipal Grave Ordinances and a host of other auxiliary measures. From a cultural perspective, it is highly significant and should be treated as ancestral resting-ground where descendants may visit in times of troubles in order to appease the ancestors should the deceased have descendants.

Impact and Recommendation

The nature of the proposed development does not allow for a burial ground to be safely secured within the proposed power plant site. As such, the affected grave, like all other such site within the area, should

be relocated to a secure and accessible burial ground in nearby area. Furthermore, protecting this particular site within the proposed development power plant area i will not be practical since the site will be seal off from open public access once the power plant is in operation. Therefore, we recommend that the burial graves be located to a safe and secure burial ground in line with all applicable regulations. Such relocation requires Phase 2 HIA study and the associated application for the Relocation burial permit. The relocation will be carried out in consideration of the SAHRA and other applicable regulations.

Burial ground site 8 (BGS8)

Burial Ground Site 8 is located at GPS coordinates S25° 55' 015.0" E028° 44' 26.8". One grave was identified at this site. The grave is marked by oval shaped stone cairn.

Figure 16: View of Burial Site Number 8 with a solitary grave. The grave was not datable.

Significance

This grave is isolated and was not dated and most likely to be disturbed by the proposed development. Although the grave is was not immediately dated, it is the considered opinion of the author that the burial grave may be protected under the NHRA and Human Tissues Act of 1983 as well as the Municipal Grave Ordinances and a host of other auxiliary measures. The site forms part of the local cultural landscape and is highly socio-culturally significant given the observation that African traditional communities consider burial grounds to be ancestral resting-ground where descendants may visit in times of troubles in order to appease the ancestors should the deceased have descendants. Furthermore, this burial ground potentially qualifies as an intangible religious heritage (worship and traditional belief system) site with significance tied to the historic physical grave.

Significance valuation for Burial Grounds, Historic Cemeteries and Individual Graves

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high socio-cultural significance protected by practices, a series of legislations, and ordinances. It is the opinion of this study that all the 31 graves recorded during this study be classified as low to medium social and religious significance. The graves are a mixture of NHRA-protected graves and recent historical graves. However, all the graves form part of a cultural landscape, which draws its significance from the religious, and traditional ancestral belief systems of the descendant of the people buried in these graves. Critical to this socio-religious significance is the need for continued access by the grave custodians to occasionally conduct traditional rituals in honour of the deceased.

6.5. HISTORICAL MONUMENTS

There is no listed monuments are on record in the vicinity of the Sites of Interest for the proposed Bronkhorspruit photovoltaic power plant development.

7. DISCUSSION

The survey did not locate any significant or discernable archaeological or historical sites on Site of Interest for the proposed photovoltaic power plant development. The lack of clearly distinguishable archaeological sites on affected landscape is thought to be a result of three primary interrelated factors:

1. That the project site is situated within a heavily degraded agricultural and quarrying area, and have reduced sensitivity for the presence of high significance physical archaeological cultural site remains, due to previous earth moving disturbances resulting from developments and other land uses in the project area.
2. That the survey focused on sample sections that had high potential to yield possible archaeological sites. Due to the systematic stripping on the ploughed farmland and opencast sand pits sections, it was impractical to cover every inch of the project area. As such, there is the possibility that archaeological sites exist in the project area whereas the sampled sections fell outside sections with potential distinct archaeological sites.
3. Limited ground surface visibility of the sections of the project site that were cultivated at the time of the study may have impended the detection of other physical cultural heritage site remains immediately associated with the Site of Interest.

However, the recorded 8 burial grounds with 31 graves that were recorded highlight the significance of the cultural landscape affected by the proposed power plants. Graves are in themselves an indication that the landscape was previously used for settlements. Furthermore, the project area falls within a general cultural landscape that have potential to yield the following class of physical cultural heritage:

- ***Human Skeletal material*** - The possibility of encountering previously unreocrded human remains during subsurface earth moving works anywhere on the landscape is ever present. It is common that accidental burial finds are made on construction sites from time to time across the country particulalrly on historical cultural landscapes similar to the development project area. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this. 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.
- ***Historic burial grounds and gravesites*** - They come in different forms and sizes, but are easy to identify. Thirty-one such graves were recorded and there is potential to identify more on affected landscape particularly when the proposed development begins.
- ***Historical artefacts or features*** - These are easy to identify and include foundations of buildings or other construction features and items from domestic and historical military activity.

The absence of confirmable and significant archaeological cultural heritage sites on Bronkhorspruit photovoltaic power plant project area is not evidence in itself that archaeological or historical heritage sites did not exist in the project area. As already highlighted above, it may be that, given the previous deep ploughing and developments in most sections of the development site, if such sites existed before, changing earth-moving activities may have destroyed their surficial evidence. Furthermore, some sections were not accessible due to survey sampling process. Furthermore, the significance of the Sites of Interest is not limited to presence or absence of physical archaeological sites. The project area is a notable contemporary cultural landscape, which has discernable links to local oral history and folk stories, environmental and ethnobotanical aesthetics, popular memories etc. associated with significance emanating from intangible heritage of the Gauteng region. This is confirmed by the presence of burial grounds which have historic links to the recent communities that occupied the landscape in the recent historical periods.

8. CULTURAL HERITAGE ASSESSMENT OF SIGNIFICANCE

The appropriate management of cultural heritage resources is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Cultural significance is defined in the Burra Charter as meaning *aesthetic, historic, scientific or social value for past, present or future generations* (Article 1.2). Social, religious, cultural and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of the Site of Interest, associated place or area are resolved.

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time. This assessment of the indigenous cultural heritage significance of the Site of Interest is defined on the basis of the recorded burial grounds.

African indigenous cultural heritage significance is not limited to items, places or landscapes associated with pre-European contact. Indigenous cultural heritage significance is also understood to encompass more than ancient archaeological sites and deposits, broad landscapes and environments. It also refers to sacred places and story sites, as well as historic sites, including mission sites, memorials, and contact sites. This can also refer to modern sites with particular resonance to the indigenous community. The Site of Interest earmarked for the photovoltaic power plant development considered in this project falls within this realm of broad generic significance embodied in the burial grounds scattered across the affected land portion.

8.1. ASSESSMENT CRITERIA

Of relevance to the present study are the following definitions and classifications by SAHRA Guidelines and the Burra Charter definitions of criterion for the assessment of cultural significance:

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

Historic Value

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute

further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national or other cultural sentiment to a majority or minority group. Social value also extend to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

8.2. STATEMENT OF SIGNIFICANCE

No physical cultural archaeological or historical sites of significance, were recorded on the project area. Apart from the 31 graves that were recorded on eight sites, no other sites of significance was accorded on the affected cultural landscape. The area is heavily degraded and is not unique in any sense from a cultural landscape and graded heritage sites or resources perspective. Should the project be cleared to proceed as proposed, it should be noted that the proposed development would alter the aesthetic value of the area, which is already a constantly changing, and developing landscape. No specific claims to historical attachments to the area were recorded. All these factors put together confirms the low cultural significance of the cultural landscape on the project area. As such, no permanent conflicts exists between the cultural landscape and the proposed development. Should the development be cleared to proceed, the most sensible and practical recommendation is to relocate all affected graves to secure and accessible site as already discussed in detail for each site.

9. CONCLUSIONS & RECOMMENDATIONS

The study did not find any permanent barrier to the proposed photovoltaic power plant development. As such, it is recommended to the Provincial heritage authority that the development be cleared to proceed subject to specified recommendations made in the following sections. The following recommendations are based on the results of the A/HIA research, cultural heritage background review, site inspection and assessment of significance.

9.1. MANAGEMENT & POLICY RECOMMENDATIONS

Community Advisory

Thus far, the EIA PPP had not highlighted any problems associated with heritage sites. Should community consultations being held through the project EIA PPP refer to any cultural issues associated with the project area, such matters should be addressed adequately. The proposed Bronkhorspruit power plant development site is associated with historical burial sites and any heritage or cultural aspirations of the descendants of these burial grounds may be affected by the development and they should be

acknowledged. To date, the PPP consultation process has not identified cultural heritage contestation to the project.

Recommendation 1

The Project Public Participation Process should ensure that any cultural heritage related matter that may arise is given due attention whenever it arises and is communicated to the heritage authority throughout the proposed project development. This form of extended community involvement would pre-empty any potential disruptions that may arise from previously unknown cultural heritage mattes that may have escaped the attention of this study.

9.2. INDIGENOUS AFRICAN CULTURAL PLACES

The proposed development is situated in the context of existing commercial farmland areas. There are sections that are covered with cultivated lands as well as some vegetated riverbanks. Such areas retain potential social significance associated with ethno-botany, which makes such area potential sources of traditional herbs and medicines. However, there are no contemporary traditional communities in the project area since it has been under commercial farming for several generations to date.

Recommendation 2

- *Location of development activities should be restricted to minimum footprint impact covered during this survey. As such disruption and vegetation clearance should be minimal. The affected burial grounds may safely be relocated in accordance with the I&APs and the applicable laws. Such relocation will ensure the socio-cultural value of the burial grounds will remain in tact but on a new and secure site.*

9.3. ARCHAEOLOGICAL GRAVES AND BURIAL & CULTURAL HERITAGE SITES

No intact surface archaeological heritage deposits were recorded within the study area. However, the general project area's extensive history of indigenous activity is such that it is possible that remnant or isolated chance archaeological and historical artifacts sites may be present in areas that have minor disturbance.

Recommendation 3

The proposed 150MW Photovoltaic power plant and associated infrastructure should be approved to proceed as planned under strict observation that construction work over does not extend beyond the surveyed project sites. The foot print impact of the proposed development and associated infrastructure should be kept to minimal to limit the possibility of encountering chance archaeological site finds within affected area especially where subsurface construction work is concerned.

Recommendation 4

- *In situations where unpredicted impacts occur (such as accidentally disturbing a previously unknown grave), construction activities should be stopped and the heritage authority notified immediately. In the unlikely event of chance archaeological material or previously unknown human remains being disturbed during subsurface construction, the finds should be left in situ subject to further instruction from the project archaeologist or heritage authorities (refer to Appendixes 1 - 4 for additional details). The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the PHRA and NHRA regulations.*
- *A professional archaeologist should be retained to monitor all significant earth moving activities that may be implemented as part of the proposed photovoltaic power plant infrastructure developments. The monitoring process would ensure that should any archaeological or human remains be disturbed during subsurface construction work at the Sites of Interest, immediate remedial rescue and salvage work would be actioned without delay.*

The recommended heritage monitoring operations will not stop the works but will form part of the proposed project's construction EMP in line with best-practice heritage procedures.

9.4. INTERPRETATION & ACTIVE MANAGEMENT RECOMMENDATIONS

The historic and contemporary communities may have a long and significant connection with project area. However, there are no settlements on the affected farmlands. Like any other generational society, there may have been several other cultural activities that may have taken place within the affected settlement areas associated with the proposed Bronkhorspruit photovoltaic power plant development, none of these were recorded as being in conflict with the proposed development.

Recommendation 7

The possibility of conflict between the community and the proposed development related to culture heritage is unlikely given the observation that there are no contemporary communities on the affected project area. The recorded graves on site may be preserved by relocation. Although some of them may not be directly affected, should the project be approved to proceed as planned, the graves should be moved to a safe and accessible sure burial site such as a formal cemetery. This relocation will ensure that the descendants will access the graves in future, which may be unlikely should they be left in a photovoltaic farm.

Subject to the recommendations herein made, there are no significant cultural heritage resources barriers to the proposed Bronkhorspruit Photovotaic Power Plant and associated infrastructure in the Kungwini Local Municipality of the Gauteng Province. The heritage authority may approve the

proposed development to proceed as planned with special commendations to implement the recommendations here in made. Furthermore:

- *The affected Bronkhorspruit project area for the construction of a 150MW Photovoltaic power plant site should be approved as the most suitable from a heritage perspective.*
- *It is the considered recommendation of this study that, should development be approved, all the recorded 31 graves should be relocated from the affected farmland. The nature of the proposed photovoltaic power plant will make the area inaccessible to the descendants who may want to visit their ancestral graves when the plant is operational. As such all graves should relocated to a secure and accessible burial ground. The relocation exercise may be conducted with the approvals and collaboration of all stakeholders including the affected families, the local authorities, the SAHRA Burial and Graves Unit, the local police, and the relevant health offices.*
- *We recommend that, in the unlikely event of chance archaeological sites being encountered in the subsurface, the management of unavoidable and unanticipated adverse impacts thereon will be achieved through the implementation of mitigation, compensation, surveillance, monitoring and emergency impact management measures. These measures will only be implemented in situations where unavoidable conflicts are identified between archaeological resources and a proposed development.*
- *We recommend that a heritage monitoring plan be put in place as part of the project's Environmental Management Plan (EMP) to ensure that the proposed construction of houses and associated infrastructure will not interfere with chance archaeological sites that may potentially be encountered in the subsurface during the development; especially during foundation construction activities (see Appendix 2).*
- *In situations where unpredicted impacts occur (such as accidentally disturbing a previously unknown graves), construction activities must be stopped and the heritage authority should be notified immediately. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological data. It may be necessary to implement emergency measures to mitigate unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites (also see Appendix 1 & 2).*
- *Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the development site.*

10. CONCLUDING REMARKS

The literature review, field research, the Scoping HIA study and the present subsequent A/HIA Study confirmed that the project area is situated within a contemporary cultural landscape dotted with

commerical agricultural farmlands with long history as evidenced by the grave sites. Field survey was conducted during which it was established that the affected project area is degraded by existing and historic land uses and developments. Although the area is degraded, there is a possibility that the Site of Interest is part of a wider archaeological and historical landscape. This report conclude that the proposed Photovoltaic Power Plant development may be approved by heritage authority to proceed as planned subject to recommendations herein made which include relocating all burial sites to a secure and accessible burial site and a conditional heritage monitoring plan being incorporated into the construction EMP (also see Appendices).

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APPENDIX 1: HUMAN REMAINS AND BURIALS IN DEVELOPMENT CONTEXT

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Developers, land use planners and professional specialist service providers often encounter difficult situations with regards to burial grounds, cemeteries and graves that may be encountered in development contexts. This may be before or during a development project. There are different procedures that need to be followed when a development is considered on an area that will impact upon or destroy existing burial grounds, cemeteries or individual graves. In contexts where human remains are accidentally found during development work such as road construction or building construction, there are different sets of intervention regulations that should be instigated. This brief is an attempt to highlight the relevant regulations with emphasis on procedures to be followed when burial grounds, cemeteries and graves are found in development planning and development work contexts. The applicable regulations operate within the national heritage and local government legislations and ordinances passed in this regard. These guidelines assist you to follow the legal pathway.

1. First, establish the context of the burial:

A. Are the remains less than 60 years old? If so, they may be subject to provisions of the Human Tissue Act, Cemeteries Ordinance(s) and to local, regional, or municipal regulations, which vary from place to place. The finding of such remains must be reported to the police but are not automatically protected by the National Heritage Resources Act (Act 25 of 1999).

B. Is this the grave of a victim of conflict? If so, it is protected by the National Heritage Resources Act (Section 36(3a)). (Relevant extracts from the Act and Regulations are included below).

C. Is it a grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority? If so, it is protected by the National Heritage Resources Act (Section 36(3b)).

D. Are the human or hominid remains older than 100 years? If so, they are protected by the National Heritage Resources Act (Section 35(4), see also definition of ~~–ar~~chaeological" in Section 2).

2. Second, refer to the terms of the National Heritage Resources Act most appropriate to the situation, or to other Acts and Ordinances:

A. Human remains that are NOT protected in terms of the National Heritage Resources Act (i.e. less than 60 years old and not a grave of a victim of conflict or of cultural significance) are subject to provisions of the Human Tissue Act and to local and regional regulations, for example Cemeteries Ordinances applicable in different Provincial and local Authorities.

B). All finds of human remains must be reported to the nearest police station to ascertain whether or not a crime has been committed.

C). If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities given their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

3. In the event that a graveyard is to be moved or developed for another purpose, it is incumbent on the local authority to publish a list of the names of all the persons buried in the graveyard if there are gravestones or simply a notification that graves in the relevant graveyard are to be disturbed. Such a list would have to be compiled from the names on the gravestones or from parish or other records. The published list would call on the relatives of the deceased to react within a certain period to claim the remains for re-interment. If the relatives do not react to the advertisement, the remains may be re-interred at the discretion of the local authority.

A. However, it is the responsibility of the developer to ensure that none of the affected graves within the cemetery are burials of victims of conflict. The applicant is also required in line with the heritage legislation to verify that the graves have no social significance to the local communities.

B. It is illegal in terms of the Human Tissue Act for individuals to keep human remains, even if they have a permit, and even if the material was found on their own land.

4. The Exhumations Ordinance (Ordinance No. 12 of 1980 and as amended) is also relevant. Its purpose is "To prohibit the desecration, destruction and damaging of graves in cemeteries and receptacles containing bodies; to regulate the exhumation, disturbance, removal and re-interment of bodies, and to provide for matters incidental thereto". This ordinance is supplemented and support by local authorities regulations, municipality by-laws and ordinances.

DEFINITIONS AND APPLICABLE REGULATIONS

1). A "Cemetery" is defined as any land, whether public or private, containing one or more graves.

2). A "grave" includes "(a) any place, whether wholly or partly above or below the level of ground and whether public or private, in which a body is permanently interred or intended to be permanently interred, whether in a coffin or other receptacle or not, and (b) any monument, tombstone, cross, inscription, rail, fence, chain, erection or other structure of whatsoever nature forming part of or appurtenant to a grave.

3). No person shall desecrate, destroy or damage any grave in a cemetery, or any coffin or urn without written approval of the Administrator.

4). No person shall exhume, disturb, remove or re-inter anybody in a cemetery, or any coffin or urn without written approval of the Administrator.

5). Application must be made for such approval in writing, together with:

a). A statement of where the body is to be re-interred.

b). Why it is to be exhumed.

c). The methods proposed for exhumation.

d). Written permission from local authorities, nearest available relatives and their religious body owning or managing the cemetery, and where all such permission cannot be obtained, the application must give reasons why not.

6). The Administrator has the power to vary any conditions and to impose additional conditions.

7). Anyone found guilty and convicted is liable for a maximum fine of R200 and maximum prison sentence of six months.

5. Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the National Heritage Resources Agency. They are administered by the Graves of Conflict Division at the SAHRA offices in Johannesburg.

"Victims of Conflict" are:

a). Those who died in this country as a result of any war or conflict but excluding those covered by the Commonwealth War Graves Act, 1992 (Act No. 8 of 1992).

b). Members of the forces of Great Britain and the former British Empire who died in active service before 4 August 1914.

c). Those who, during the Anglo Boer War (1899-1902) were removed from South Africa as prisoners and died outside South Africa, and,

d). Those people, as defined in the regulations, who died in the "liberation struggle" both within and outside South Africa.

6. Any burial that is older than 60 years, which is outside a formal cemetery administered by a local authority, is protected in terms of Section 36(3b) of the National

Heritage Resources Act. No person shall destroy damage, alter, exhume or remove from its original position, remove from its original site or export from the Republic any such grave without a permit from the SAHRA.

There are some important new considerations applicable to B & C (above).

SAHRA may, for various reasons, issue a permit to disturb a burial that is known to be a grave of conflict or older than 65 years, or to use, at a burial ground, equipment for excavation or the detection or the recovery of metals.

(Permit applications must be made on the official form Application for Permit: Burial Grounds and Graves available from SAHRA or provincial heritage resources authorities.) Before doing so, however, SAHRA must be satisfied that the applicant:

a). Has made satisfactory arrangements for the exhumation and re- interment of the contents of such a grave at the cost of the applicant.

b). Has made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such a grave and,

c). Has reached an agreement with these communities and individuals regarding the future of such a grave or burial ground.

PROCEDURE FOR CONSULTATION

The regulations in the schedule describe the procedure of consultation regarding the burial grounds and graves. These apply to anyone who intends to apply for a permit to destroy damage, alter, remove from its original position or otherwise disturb any grave or burial ground older than 60 years that is situated outside a formal cemetery administered by a local authority. The applicant must make a concerted effort to identify the descendants and family members of the persons buried in and/or any other person or community by tradition concerned with such grave or burial ground by:

1). Archival and documentary research regarding the origin of the grave or burial ground;

2). Direct consultation with local community organizations and/or members;

3). The erection for at least 60 days of a notice at the grave or burial ground, displaying in all the official languages of the province concerned, information about the proposals affecting the site, the telephone number and address at which the applicant can be contacted by any interested person and the date by which contact must be made, which must be at least 7 days after the end of the period of erection of the notice; and

4). Advertising in the local press.

The applicant must keep records of the actions undertaken, including the names and contact details of all persons and organizations contacted and their response, and a copy of such records must be submitted to the provincial heritage resources authority with the application.

Unless otherwise agreed by the interested parties, the applicant is responsible for the cost of any remedial action required.

If the consultation fails to research in agreement, the applicant must submit records of the consultation and the comments of all interested parties as part of the application to the provincial heritage resources authority.

In the case of a burial discovered by accident, the regulations state that when a grave is discovered accidentally in the course of development or other activity:

a). SAHRA or the provincial heritage resources authority (or delegated representative) must, in co-operation with the Police, inspect the grave and decide whether it is likely to be older than 60 years or otherwise protected in terms of the Act; and whether any further graves exist in the vicinity.

b). If the grave is likely to be so protected, no activity may be resumed in the immediate vicinity of the grave, without due investigation approved by SAHRA or the provincial heritage resources authority; and

c). SAHRA or the provincial heritage resources authority may at its discretion modify these provisions in order to expedite the satisfactory resolution of the matter.

d. Archaeological material, which includes human and hominid remains that are older than 100 years (see definition in section 2 of the Act), is protected by the National Heritage Resources Act (Section 35(4)), which states that no person may, without a permit issued by the responsible heritage resources authority - destroy, damage, excavate, alter or remove from its original site any archaeological or palaeontological material.

The implications are that anyone who has removed human remains of this description from the original site must have a permit to do so. If they do not have a permit, and if they are convicted of an offence in terms of the National Heritage Resources Act as a result, they must be liable to a maximum fine of R100 000 or five years imprisonment, or both.

TREAT HUMAN REMAINS WITH RESPECT

a). Every attempt should be made to conserve graves in situ. Graves should not be moved unless this is the only means of ensuring their conservation.

b). The removal of any grave or graveyard or the exhumation of any remains should be preceded by an historical and archaeological report and a complete recording of original location, layout, appearance and inscriptions by means of measured drawings and photographs. The report and recording should be placed in a permanent archive.

c). Where the site is to be re-used, it is essential that all human and other remains be properly exhumed and the site left completely clear.

d). Exhumations should be done under the supervision of an archaeologist, who would assist with the identification, classification, recording and preservation of the remains.

e). No buried artifacts should be removed from any protected grave or graveyard without the prior approval of SAHRA. All artifacts should be re-buried with the remains with which they are associated. If this is not possible, proper arrangements should be made for the storage of such relics with the approval of SAHRA.

f). The remains from each grave should be placed in individual caskets or other suitable containers, permanently marked for identification.

g). The site, layout and design of the area for re-interment should take into account the history and culture associated with, and the design of, the original grave or graveyard.

h). Re-burials in mass graves and the use of common vaults are not recommended.

i). Remains from each grave should be re-buried individually and marked with the original grave markers and surrounds.

j). Grouping of graves, e.g. in families, should be retained in the new layout.

k). Material from the original grave or graveyard such as chains, kerbstones, railing and should be re-used at the new site wherever possible.

l). A plaque recording the origin of the graves should be erected at the site of re-burial.

m). Individuals or groups related to the deceased who claim the return of human remains in museums and other institutions should be assisted to obtain documentary proof of their ancestral linkages.

APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE BRONKHORSPRUIT PHOTVOLTAIC POWER PLANT PROJECT EMP

Objective	• Protection of archaeological sites and land considered to be of cultural value; • Protection of known physical cultural property sites against vandalism, destruction and theft; and • The preservation and appropriate management of new archaeological finds should these be discovered during construction.							
No.	**Activity**	**Mitigation Measures**	**Duration**	**Frequency**	**Responsibility**	**Accountable**	**Contacted**	**Informed**
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas**.**	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed form site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						
Operational Phase								
		Same as construction phase.						

APPENDIX 3: HERITAGE MITIGATION MEASURE TABLE

SITE REF	HERITAGE ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	PENALTY	METHOD STATEMENT REQUIRED
Chance Archaeological and Burial Sites	General area where the proposed project is situated is a historic landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work, which may disturb previously unidentified chance finds.	Possible damage to previously unidentified archaeological and burial sites during construction phase. • Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites. • Loss of historic cultural landscape; • Destruction of burial sites and associated graves • Loss of aesthetic value due to construction work • Loss of sense of place Loss of intangible heritage value due to change in land use	In situations where unpredicted impacts occur construction activities must be stopped and the heritage authority should be notified immediately. Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate. • Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access thereto by the construction team must be denied. • Accidentally discovered burials in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. The heritage officer responsible should secure relevant heritage and health authorities permits for possible relocation of affected graves accidentally encountered during construction work.	• Contractor / • Project Manager • Archaeologist • Project EO	Fine and or imprisonment under the PHRA Act & NHRA	Monitoring measures should be issued as instruction within the project EMP. PM/EO/Archaeologists Monitor construction work on sites where such development projects commences within the farm.

APPENDIX 4: LEGAL BACK GROUND AND PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans;

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed—

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must—

(a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must—

(a) take account of all relevant cultural values and indigenous knowledge systems;

(b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;

(c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;

(d) contribute to social and economic development;

(e) safeguard the options of present and future generations; and

(f) be fully researched, documented and recorded.

Burial grounds and graves

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) *(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.

(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.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)*(b)* unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) *(a)* SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or *agents provocateur* and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the *Gazette*.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.