

# Archaeological Impact Assessment

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For the proposed Hibernia Solar Project near the town of Lichtenburg in the North West  
Province of South Africa

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Prepared For  
**Savannah Environmental (Pty) Ltd**  
By



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**VERSION 1.0**

**14 October 2013**

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I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



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## EXECUTIVE SUMMARY

**Site name and location:** Megawatt One Photovoltaic (Pty) Ltd proposes to develop a new solar photovoltaic power plant known as the Hibernia solar facility on the farm Hibernia 52 portion 31 and portion 9. The site is located to the west of the town of Lichtenburg in the North West Province of South Africa.

**Purpose of the study:** Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the areas demarcated for the solar development.

**1:50 000 Topographic Map:** 2626 AA

**EIA Consultant:** Savannah Environmental (Pty) Ltd

**Developer:** Megawatt One Photovoltaic (Pty) Ltd

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

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**Date of Report:** 14 October 2013

### Findings of the Assessment:

The impacts to heritage resources by the proposed development are considered to be low. The only archaeological remains consist of a MSA "occurrence" (Site 1) located on the northern periphery of Alternative 1. This occurrence is of low significance as there is no archaeological stratigraphy present as sand cover is 3 -5 cm thick with calcrete being exposed by sheet erosion underlying the thin sand layer and no further mitigation is needed for this aspect. Apart from the Stone Age component an informal cemetery (Site 2) was documented outside of the proposed alternatives and no direct impact is foreseen on the site. However some recommendations are made to protect the site from accidental damage during the construction phase of the project and is discussed in section 7 of this report.

No buildings exist in the development footprint and no cultural landscape elements were noted. Visual impacts to scenic routes and sense of place are slightly higher due to the projects close proximity to the road but if alternative 1 is chosen (alternative 1 is currently the preferred option) the PV plant will be screened by a line of trees from the road and is assessed not to be high. No further mitigation is recommended for this aspect.

From an archaeological point of view both alternatives are suitable although Alternative 1 is preferred as the PV plant will be screened from the road.

An independent Palaeontological desktop study (Dr Almond 2013) was conducted for the project area and recommended exemption from further palaeontological work or mitigation.

### General

Due to extensive sand cover, ground visibility was low on portions of the site during survey. The possible occurrence of unmarked or informal graves and subsurface finds can thus not be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

**Disclaimer:** *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked*

*during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report;
- Recommendations delivered to the Client.

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## Annexure A: Paleontological Study by Dr John Almond

## ABBREVIATIONS

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

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

## GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

## 1 BACKGROUND INFORMATION

<b><i>Kind of study</i></b>	Archaeological Impact Assessment
<b><i>Type of development</i></b>	Photovoltaic solar energy facilities
<b><i>Rezoning/subdivision of land</i></b>	Rezoning
<b><i>Developer:</i></b>	Megawatt One Photovoltaic (Pty) Ltd
<b><i>Consultant:</i></b>	Savannah Environmental

Heritage Contracts and Archaeological Consulting CC has been contracted by Savannah Environmental (Pty) Ltd to conduct an Archaeological Impact Assessment for the proposed commercial photovoltaic solar energy facility as well as associated infrastructure on portion 31 and portion 9 of the farm Hibernia 52 close to Lichtenburg, North West Province.

The preferred project site is located approximately 15km west of Lichtenburg, North West Province, South Africa on privately owned agricultural land. The site is adjacent to the Hibernia Rural Substation and is almost entirely flat, ideal for a PV power facility.

The Archaeological Impact Assessment report forms part of the Basic Assessment (BA) for the proposed project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a background study that includes collection from various sources and consultations; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey no sites of heritage significance were identified within the development footprint although a Stone Age occurrence was documented together with an informal cemetery. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA for review.



## 1.1 Terms of Reference

### Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

### Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

## 1.2. Archaeological Legislation and Best Practice

Phase 1 of an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 38(1), Section 38(8) of the NEMA and the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare.

Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

### **1.3 Description of Study Area**

#### **1.3.1 Location Data**

The preferred project site is located approximately 15km west of Lichtenburg, North West Province, South Africa on portion 31 and portion 9 of the farm Hibernia 52 IP consisting of privately owned agricultural land. The site is adjacent to the Hibernia Rural Substation and is almost entirely flat, ideal for a PV power facility.

Two site alternatives are under consideration. The first and preferred alternative (option 1) is located north of the line of trees on portion 31, the second alternative (option 2) is located south of the tree line west of the Hibernia Substation.

The study area falls within a Grassland Bioregion as described by Mucina *et al* (2006) with the vegetation described as Carltonville dolomite Grassland. Land use in the general area is characterized by agriculture, dominated by crops and cattle farming. The study area is characterised by very shallow soils with calcrete protruding through the sand cover.

### 1.3.2. Location Map

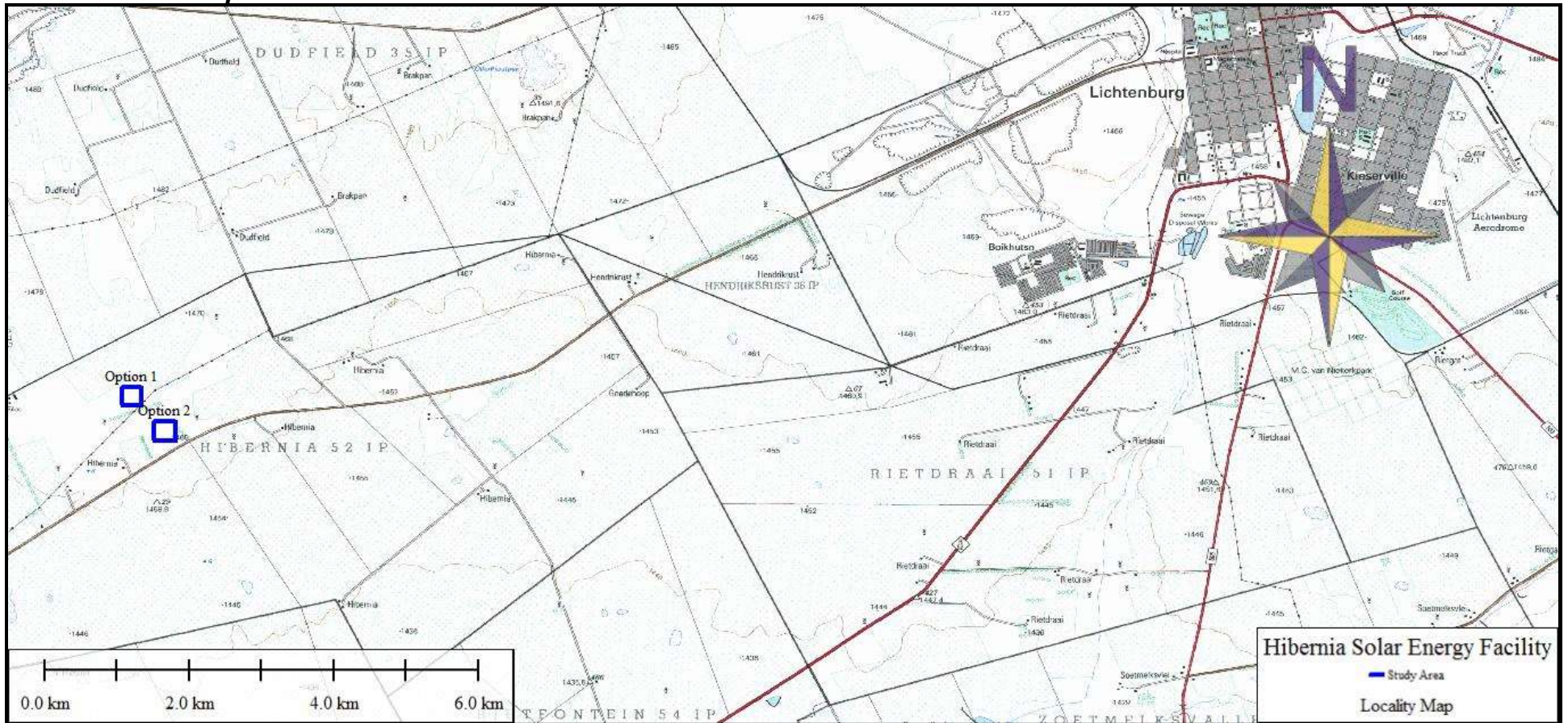


Figure 1: Location map indicating the alternative options that were surveyed.



### 1.3.3. Google Maps



Figure 2: Google Image showing the two alternatives (blue-option 1 and green-option 2), power line connection (green) and track log (black) of the areas that were covered during the survey.

## **2. APPROACH AND METHODOLOGY**

The aim of the study is to cover archaeological databases and historical sources to compile a background history of the study area followed by field verification; this was accomplished by means of the following phases (the results are represented in section 4 of this report).

### **2.1 Phase 1 - Desktop Study**

The first phase comprised a desktop study, gathering data to compile a background history of the area in question. It included scanning existing records for archaeological and historical sites in the area.

#### **2.1.1 Literature Search**

Utilising data for information gathering stored in the archaeological database at Wits, previous CRM reports done in the area and a search in the National archives. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

#### **2.1.2 Information Collection**

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

#### **2.1.3 Consultation**

Heritage Contracts and Archaeological Consulting CC conducted brief consultations with the farm owner Mr Theunis van Schalkwyk.

#### **2.1.4 Google Earth and Mapping Survey**

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

#### **2.1.5 Genealogical Society of South Africa**

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

### **2.2 Phase 2 - Physical Surveying**

A field survey of the study area of the two alternatives measuring approximately 12 ha was conducted; focusing on drainage lines, hills and outcrops, high lying areas and disturbances in the topography. The study area was surveyed by means of vehicle and extensive surveys on foot by a professional archaeologist on 9 October 2013.

All sites discovered inside the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. Digital photographs were taken at all the sites.

### **2.3. Restrictions**

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Only the surface infrastructure footprint areas were surveyed as indicated in the location map, and not the entire farm. Although Heritage Contracts and Archaeological Consulting CC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

### 3 NATURE OF THE DEVELOPMENT

The Hibernia solar energy facility will have a development footprint of less than 10 hectares, within which the following typical infrastructure will be established:

- » Arrays of photovoltaic (PV) panels with a capacity of up to 5MW.
- » Mounting structure to be either rammed steel piles or piles with pre-manufactured concrete footing to support the PV panels.
- » Cabling between the project components, to be laid underground.
- » Inverters/Transformer enclosures.
- » An on-site 11 kV switching station
- » An 11 kV overhead power line of up to ~ 1000m in length to connect into Eskom's existing Hibernia Rural Substation (which is located on Portion 9 of the Farm Hibernia 52).
- » Internal access roads; fencing and workshop area for maintenance, storage and an on-site office.

### 4. REGIONAL OVERVIEW

#### 4.1 General Information

Through CRM reports on the area together with secondary source material, primary sources, maps and online sources the study area is contextualised. At least 4 CRM projects were conducted within a 10km radius of the study area (SAHRIS & SAHRA report mapping version 1 (van Schalkwyk 1995 & 2008, Hutten 2012 and Van der Walt 2013) currently several more studies are conducted as part of mineral right applications but these studies are not in the public domain at the time of this report. None of the sites recorded by van Schalkwyk are in close proximity to the current study area but consisted of mining infrastructure and cemeteries. Hutten did not record any sites and van der Walt recorded low densities of scattered (and possibly mixed) MSA and LSA artefacts.

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. No buildings or structures are located within the proposed two alternatives. The database of the Genealogical Society of South Africa indicated no known grave sites within the study area.

#### 4.2 Archaeological Background

The archaeological background and timeframe of the study area can be divided into the Stone Age and Iron Age.

##### 4.2.1. Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

**Early Stone Age:** The period from  $\pm 2.5$  million yrs. -  $\pm 250\ 000$  yrs. ago. Acheulean stone tools are dominant. No Acheulean sites are on record near the project area, but isolated finds may be possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site. The lack of any ESA sites was confirmed during the field investigation.

**Middle Stone Age:** The Middle Stone Age includes various lithic industries in SA dating from  $\pm 250\ 000$  yrs. -  $25\ 000$  yrs. before present. This period is first associated with archaic Homo sapiens and later Homo sapiens sapiens. Material culture includes stone tools with prepared platforms and stone tools attached to handles. MSA occurrences were documented during the survey but do not have conservation value and are discussed further in Section 7 of this report.

**Late Stone Age:** The period from  $\pm 25\,000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens sapiens*. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art. Sites in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters.

Since there are no caves in the study area no LSA sites of significance were recorded and no isolated finds or occurrences were recorded. An Important LSA site is located to the West of Lichtenburg at Thaba Sione and was later used by Tswana people as a rainmaking site with several engraved boulders (Ouzman 1995).

#### **4.2.2. Iron Age (general)**

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living.

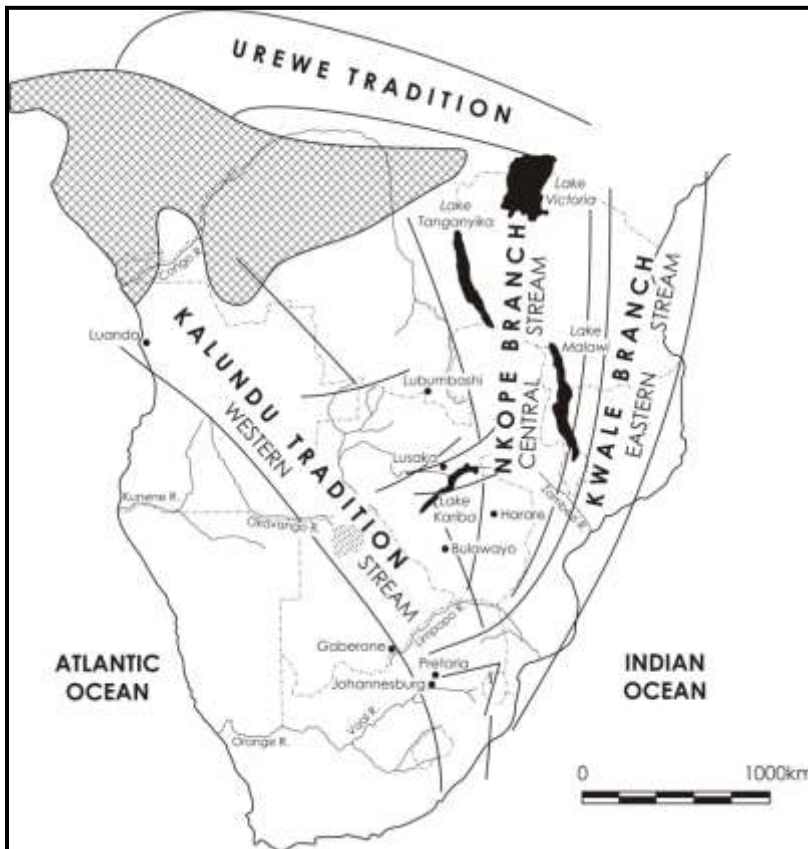


Figure 3: Movement of Bantu speaking farmers (Huffman 2007)

No Sites dating to the Early or Middle Iron Age have been recorded or is expected for the study area. The same goes for the Later Iron Age period where the study area is situated outside the southern periphery of distribution of Late Iron Age settlements in the North West Province. However to the north of the study area towards Zeerust and to the north-west towards Mafikeng, the area is well known for Later Iron Age

stone walled settlements archaeologically referred to as Molokwane settlements (Pistorius 1992, Booyens 1998, Huffman 2007). No sites dating to this period was recorded in the study area.

### 4.3 Palaeontology

A paleontological study was conducted by Dr John Almond (2013). His report is included as Annexure A.

He concluded as follows:

*"The study area of the proposed Hibernia Solar Project near Lichtenburg, North West Province, is underlain at depth by marine carbonate rocks of the Malmani Subgroup (Oaktree Formation) that are of Precambrian age and may contain fossil stromatolites (microbial mounds) and organic-walled microfossils. However, these bedrocks are unlikely to be directly impacted by the solar energy development since they are mantled by a thick blanket - probably several meters or more- of calcrete ("surface limestone") of low palaeontological sensitivity.*

*The impact significance of the solar project development on local fossil heritage resources is considered to be LOW.*

***It is therefore recommended that, pending the discovery of substantial new fossil remains during construction, exemption from further specialist palaeontological studies is granted for the proposed Hibernia Solar Project.***

*Any substantial fossil remains (e.g. stromatolites, fossil shells, petrified wood or plant remains, vertebrate bones, teeth) encountered during excavation should be reported to SAHRA"*

## 5. HISTORICAL BACKGROUND

The following section will endeavour to give a brief overview of the history of the area and district in which it is located. The report has been divided into several sections that will focus on the following aspects:

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

### 5.1. Historiography And Methodology

It was necessary to use a range of sources in order to give an accurate account of the history of the area in which the study area is located. Sources include secondary source material, maps, electronic sources and archival documents. This study is by no means all-inclusive, and there are doubtlessly still sources to be found on the history of the property and area researched in this study. Owing to the constraints in time and resources, this study should be viewed as an introduction to the history of the Lichtenburg area and the specific farm under investigation.

The following sources may be of interest if a further study of the area is pursued:

- Du Preez, G. 1960. *Stigter van Lichtenburg, Kommandant H.A. Greeff*. Lichtenburg: Die outeur.
- Breutz, P. L. 1957. *Die Stamme van die distrikte Lichtenburg en Delareyville*. Pretoria: Government Printer.
- Anon. 1973. *Weerlig in die weste: 'n geskiedenis van Lichtenburg*. Johannesburg: Perskor.



## 5.2. Maps Of The Area Under Investigation

Since the mid 1800's up until the present, South Africa has been divided and re-divided into various different districts. In 1977 South Africa was divided into various smaller Magisterial Districts, and Lichtenburg fell under the jurisdiction of the Lichtenburg Magisterial District. This was still the case by 1994. (Geskiedenisatlas van Suid-Afrika 1999: 17, 20-27)

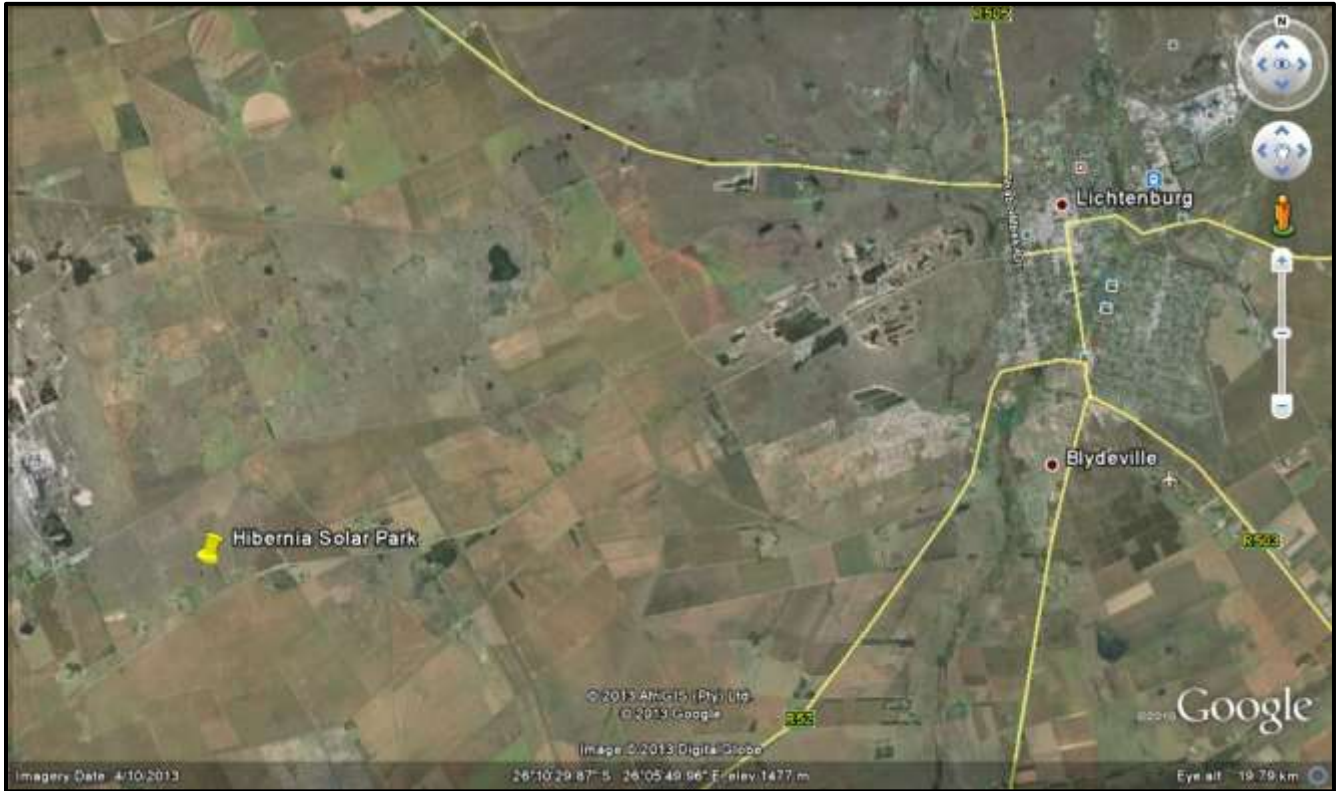


Figure 4: Google Earth image showing the project area in relation to Lichtenburg (Google Earth 2013)

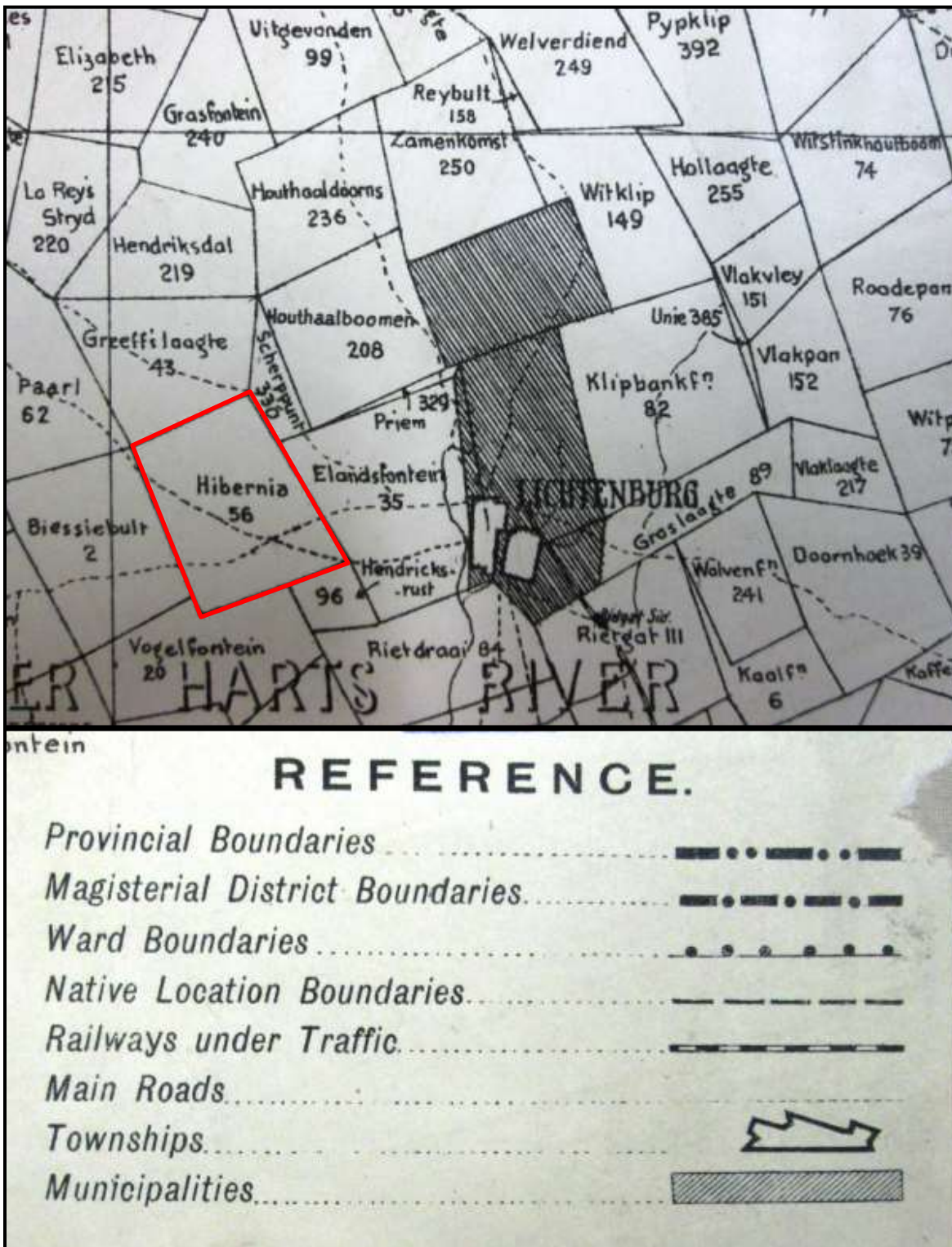


Figure 5: 1916 Map of the Lichtenburg District, showing the location of the farm Hibernia, to West of Lichtenburg. No developments are indicated apart from two roads traversing the property. (NASA Maps: 3/23)

### 5.3. A Brief History Of Human Settlement And Black And White Interaction In The Farm Area

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional history. According to this source no signs of major Stone Age or Iron Age terrains are present in the vicinity of the farm area. (Geskiiedenisatlas van Suid-Afrika 1999: 4-5, 7)

At the beginning of the 19<sup>th</sup> century the Rolong was the prominent tribe in the area where Lichtenburg is located today. This tribe would however be displaced during the Difaqane. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. (Geskiiedenisatlas van Suid-Afrika 1999: 10, 14; 116-119)

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's. In 1821 the traveller Coenraad De Buys travelled close by Lichtenburg from the southern provinces in the direction of Lotsane, a black village. De Buys had apparently clashed with the authorities on the eastern border, and thereafter migrated across the Orange River with his black wives and colourer children. (Geskiiedenisatlas van Suid-Afrika 1999: 12, 118)

It was however only by the late 1820's that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances under British rule in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39)

As can be expected, the movement of whites into the northern provinces would have a significant impact on the black people who populated the land. This was also the case in the North West Province, where Hibernia 52 IP is located. Farms were surveyed in a large area, which included the present-day Rustenburg district, between 1839 and 1840. (Geskiiedenisatlas van Suid-Afrika 1999: 15) By 1860, the population of whites in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed. (Geskiiedenisatlas van Suid-Afrika 1999: 170)

The Anglo-Boer War, which took place between 1899 and 1902 in South Africa, was one of the most turbulent times in South Africa's history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims. (Du Preez 1977)

A battalion of British troops led by Lieutenant General A. Hunter marched through Lichtenburg on 3 June 1900, whereas the Boer war-hero General Jacobus Herculaa de la Rey (more commonly known as Koos de la Rey) arrived in Lichtenburg on 10 October 1900. It is possible that De la Rey's troops moved through the farm area, or very close by. (Geskiiedenisatlas van Suid-Afrika 1999: 51)

One of the Anglo-Boer War battles took place a short distance to the north of Lichtenburg. General De la Rey's Boer troops attacked the British battalion of General Money on 3 March 1901. (Geskiiedenisatlas van Suid-Afrika 1999: 54)

## 6. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed PV Solar Facility the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

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

## 6.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and approved by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

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

## 6.2 Impact Rating of Assessment

The criteria below are used to establish the impact rating of a site as provided by the client:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- » The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - \* medium-term (5-15 years), assigned a score of 3;
  - \* long term (> 15 years), assigned a score of 4; or
  - \* permanent, assigned a score of 5;
- » The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- » The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- » the **status**, which will be described as either positive, negative or neutral.
- » the degree to which the impact can be reversed.
- » the degree to which the impact may cause irreplaceable loss of resources.
- » the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S = (E + D + M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- » < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).



## 7. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the footprint of the proposed alternatives for the PV layout area, power line for connection to the grid and access routes as indicated in Figure 1. No heritage sites are located within the proposed alternatives (figure 6) although a MSA occurrence (**Site 1**) was recorded on the Northern periphery of alternative 1 and an informal cemetery (**Site 2**) located to the west of the proposed alternatives. The site consists of a featureless flat plain with low grass cover (Figure 7 -10, 12 - 14. Soil cover is shallow with calcrete protruding through the thin soil layer (Figure 11).

### 7.1 Site Distribution Map

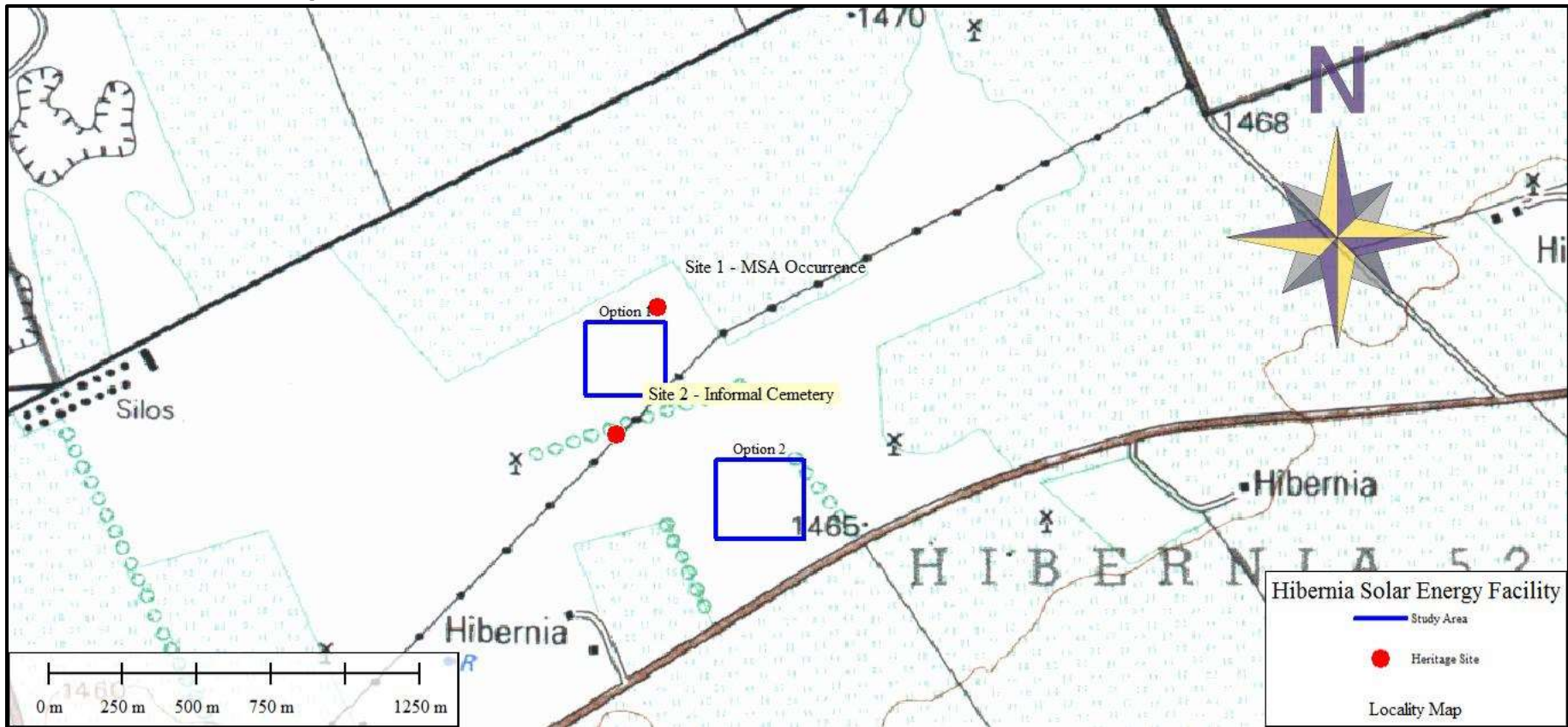


Figure 6: Showing the location of the identified sites in relation to the proposed PV panel options.





Figure 7. Northern view in alternative 1.



Figure 8. Eastern view of alternative 1.



Figure 9. Southern view of alternative 1.



Figure 10. Western view of alternative 1.



Figure 11. Shallow soils with protruding calcrete.



Figure 12. Alternative 2 viewed from the South.



Figure 13. Substation that power will feed into.





Figure 14. Alternative 2 viewed from the North.

## 7.2. Sites with Coordinates

Site Number	Landscape	Type Site	Cultural Markers	Co ordinate
Site 1	Archaeological	Stone Age	Chunks and a pointed flake	S26 11 41.9 E26 01 14.8
Site 2	Archaeological	Informal Cemetery	Graves with stone dressings	S26 11 55.7 E26 01 10.3

### 7.3. Site Descriptions

#### 7.3.1. Low density MSA occurrence (Site 1) - Northern periphery of alternative 1

Site Number	Site 1	1:50 000 map nr	2626 AA
Site Data	Description:		
Type of site	Open scatter		
Site categories	MSA		
Context	Isolated un-retouched flakes (Figure 15) were noted along the north western boundary of alternative 1. A single low density scatter (between 1 - 2 artefacts per 2m <sup>2</sup> ) was recorded as an occurrence located just outside of the northern boundary (Figure 7). Artefacts are scattered over an area of 3 x 5 meters. No archaeological stratigraphy is present as sand cover is 3 -5 cm thick with calcrete being exposed by sheet erosion underlying the thin sand layer (Figure 16).		
Description of artefacts	Artefacts consist of chunks and flakes with a faceted striking platform mainly on chert/CCS.		
Photographs			
			
Figure 15: Ventral view of artefacts at MSA occurrence ( <b>Site 1</b> ).		Figure 16: General site conditions with exposed calcrete.	
Field Rating (Recommended grading or field significance) of the site:	Generally Protected C		
Statement of Significance (Heritage Value)	Low significance.		

## Impact evaluation of the proposed project on heritage resources

### Site 1

<b>Nature:</b> During the construction phase earthworks might impact on the recorded artefacts.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (2)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Low (0)	Low (0)
<b>Probability</b>	Probable (4)	Probable (3)
<b>Significance</b>	<b>28 (Low)</b>	<b>24 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	Yes (However resources are recorded in this report)	Yes
<b>Can impacts be mitigated?</b>	NA	
<b>Mitigation:</b> The MSA occurrence is of low significance and no further action is necessary. (Please refer to section 7 for full details on recommendations).		
<b>Cumulative impacts:</b> Archaeological and cultural sites are non-renewable and impact on any archaeological context or material will be permanent and destructive.		
<b>Residual Impacts:</b> N.A		

**6.3.2. Informal cemetery (Site 2), located outside (West) of the development footprint**

<b>Site Number</b>	Site 2	<b>1:50 000 map nr</b>	2626 AA
<b>Site Data</b>	<b>Description:</b>		
<b>Type of site</b>	Open site		
<b>Site categories</b>	Informal cemetery		
<b>Context</b>	<p><b>Site 5</b> consists of approximately 16 stone packed graves (calcrete). The graves are aligned east to west and are located on the farm fence. Three graves are of children (due to size) and are still used and visited by family members. The site is not located within any of the proposed alternatives and no impact is foreseen on the site.</p>		
<b>Cultural affinities, approximate age and significant features of the site;</b>	<p>It is not possible to determine the age of the cemetery as only one grave has a visible date of death (2013). It is however anticipated that the site can be much older as another grave have the date of birth of Maria Masigo as 1828 but date of death is not visible anymore.</p>		



### Photographs



Figure 17: Site 2 viewed from the south west.



Figure 18: The oldest visible date at Site 5 .



Figure 19: Child grave.



Figure 20: Recent grave (2013).

#### Field Rating

(Recommended grading or field significance) of the site:

Generally Protected A

<b>Statement of Significance (Heritage Value)</b>	High social significance
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### Impact evaluation of the proposed project on heritage resources

<b>Nature:</b> During the operation of the project an indirect visual impact is expected for the site.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (2)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	High (8)	Low (2)
<b>Probability</b>	Not Probable (2)	Not Probable (1)
<b>Significance</b>	<b>30 (Low)</b>	<b>8 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	
<b>Mitigation:</b> The site is located well outside of the development footprint of either alternative and no direct impact is foreseen on the site. However to protect the site from accidental damage it should be fenced off during construction with an access gate for family members. (Please refer to section 7 for full details on recommendations).		
<b>Cumulative impacts:</b> Archaeological and cultural sites are non-renewable and impact on any archaeological context or material will be permanent and destructive.		
<b>Residual Impacts:</b> N.A		



## 8. RECOMMENDATIONS AND CONCLUSIONS

The impacts to heritage resources by the proposed development are considered to be low. The only archaeological remains consist of a MSA "occurrence" (**Site 1**) located on the northern periphery of Alternative 1. This occurrence is of low significance as there is no archaeological stratigraphy present as sand cover is 3 -5 cm thick with calcrete being exposed by sheet erosion underlying the thin sand layer and no further mitigation is needed for this aspect. Apart from the Stone Age component an informal cemetery (**Site 2**) was documented outside of the proposed alternatives and no direct impact is foreseen on the site. However some recommendations are made to protect the site from accidental damage during the construction phase of the project and are discussed below.

Management measures would need to be taken into account to avoid damage to the informal cemetery. Damage can be caused by construction vehicles unknowingly damaging the graves. To prevent this, the area should be demarcated with a fence and all construction activities should be located 15 meters away from the fence around the cemetery.

**OBJECTIVE:** Prevent unnecessary disturbance and/or destruction of archaeological sites or features that has not been mitigated for the development.

Project component/s	All phases of construction.		
Potential impact	Damage/disturbance to grave site.		
Activity risk/source	Construction vehicles working in that area.		
Mitigation: target/objective	To retain grave in undisturbed condition.		
Mitigation: Action/control	Responsibility	Timeframe	
Ensure that workers and construction vehicles remain away from the grave sites.	Hibernia PV Facility Management and ECO	Construction	
Performance indicator	Cemetery remains undamaged.		
Monitoring	No pedestrians or construction vehicles allowed inside the demarcated area.		

No buildings exist on the site and no cultural landscape elements were noted. Visual impacts to scenic routes and sense of place are slightly higher due to the projects close proximity to the road but if alternative 1 is chosen (alternative 1 is currently the preferred option) the PV plant will be screened by a line of trees from the road and are assessed not to be high. No further mitigation is recommended for this aspect.

An independent Palaeontological desktop study (Dr Almond 2013) was conducted for the project area and recommended exemption from further palaeontological work or mitigation.

Due to the subsurface nature of archaeological material and unmarked graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

If the recommendations as made in section 8 of this report are adhered to (subject to approval from SAHRA) there is from an archaeological point of view no reason why the development should not proceed. If any possible finds such as tool scatters, bone or fossil remains are exposed or noticed during construction, the operations must be stopped and a qualified archaeologist must be contacted to assess the find.

## **9. PROJECT TEAM**

Jaco van der Walt, Project Manager and Archaeologist

Liesl Bester, Archival Specialist

## **10. STATEMENT OF COMPETENCY**

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

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

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## **RECOMMENDED EXEMPTION FROM FURTHER PALAEOLOGICAL STUDIES:**

### **PROPOSED HIBERNIA PV SOLAR ENERGY FACILITY NEAR LICHTENBURG, DITSBOTLA LOCAL MUNICIPALITY, NORTH WEST PROVINCE**

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**October 2013**

#### **1. OUTLINE OF PROPOSED DEVELOPMENT**

Megawatt One Photovoltaic (Pty) Ltd, Durban, is proposing to develop a photovoltaic solar energy facility of up to 5 MW generation capacity on Farm Hibernia 52 (Portion 9 and Portion 31), situated some 15 km WSW of the town of Lichtenburg, Ditsobotla Local Municipality, North West Province (Fig. 1).

Two alternative locations for the proposed Hibernia solar energy facility have been proposed on Portion 31 of the Farm Hibernia 52. The first and preferred site is located north of the line of trees on Portion 31 of the Farm Hibernia Farm 52. The second and alternative site is also located on Portion 31 of the Farm Hibernia 52, adjacent to the existing Hibernia Rural Substation.

The Hibernia solar energy facility will have a development footprint of c. 10 hectares and comprise the following main infrastructural components:

- Arrays of photovoltaic (PV) panels with a total combined capacity of up to 5 MW.
- Mounting structure to be either rammed steel piles or piles with pre-manufactured concrete footing to support the PV panels.
- Cabling between the project components, to be laid underground.
- Inverters/Transformer enclosures.
- An on-site 11 kV switching station.
- An 11 kV overhead power line of up to c. 1000 m length to connect into Eskom's existing Hibernia Rural Substation (which is located on Portion 9 of the Farm Hibernia 52).
- Internal access roads.
- Fencing.
- Workshop area for maintenance, storage and an on-site office.

This palaeontological heritage assessment comment was commissioned as a component of a pre-feasibility study for the proposed solar energy facility by Heritage Contracts and Archaeological Consulting CC (HCAC) (Contact details: Mnr Jaco van der Walt. Postnet Suite No. 426, Private Bag X4, Wierda Park, 0149. E-mail: contracts.heritage@gmail.com. Tel: 012 771 3137. Fax: 086 691 6461).



**Figure 1: Google earth© satellite image showing the location of the Hibernia PV solar study area situated c. 15 km WSW of Lichtenburg, North West Province (blue rectangle, arrowed). Note scars due to extensive surface limestone mining just to the northwest (pale area).**

## 2. GEOLOGICAL BACKGROUND

The Hibernia Solar Project study area is situated in very flat terrain at c. 1475 m amsl, c. 15 km WSW of Lichtenburg and 7 km northeast of the R52 between Lichtenburg and Sannieshof. Satellite images show that there is little or no bedrock exposure on site. Pale surface limestones (calcrete) is exposed in series of small, shallow quarries 1.45 km or more to the northwest of the study area (Fig. 1).

The geology of the study area near Lichtenburg is shown on 1: 250 000 geological map 2626 West Rand (Council for Geoscience, Pretoria), for which a sheet explanation has yet to be published (Fig. 2). The study area is underlain by **calcretes** of probable Quaternary age (Qc, pale yellow with blue stipple) that themselves overlie Precambrian marine carbonates of the Oaktree Formation (Malmani Subgroup, Chuniespoort Group, Transvaal Supergroup) (Vo, blue). The extensive blanket of surface calcrete in the region is likely to be thick (several meters or more), as is typical in many areas overlying Transvaal Supergroup carbonate bedrocks.

The underlying Precambrian dolomites and associated marine sedimentary rocks are assigned to the **Oaktree Formation** (Vo), the basal subunit of the **Malmani Subgroup** (**Chuniespoort Group**) within the **Transvaal Supergroup** (Eriksson *et al.* 2006). The c. 2 km-thick Malmani Subgroup succession consists of a series of formations of stromatolitic and oolitic carbonates (limestones and dolomites), cherts and black carbonaceous shales. These marine sediments were laid down in a range of supratidal, intertidal and subtidal settings over a major epicontinental carbonate platform in Late Archaean to Early Proterozoic times, roughly 2.55 to 2.50 Ga (billion years ago). Key references among a very extensive literature on the "Transvaal Dolomites" include papers by Button (1973, 1986), Eriksson *et al.* (1993), Eriksson

*et al.* (1995), Eriksson & Altermann (1998), Catuneanu & Eriksson (1999), Moore *et al.* (2001), Eriksson *et al.* (2006), as well as Sumner & Beukes (2006).

Given the anticipated thickness of the superficial calcrete cover, significant direct impacts on the underlying Malmani dolomite bedrocks are not anticipated during construction of the proposed solar energy facility.

### 3. PALAEOONTOLOGICAL HERITAGE

The **Malmani Subgroup** platform carbonates of the Transvaal Basin host a variety of stromatolites (microbial laminites), ranging from supratidal mats to intertidal columns and large subtidal domes. These biogenic structures are of biostratigraphic as well as palaeoecological interest; for example, the successive Malmani dolomite formations are in part differentiated by their stromatolite biotas (Eriksson *et al.* 2006). There is an extensive literature dealing with the Malmani stromatolites, including articles by Button (1973), Truswell and Eriksson (1972, 1973, 1975), Eriksson and MacGregor (1981), Eriksson and Altermann (1998), Sumner (2000), Schopf (2006), among others. Microbial filaments and unicells have been reported from stromatolites of the Transvaal Supergroup (Eriksson & MacGregor 1981, MacGregor 2002 and refs. therein).

**Calcrete hardpans** may contain trace fossils such as rhizoliths, termite nests and other insect burrows, or even mammalian trackways. Solution hollows within well-developed calcrete horizons may have acted as fossil traps in the past, as seen in Late Caenozoic limestones near the coast and Precambrian carbonate successions of the Southern African interior. Dense concentrations of vertebrate remains (*e.g.* small mammals, reptiles) or terrestrial molluscs, for example, are a possibility here. However, in general these surface limestones are of low palaeontological sensitivity.

The Hibernia Solar Project study area near Lichtenburg is generally of LOW palaeontological sensitivity.

### 4. CONCLUSIONS & RECOMMENDATIONS

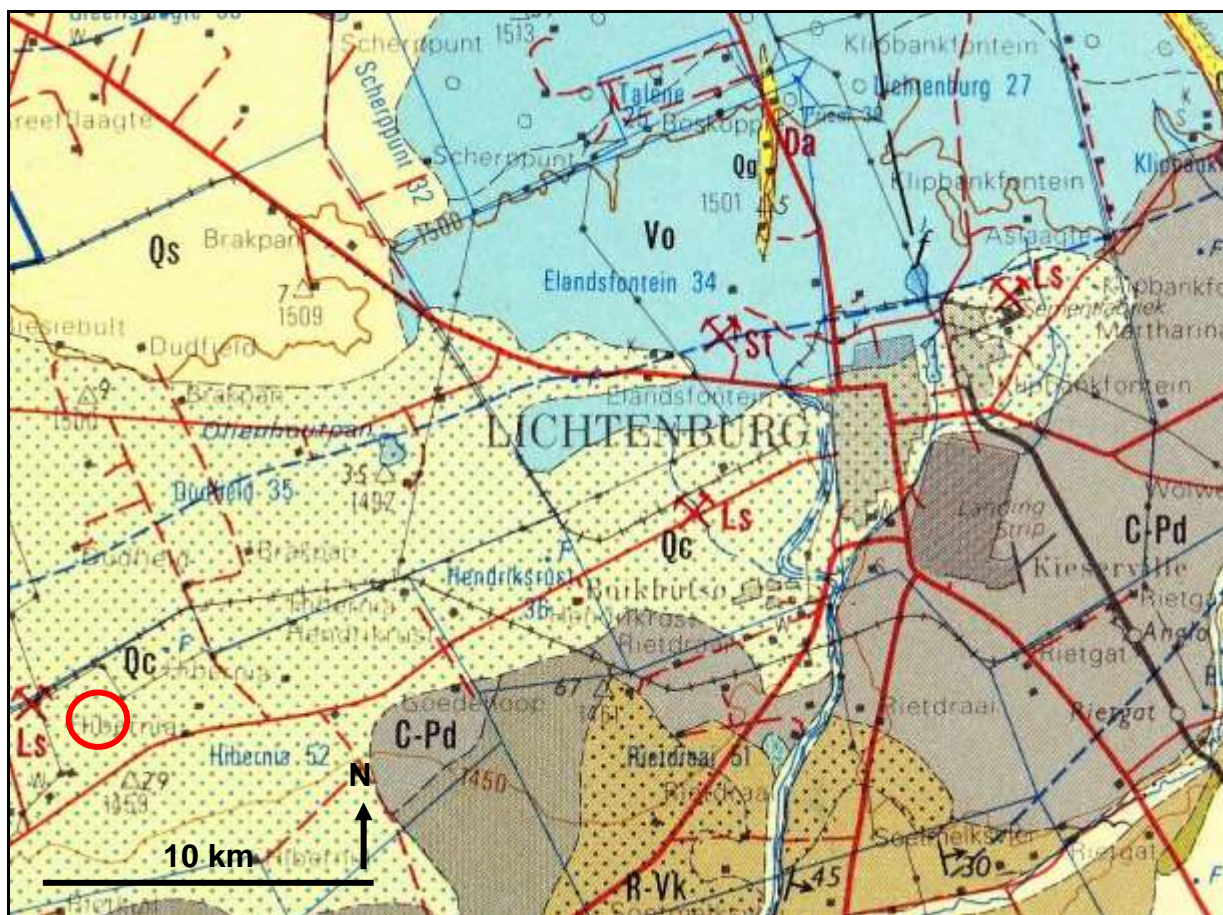
The study area of the proposed Hibernia Solar Project near Lichtenburg, North West Province, is underlain at depth by marine carbonate rocks of the Malmani Subgroup (Oaktree Formation) that are of Precambrian age and may contain fossil stromatolites (microbial mounds) and organic-walled microfossils. However, these bedrocks are unlikely to be directly impacted by the solar energy development since they are mantled by a thick blanket - probably several meters or more- of calcrete ("surface limestone") of low palaeontological sensitivity.

The impact significance of the solar project development on local fossil heritage resources is considered to be LOW.

**It is therefore recommended that, pending the discovery of substantial new fossil remains during construction, exemption from further specialist palaeontological studies is granted for the proposed Hibernia Solar Project.**

Any substantial fossil remains (*e.g.* stromatolites, fossil shells, petrified wood or plant remains, vertebrate bones, teeth) encountered during excavation should be reported to SAHRA (Contact details: Ms. Colette Scheermeyer, South African Heritage Resources Agency, 111 Harrington Street. P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502. Email: cscheermeyer@sahra.org.za. Fax: +27 (0)21 462 4509. Web:www.sahra.org.za) for possible mitigation by a professional palaeontologist at the developers expense.





**Fig. 2. Extract from 1: 250 000 geology map 2626 West Rand (Council for Geoscience, Pretoria) showing the approximate location of the proposed Hibernia Solar Project near Lichtenburg, North West Province (red circle). The study area is underlain by calcretes of probable Quaternary age (Qc, pale yellow with blue stipple) that themselves overlie Precambrian marine carbonates of the Oaktree Formation (Malmani Subgroup, Chuniespoort Group, Transvaal Supergroup) (Vo, blue).**

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## **6. QUALIFICATIONS & EXPERIENCE OF THE AUTHOR**

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape under the aegis of his Cape Town-based company *Natura Viva* cc. He is a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHP (Association of Professional Heritage Practitioners – Western Cape).

### **Declaration of Independence**

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.



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