

Prepared for:

Mr Etienne Roux

Golder Associates Africa (Pty) Ltd

PO Box 6001 Halfway House 1685

Tel 0112544970 Fax 0113150317

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
AFRICARY HOLDINGS (PTY) LTD'S UNDERGROUND COAL
GASIFICATION AND POWER GENERATION PROJECT NEAR
THEUNISSEN IN THE FREE STATE PROVINCE**

Prepared by:

Dr Julius CC Pistorius

Archaeologist and Heritage Consultant

Member ASAPA

352 Rosemary Street Lynnwood 0081

PO Box 1522 Bela Bela 0480

Tel and fax 0147362115

Cell 0825545449

July 2013

EXECUTIVE SUMMARY

This document contains the report on a Phase I Heritage Impact Assessment (HIA) study which was done according to Section 38 of the National Heritage Resources Act (No 25 of 1999) for Africary Holdings (Pty) Ltd's proposed Underground Coal Gasification (UCG) and power generation project near Theunissen in the Free State Province of South Africa.

The aims of the Phase I HIA study were the following:

- To determine if any of the types and ranges of heritage resources (the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the UCG Project Area and, if so, to establish the significance of these heritage resources.
- To establish whether these heritage resources will be affected by the proposed UCG Project and, if so, to propose mitigation measures for those heritage resources that may be affected by the project.

This Phase I HIA study did not record any pre-historical remains in the Project Area and also did not provide for a paleontological study.

The Phase I HIA study for the proposed UCG Project revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Structures with historical significance.
- Graveyards.

These heritage resources were geo-referenced and mapped (Figure 8; Tables 1 & 2). The significance of these heritage resources is indicated as well as the significance of any impact on these heritage resources (Tables 3-5). Mitigation measures are outlined should any of these heritage resources be affected by the proposed UCG Project.

Possible impact on the heritage resources

It is highly unlikely that the historical structures or the graveyards need to be affected by the UCG Project. Nevertheless the significance of the heritage resources is indicated as well as mitigation measures, should any of these resources be affected during the construction, operation or eventual closure of the UCG Project.

The significance of the heritage resources

The historical structures

The historical structures are older than sixty years and therefore qualify as historical remains. All remains older than sixty years are protected by the National Heritage Resources Act (No 25 of 1999).

The significance of the historical remains can be rated according to the criteria outlined in Table 1. The level of significance of the historical structures is indicated as medium to low (Table 3).

The graveyards

All graveyards and graves can be considered to be of high significance and they are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

The significance of possible impact on the heritage resources

The significance of possible impacts on the heritage resources was determined using a ranking scale, based on various criteria.

The historical structures

The complex of historical structures occurs to the north of the proposed stand for the UCG Project's power generator where these remains need not to be affected by the proposed UCG Project.

The significance of any potential impacts on the historical structures therefore is low (Table 4).

The graveyards

GY01 is situated to the west of the proposed stand for the UCG Project's power generator whilst GY02 is situated approximately 20m from the shoulder of the dirt road where the electrical power line may run. The two graveyards therefore need not to be affected by the proposed UCG Project.

The significance of any possible impact on the graveyards therefore is low (Table 5).

Mitigating the heritage resources

The significance of any possible impact on the historical structures or the graveyards is low (Tables 4 & 5).

Notwithstanding, mitigation measures are outlined should any of these heritage resources be affected during the construction, operation or eventual closure of the UCG Project.

Mitigating the historical structures

Historical structures may not be affected by the UCG Project *prior* to their investigation by a historical architect in good standing with the SAHRA. Africary has to acquire a demolition permit from the SAHRA after these structures have been documented by the historical architect before they can be altered (demolished, renovated) as a result of the UCG Project.

Mitigating the graveyards

Graveyards can be mitigated in two ways depending on whether they may be affected, directly or indirectly, namely:

- By means of exhumation and relocation when graveyards are affected directly. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputable undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains has to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.
- Graveyards can be demarcated with brick walls or with fences when they are affected only indirectly, but not in any physical way. Conserving graveyards *in situ* in developed areas creates the risk and responsibility that they may be damaged accidentally, that the developer remains responsible for the graveyards' future unaffected existence and maintenance, and that controlled access must exist for any relatives or friends who wish to visit the deceased.

General: disclaimer

Although due consideration was given to the observing and documenting of all heritage resources in the Project Area, some resources may not have been detected due to various reasons (occurring beneath the surface, unmarked, inconspicuous or eroded nature, covered by vegetation, human failure to recognise, etc.).

If any heritage resources of significance are exposed during the Project the SAHRA should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologists (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from the SAHRA to conduct the mitigation measures.

	Executive Summary	5
1	INTRODUCTION	8
2	TERMS OF REFERENCE	10
3	THE PROJECT AREA	11
3.1	Location	11
3.2	The nature of the Project Area	12
3.3	The nature of the UCG Project	13
4	APPROACH AND METHODOLOGY	15
4.1	Field survey	15
4.2	Databases, literature survey and maps	16
4.3	Spokespersons consulted	16
4.4	Assumptions and limitations	16
4.5	Some remarks on terminology	17
5	CONTEXTUALISING THE PROJECT AREA	21
5.1	The Stone Age	21
5.2	The Iron Age	21
5.3	The Historical Period	22
5.3.1	Kroonstad	23
5.3.2	Welkom	24
5.3.3	Winburg	24
5.3.4	Theunissen	25
5.3.5	Virginia	25
6	THE PHASE I HERITAGE IMPACT ASSESSMENT	26
6.1	The field survey	26
6.2	Types and ranges of heritage resources	28
6.2.1	Historical structures	29
6.2.1.1	Historical House 01	29
6.2.1.2	Outbuildings	31

6.2.2	Graveyards	33
6.2.2.1	Graveyard 01	33
6.2.2.2	Graveyard 02	34
6.3	Tables	35
6.4	Possible impact on the heritage resources	36
6.5	The significance of the heritage resources	36
6.5.1	The historical structures	36
6.5.2	The graveyards	36
6.6	The significance of possible impact on the heritage resources	37
6.6.1	The historical structures	39
6.6.2	The graveyards	39
6.7	Mitigating the heritage resources	40
6.7.1	Mitigating the historical structures	40
6.7.2	Mitigating the graveyards	40
7	CONCLUSION AND RECOMMENDATIONS	42
8	SELECT BIBLIOGRAPHY	46
9	SPOKESPERSONS CONSULTED	48
	APPENDIX A: DETAILS OF THE SPECIALIST	49
	APPENDIX B: DECLARATION OF INDEPENDENCE	50

1 INTRODUCTION

African Carbon Energy (Africary) has expertise in mining and gasification, specifically in Underground Coal Gasification (UCG) and power generation. Africary intends establishing an Underground Coal Gasification (UCG) and power generation project near Theunissen in the Free State Province. This document contains the report on a Phase I Heritage Impact Assessment (HIA) study that was done for Africary's proposed UGS Project near Theunissen in the Free State Province of South Africa.

The Free State Province has a rich heritage, comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Free State Province form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate', as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), occur in the Free State Province (see Box 1, next page).

Box 1: Types and ranges of heritage resources (the national estate) as outlined in Section 3 of the National Heritage Resources Act, 1999 (No 25 of 1999).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

- (a) places, buildings structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds including-
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also 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 the following:

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

2 TERMS OF REFERENCE

Africary intends to establish the proposed UCG Project on the farm Palmietkuil 548 to the north of Theunissen in the Free State Province of South Africa. In order to comply with Section 38 of the National Heritage Resources Act (No 25 of 1999), Africary requires knowledge of the presence, relevance and significance of any heritage resources that may occur in the proposed UCG Project Area.

Africary needs this information in order to take pro-active measures with regard to any heritage resources that may be affected by the proposed UCG Project. Golder Associates Africa (Pty) Ltd, the company who is responsible for compiling the Environmental Management Programme Report (EMPR) for the UCG Project, commissioned the author to undertake a Phase I Heritage Impact Assessment (HIA) study for the UCG Project Area.

The aims of the Phase I HIA study were the following:

- To determine if any of the types and ranges of heritage resources (the 'national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the UCG Project Area and, if so, to establish the significance of these heritage resources.
- To establish whether these heritage resources will be affected by the proposed UCG Project and, if so, to propose mitigation measures for those heritage resources that may be affected by the project.

3 THE PROJECT AREA

3.1 Location

Africary's proposed UCG Project is to be located on the farm Palmietkuil 548 which is located approximately 26km to the north north-east of Theunissen in the Western Free State Province (2826BC Theunissen 1:50 000 topographical map and 2826 Winburg 1: 250 000 map and Google imagery) (Figures 1-3).

The Project Area is characterized by stretches of open, pristine veld with grass and few trees, cultivated fields and gold mining towards the eastern borders of the Project Area.

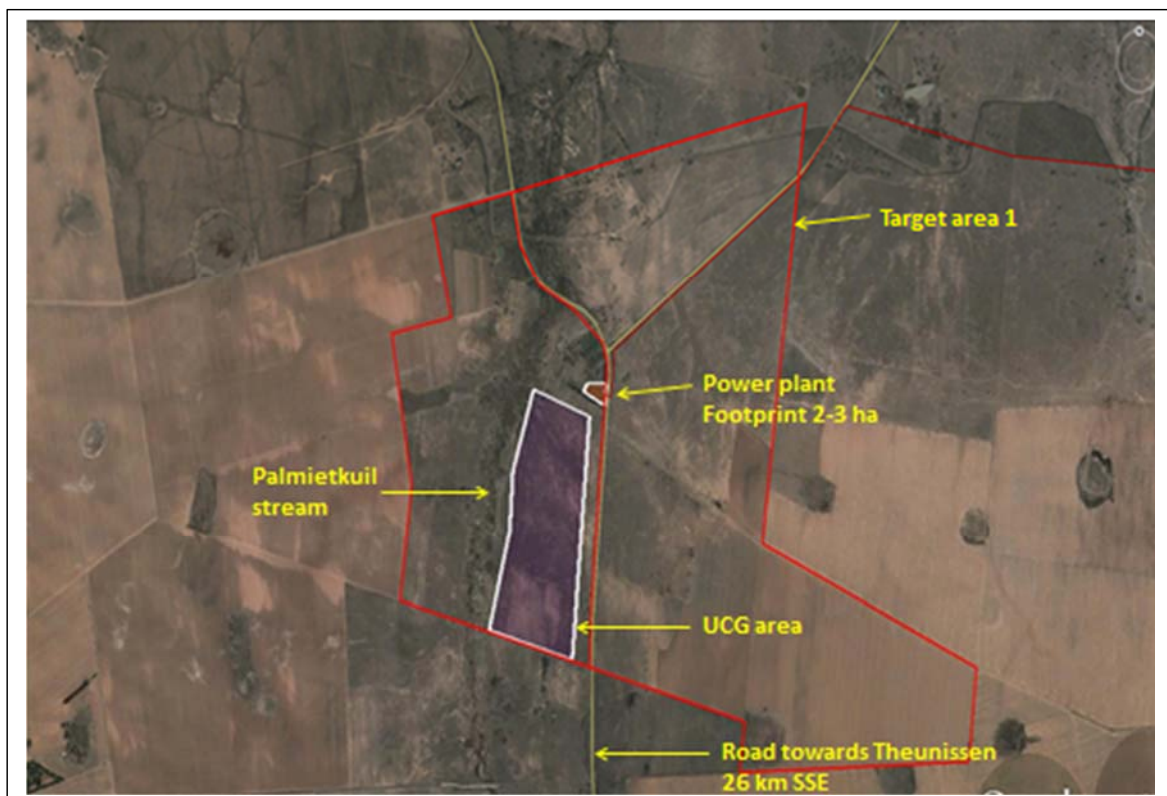


Figure 1- The Project Area near Theunissen in the Free State Province indicates the footprint for a power plant and a proposed corridor for a twenty kilometre power and water pipe line (above).

The Project Area is part of an outstretched, undulating plain which is covered with grass veld and agricultural fields (above).

3.2 The nature of the Project Area

The UCG Project Area is spread out over a level stretch of land that is largely covered with agricultural fields, which are interspersed with smaller pieces of undisturbed grass veldt.

Few trees occur in the UCG Project Area, the majority of which are Blue Gums, which in some instances may be associated with old farm homesteads (and graveyards) as they were planted by the first colonists who settled in the area. Historically, Blue Gum trees also served as shelter for domestic stock, as hedges demarcating farms, as a supply of wood and as protection for farm homesteads and graveyards.

The larger area is characterised by heritage resources which date from the pre-historical into the historical (colonial) period. Stone Age sites, Iron Age sites and colonial remains do occur in this part of the Free State Province. The archaeological and historical significance of this region is briefly outlined in this report (see Part 5, 'Contextualising the Project Area').

The most common heritage resources that occur in the immediate area include:

- Historical farmstead complexes, which are usually associated with main residences and different types of outbuildings.
- Formal and informal graveyards.
- Stone walled settlements where low kopjes and randjes abound.

A number of heritage impact assessment studies have been done near the Project Area (see 'Part 8 Select Bibliography'), namely:

- Pistorius 2004. *A Heritage Impact Assessment (HIA) study for the EMP for the Voorspoed Diamond Mine near Kroonstad in the Free State Province of South Africa*. Unpublished report for De Beers and Metago Environmental Engineers.
- Pistorius 2005. *A Heritage Impact Assessment (HIA) study for the proposed new water pipe line to be established from the Renosterdam to the proposed new Voorspoed Diamond Mine near Kroonstad in the Free State Province of*

South Africa. Unpublished report for De Beers and Metago Environmental Engineers.

- Pistorius 2008. *A Phase I Heritage Impact Assessment study for the proposed re-mining and processing of Tailings Storage Facilities at the operations of Harmony Gold Mining Company Limited (Harmony) in the Welkom area in the Free State Province of South Africa*. Unpublished report prepared for Golder Associates Africa (Pty) Ltd.

3.3 The nature of the UCG Project

Africary has acquired prospecting rights for coal on the farm Palmietkuil 548, which is located 26km north-west of Theunissen in the Free State Province, and proposes to establish a UCG project and a 50 to 60 megawatt (MWe) gas engine-based electrical power plant. The plant (including fuel gas preparation) will occupy a site of about 2 to 3 hectares on the surface of the land.

The proposed UCG process entails that air, which has been enriched with oxygen, will be injected into a deep underground coal seam whilst the coal is ignited. Groundwater, augmented by water added to the air injection borehole if necessary, reacts with the carbon in the coal to form a combustible gas mixture of carbon monoxide (CO) hydrogen (H₂), methane (CH₄) and a small percentage of higher hydrocarbons. The reaction takes place at high temperature, which is created by the burning coal front, and high pressure, which is caused by the build-up of hot gases in the confined area.

The gas production rate, temperature and composition are monitored continuously and the rate of gasification is controlled by the rate at which oxygen is introduced into the coal seam.

The gas mixture will be extracted *via* a borehole, cleaned and used to generate electrical power by means of a number of gas engines. The ash remains underground in the cavity left behind after the coal has been gasified.

The electrical power will be fed into the national grid *via* a ~20km long 132kV transmission line. Process water, sourced from Sedibeng Water, the Sand-Vet Water Users Association or one of the gold mines in the vicinity, will be piped to the site of the power plant. Due to the nature of the UCG process and the depth of the coal resources, 250m to 550m below the surface, no disruption of normal farming activities is expected to occur.

The proposed electrical power line will follow one of four proposed routes, namely Route 01, Route 02, Route 03 or Route 04. However, the proposed route is a combination of Route 02 and Route 01 and follows the dirt road that joins the UCG Project Area in the west with the R30 and the gold mines in the east.

The underground coal gasification and power generation project is referred to as the UCG Project whilst the footprint for this development (site for the power plant and power line corridor) is referred to as the Project Area.

4 APPROACH AND METHODOLOGY

This Phase I HIA study was conducted by means of the following:

4.1 Field survey

The field survey for the proposed UCG Project was conducted by means of a pedestrian survey where the proposed stand for the power plant is located whilst the proposed route for the electrical power line and water pipe line will be located was surveyed with a vehicle. Sensitive spots along this linear stretch of land were surveyed on foot.

The route was recorded with a mounted GPS instrument which outlines the main pathway which was followed with a vehicle. Pedestrian surveys towards target areas such as isolated trees, tall grass or possible building rubble were undertaken from the main pathway (Figure 2). A number of photographs also outline the characteristics of the Project Area (see 'Part 6.1 Fieldwork survey', Figures 3 – 7).



Figure 2- The survey route which was registered with a mounted GPS instrument for the proposed UCG Project near Theunissen in the Free State Province. Pedestrian surveys were conducted from this main pathway (above).

4.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA), the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and SAHRA's national archive (SAHRIS) were consulted to determine whether any heritage resources of significance have been identified during earlier heritage surveys in or near the Project Area.

Literature relating to the pre-historical and the historical unfolding of the Free State Province where the Project Area is located was reviewed (see Part 5, 'Contextualising the Project Area').

In addition, the Project Area was studied by means of maps (2826BC Theunissen 1:50 000 topographical and 2826 Winburg 1: 250 000 maps & Google imagery).

4.3 Spokespersons consulted

Several spokespersons that live and work in the Project Area were consulted during the fieldwork. All these individuals have a thorough knowledge of the area and were consulted for the possible presence any graveyards as these features are sometimes difficult to detect when they have been abandoned or when they have not been decorated and have been left unattended for long periods of time (See 'Part 9, Spokespersons consulted').

4.4 Assumptions and limitations

It is possible that this heritage survey may have missed heritage resources in the Project Area considering the size of the area as well as due to various other reasons (e.g. occurring beneath the surface, unmarked, inconspicuous or eroded nature, covered by vegetation, human failure to recognise, etc.).

If any heritage resources of significance are exposed during the UCG Project, the South African Heritage Resources Authority (SAHRA) must be notified immediately, all development activities must be stopped and an archaeologist accredited with the

Association for Southern African Professional Archaeologists (ASAPA) must be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from the SAHRA to conduct the mitigation measures.

4.5 Some remarks on terminology

Terms that may be used in this report are briefly outlined below:

- **Conservation:** The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.
- **Cultural resource management:** A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- **Cultural resources:** A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- **Heritage resources:** The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage resources (cultural resources) include all man-made

phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the Historical Period.
- Maintenance: Keeping something in good health or repair.
- Pre-historical: Refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled there from the 1840's onwards.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- Recent past: Refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life support systems. Various types of protected areas occur in South Africa.

- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing, by new construction, the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.
- Stone Age: Refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (2.5 million years to 250 000 thousand years ago) the Middle Stone Age (250 000 years to 25 000 years ago) and the Late Stone Age (25 000 years to 2 000 years ago).
- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.
- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to Figure 3).
- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in any given Project Area (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).
- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended

excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involves permitting processes, requires the input of different specialists and the co-operation and approval of the SAHRA.

5 CONTEXTUALISING THE PROJECT AREA

The following brief overview of archaeological (pre-historical) and historical information will help to contextualise the larger project area.

5.1 The Stone Age

Stone Age sites are areas where stone artefacts are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age, the Middle Stone Age and the Late Stone Age. The Early Stone Age (ESA) covers the period from 2.5 million years ago to 250 000 years ago. The Middle Stone Age (MSA) refers to the period from 250 000 years ago to 25 000 years ago; and the Late Stone Age (LSA) is the period from 25 000 years ago to 2 000 years ago.

No heritage surveys have been done in the larger Project Area that have revealed significant numbers of Stone Age sites from any of the different periods identified for the Stone Age above. The fact that there is so little information about Stone Age sites in this area can be attributed partly to a lack of archaeological surveys done in this part of the Free State Province. Stone Age sites are numerous all over South Africa and tend to crop up even where the presence of humans in the past was not remotely expected.

5.2 The Iron Age

The Free State Province was not occupied by the Early Iron Age (EIA) Bantu-Negroid people who lived in the Limpopo, Mpumalanga and KwaZulu-Natal Provinces of South Africa during the third to the ninth centuries AD. The earliest Iron Age settlers who moved into the Orange Free State were Sotho-speaking groups such as the Fokeng, Kwena, Kgatla and Kubung, who entered the region from the north, the south, the east and the west. These Sotho clans settled throughout the larger part of what later became the Free State Province. They built stone walled

settlements that were scattered along the lower slopes of mountains and along the ridges where stone for building material was abundant. In their choice of location, these Sotho settlers also took advantage of the sweet grass veldt and water courses – these Late Iron Age (LIA) farmers lived in relatively large communities and kept growing numbers of large and small livestock. The stone walled sites were characterised by different settlement layouts and other distinctive features and artefacts.

The LIA settlers in the Free State Province were cattle herders and agriculturists and they lived in the region from the 17th century onwards. These people were the predecessors of many of the Sotho-speaking people who still live in the Free State Province today. The Taung were responsible for the construction of some of the V-type settlements; the Kubung built the Z-type settlements. The N-type settlements were built by the Fokeng and Kwena, while the Khoi Khoi, who lived near the Riet River, built R-type sites.

The Kubung, an offshoot from the Rolong in what is now the North-West Province, built Z-type settlements. The stone walled sites that have been identified near Kroonstad constituted mainly Z-type settlements. These types of settlement also occurred along the lower reaches of the Renoster River. Large concentrations of V-type settlements are found along the upper reaches of the Renoster and Vals Rivers, to the east of the Project Area.

Stone walled sites closest to the Project Area occur on Doringberg and Beckersberg within the Willem Pretorius Nature Reserve which is located near the Allemanskraal Dam between Winburg and Ventersburg.

5.3 The Historical Period

The Project Area near Theunissen is part of the Western Free State Province. The vast prairies which cover this part of the Free State are not characterised by any significant topographical features. Several of the northern areas are situated in the heart of the 'maize triangle'. Other crops include sorghum, groundnuts and to a

lesser extent wheat. Cattle and sheep farming are also of importance, the latter especially in the south. The parts towards the west near Bultfontein, Hertzogville and Wesselsbron are dotted with many small pans. The region includes Winburg, the first town established by the Voortrekkers north of the Orange River and the first capital of the Orange Free State Republic.

Towns such as Koffiefontein and Jagersfontein owe their existence to the discovery of diamonds. Theunissen is also located on the edges of the Free State goldfields which are centred towards Welkom and Virginia.

The southern portion of the region from Bloemfontein to the Orange River is for the most part a featureless grassland prairie ideally suited to sheep and cattle ranching.

5.3.1 Kroonstad

The largest, oldest town closest to the Project Area is Kroonstad, which was named after a horse called 'Kroon'. Kroon belonged to either the Voortrekker leader Sarel Cilliers or to Adriaan de la Rey (the father of General Koos de la Rey, the 'Lion of the Western Transvaal'). Kroon drowned in a pothole in a stream in the place where the town was later established. The stream was called Kroonspruit.

Kroonstad came into being in July 1854, when the then Free State Republic ordered Joseph Orpen to establish a new town in the northern parts of the Republic. On 30 April 1855 the first erven were laid out on the banks of the Vals River with its many tributaries (streams or 'spruite'). The town also rapidly developed as an important resting place for travellers, due to its strategic location. The railway line from the Johannesburg goldfields reached the town on 20 February 1892. The town later served as the seat for the Free State government when it had to flee during the Second Anglo Boer War. A large concentration camp for women and children who had been removed from farms in the area was built in Kroonstad. Today, Kroonstad still serves as the main distribution centre for the north-eastern Free State.

5.3.2 Welkom

Welkom received city status in 1968. It is the country's youngest city and the second largest Free State centre.

Welkom was laid out in 1947 on the farm Welkom, 11 km to the south of Odendaalsrus. It was designed by William Backhouse, consultant to Anglo American, as a garden city with a commercial centre build around a square. Traffic lights and stop streets were not planned for the city and more than a million trees were planted.

The town and immediate surroundings are dominated by the headgear and reduction plants of gold- and uranium-mining companies. These mines are very deep and flooding is an ever-present threat. Enormous quantities of water are pumped to the surface where it collects in hollows to form pans – some teeming with bird life.

Welkom's public library houses the gold museum. Memorials include the Aandenk monument, the Joann Pim memorial, the Second World War memorial and monuments to the Voortrekkers, the Afrikaans language and the domestic dog.

5.3.3 Winburg

In 1836 Hendrik Potgieter purchased the land between the Vet and Vaal Rivers, i.e. nearly the entire northern part of the Free State of today, from the Bataung chief for 42 head of cattle. Within a year more than one hundred Voortrekker wagons arrived in the area. The founding of a town and a church was needed but was delayed as a result of one of the usual disputes over an appropriate site, which was resolved in 1841, when the choice fell on the farm Waaifontein. Its owner, Jacobus de Beer named it Wenburg, which later became Winburg.

Winburg served as an outpost of the Voortrekker Republic of Natalia. Its first landdrost was appointed in 1841 by the Volksraad of the Republic in Pietermaritzburg. After the annexation of Natal by the British and the subsequent

collapse of the Republic of Natalia in 1843, Winburg became the administrative centre and 'first capital' of the Voortrekkers in the Free State Province. It received municipal status in 1872.

5.3.4 Theunissen

Theunissen was named for Commandant Helgaard Theunissen, leader of the local commando during the Anglo Boer War. Theunissen and other farmers who lived in the vicinity of the Smaldeel Station on the railway line between Bloemfontein and the Witwatersrand petitioned in 1906 for the establishment of a town. When permission was granted the farms Smaldeel, Statie and a portion of Poortje were bought. The town was proclaimed in August 1907 and became a municipality in 1912.

5.3.5 Virginia

This town is located 19km to the south-east of Welkom and was laid out on the banks of the Sand River in 1954. The name of the town is derived from two American engineers who in 1890 surveyed the railway line north across Merriespruit. Whilst completing this task they chiselled the name 'Virginia' on a boulder on a hill nearby.

When the railway line *via* Kroonstad to Gauteng was built two years later a siding with the same name was established on the spot. The name was retained when the town mushroomed in the 1950's following the discovery of gold. The name Merriespruit was given to a suburb of Virginia. Within three years Virginia became the second largest town on the goldfields and the fourth largest in the Free State.

On 22 Feb 1994 the wall of a Harmony mine slimes dam broke and engulfed part of the Merriespruit suburb. Seventeen people died, 31 houses were destroyed and 72 were seriously damaged. A memorial wall for the victims was built in the local cemetery.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 The field survey

The following photographs outline some of the characteristics of the Project Area.



Figures 3 & 4- The proposed site for the UCG Project power plant comprises a piece of land which is one to two hectares in extent. It is located next to a tar road and has been disturbed by agricultural and other developmental activities in the past (above and below).





Figures 5, 6 & 7- The UCG Project along the proposed power line corridor stretches mainly across abandoned agricultural fields (above), active fields where irrigation agricultural is practised (centre) and stretches of land where pristine bush still occurs (below).

6.2 Types and ranges of heritage resources

The Phase I HIA study for the proposed UCG Project identified the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Structures with historical significance.
- Graveyards.

These heritage resources were geo-referenced and mapped (Figure 8; Tables 1 & 2). The significance of these heritage resources is indicated as well as the significance of any impact on these heritage resources (Tables 3-5). Mitigation measures are outlined should any of these heritage resources be affected by the proposed UCG Project.

No pre-historical remains were recorded in the Project Area nor did this study provide for a paleontological study.

The Phase I HIA study is now briefly discussed and illustrated with photographs.

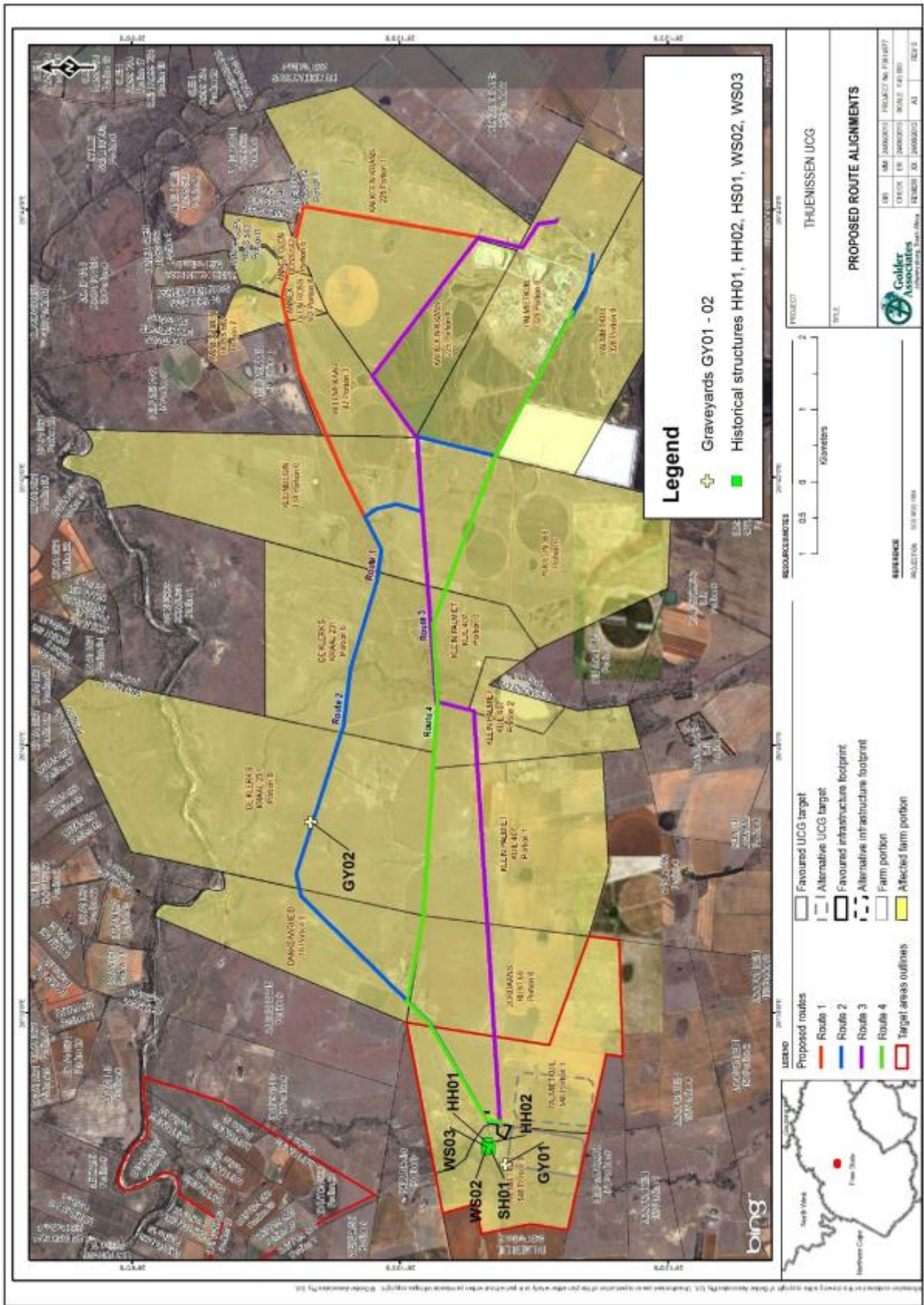


Figure 8- The Project Area on Palmietkuil 548 to the north of Theunissen in the Free State Province. Note the presence of historical structures and graveyards in the Project Area (above).

6.2.1 Historical structures

Several structures, most of which are older than sixty years, were recorded in the Project Area. All these structures occur in a single farmstead complex and comprise the following:

6.2.1.1 Historical House 01

This square residence (HH01) was constructed with sandstone, bricks and cement and is fitted with a pitched corrugated iron roof. Several rooms were added onto the original square core structure of the house.



Figure 9 & 10- Historical House 01 is a square structure which was constructed with sandstone and cement. It is fitted with a pitched corrugated iron roof (above).

6.2.1.2 Outbuildings

Several outbuildings, mostly comprising of sheds, are associated with the main residence (HH01), namely:

- SH01 was possibly milking shed, which was constructed with clay bricks and cement.
- WS02 was probably used as a wagon shed, which was constructed with sandstone and cement.
- WS03 was probably used as a wagon shed, which was constructed with sandstone and cement.



Figures 11 & 12- Three sheds are associated with a main residence (above) and the Jordaan family graveyards. It seems as if SH01 was used as a milking shed (below).



Figures 13, 14 & 15- Two wagon sheds (WS01 and WS02) (above and centre) and an outbuilding (HH02) which is associated with a main residence (below).

Other outbuildings associated with the main residence and the three sheds are the following, namely:

- A small outbuilding in close proximity of the main residence (HHS02) which probably served as a 'buitekamer' (outside room) where teenagers (probably boys) lived when the family home got too small for the household.
- A second small outbuilding in close proximity to the main residence (HHS03), but with an unknown function.

Other infrastructure on the farm is relatively modern and includes a residential house and silos which were constructed with bricks and plastered with cement. Structures which were probably used to pen small stock (such as sheep or pigs) also occur on the 'werf' of the farmstead. These structures date from the more recent past and have no historical value.

6.2.2 Graveyards

At least two graveyards were recorded in the Project Area, namely:

6.2.2.1 Graveyard 01

This graveyard belongs to the Jordaan family and dates from the nineteenth century. It holds approximately five graves for children and three double graves for adults.

Inscriptions on some of the headstones read as follow:

- 'Ter gedachtenis aan Maria Johanna Jordaan Geboren van der Merwe Geboren ten Worcester 28 Aug 1827 Overleden te Jakkalskraal 8 September 1902'
- 'Ter gedachtenis aan ons vader Paul Jordaan Gebore 9 Jun 1871 Overleden 27 Julie 1921'
- 'Johannes Petrus Jordaan G 10-11-1885 O 12-12-1974 Die mens wik maar God beskik'

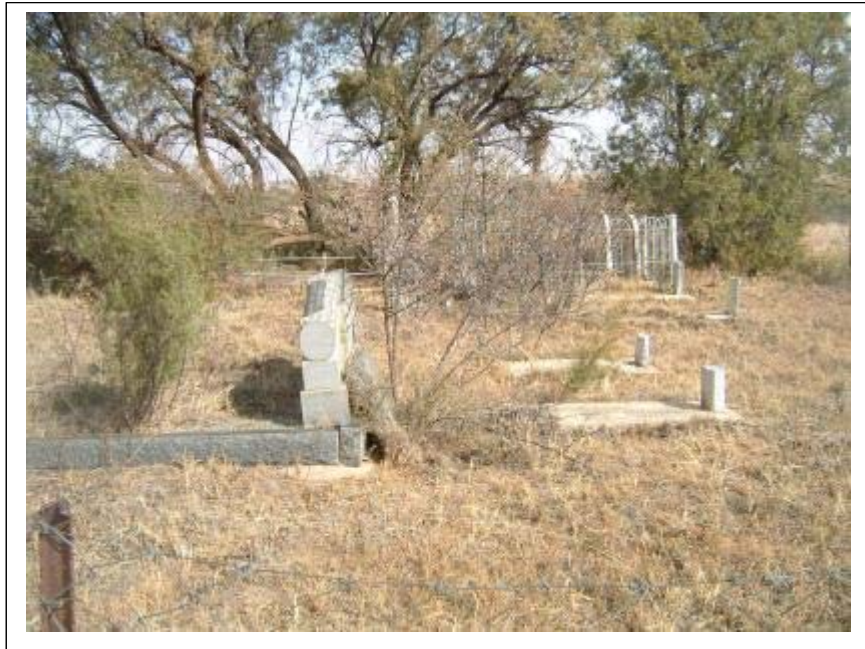


Figure 16 - GY01 represents the family graveyard of the Jordaan clan and dates from the nineteenth century (above). This graveyard is associated with a farmstead complex which incorporates a main residence and outbuildings such as sheds.

6.2.2.2 Graveyard 02

This informal graveyard is situated next to a dirt road. It holds approximately ten graves all of which are covered with piles of stone.

No headstones with inscriptions occur at GY02.

This graveyard is probably older than sixty years.



Figure 17- GY02 holds approximately ten graves all of which are covered with piles of stone (above).

6.3 Tables

The coordinates and levels of significance for the heritage resources which were recorded in the Project Area are as follow:

Historical structures	Coordinates	Significance
HH01 Main Residence	28° 10.647'S 26° 37.032'Ee	Med-low
HH02 1 st outbuilding	28° 10.652'S 26° 37.028'Ee	Med-low
HH03 2 nd outbuildings		
SH01 Possible milk shed	28° 10.672'S 26° 36.983'E	Med-low
WS02 Wagon shed	28° 10.640'S 26° 36.986'E	Med-low
WS03 Wagon shed	28° 10.652'S 26° 36.996'Ee	Med-low
Other (recent) buildings	Not geo-referenced	Low

Table 1- The level of significance for the historical structures (above).

Graveyards	Coordinates	Significance
GY01. Jordaan graveyard	28° 10.783'S 26° 36.874'Ee	HIGH
GY02. Informal graveyard	28° 09.329'S 26° 39.428'Ee	HIGH

Table 2- Coordinates and significance rating for graveyards near the Project Area (above).

6.4 Possible impact on the heritage resources

It is highly unlikely that the historical structures or the graveyards need to be affected by the UCG Project. Nevertheless, the significance of the heritage resources is indicated as well as mitigation measures should any of these resources be affected during the construction, operation or eventual closure of the UCG Project.

6.5 The significance of the heritage resources

6.5.1 The historical structures

The historical structures are older than sixty years and therefore qualify as historical remains. All remains older than sixty years are protected by the National Heritage Resources Act (No 25 of 1999).

The significance of the historical remains can be rated according to the criteria outlined in Table 1. The level of significance of the historical structures is indicated as medium to low (Table 3).

Significance rating	Criteria for significance rating	Mitigation/Management Measures
High (3)	National/provincial value Educational, research, aesthetical conservation value Future use	Conserve unaffected for posterity (preferably) <i>in situ</i>
Medium (2)	Provincial value	Phase II investigation

	Medium educational, research, aesthetic conservation value No future use	before demolishing. Permitting required
Low (1)	Local and site specific value Low educational, research, aesthetic conservation value No future use	Document during Phase I HIA Demolish during construction. No permitting required

Table 3- Criteria for rating the significance of the historical remains (above).

6.5.2 The graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation with regard to graves includes that which applies when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

6.6 The significance of possible impacts on the heritage resources

The significance of possible impacts on the heritage resources was determined using a ranking scale, based on the following:

- Occurrence
 - Probability of occurrence (how likely is it that the impact may/will occur?), and
 - Duration of occurrence (how long may/will it last?)
- Severity
 - Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
 - Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?).

Each of these factors has been assessed for each potential impact using the following ranking scales:

<p>Probability:</p> <p>5 – Definite/don't know</p> <p>4 – Highly probable</p> <p>3 – Medium probability</p> <p>2 – Low probability</p> <p>1 – Improbable</p> <p>0 – None</p>	<p>Duration:</p> <p>5 – Permanent</p> <p>4 - Long-term (ceases with the operational life)</p> <p>3 - Medium-term (5-15 years)</p> <p>2 - Short-term (0-5 years)</p> <p>1 – Immediate</p>
<p>Scale:</p> <p>5 – International</p> <p>4 – National</p> <p>3 – Regional</p> <p>2 – Local</p> <p>1 – Site only</p> <p>0 – None</p>	<p>Magnitude:</p> <p>10 - Very high/don't know</p> <p>8 – High</p> <p>6 – Moderate</p> <p>4 – Low</p> <p>2 – Minor</p>

The environmental significance of each potential impact was assessed using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The maximum value is 100 Significance Points (SP). Potential environmental impacts are rated as very high, high, moderate, low or very low significance on the following basis:

- More than 80 significance points indicates VERY HIGH environmental significance.
- Between 60 and 80 significance points indicates HIGH environmental significance.
- Between 40 and 60 significance points indicates MODERATE environmental significance.

- Between 20 and 40 significance points indicates LOW environmental significance.
- Less than 20 significance points indicates VERY LOW environmental significance.

6.6.1 The historical structures

The complex of historical structures occurs to the north of the proposed stand for the UCG Project's power generator where these remains need not be affected by the proposed UCG Project.

The significance of any potential impacts on the historical structures therefore is low (Table 4).

Historical structures	Probability of impact	Magnitude of impact	Duration of impact	Scale of impact	Significance points	Significance rating
HH01 HH02 HH03	1	2	5	1	8	Low
SH01	1	2	5	1	8	Low
WS02	1	2	5	1	8	Low
WS03	1	2	5	1	8	Low

Table 4: The significance of potential impacts on the historical structures (above).

6.6.2 The graveyards

GY01 is situated to the west of the proposed stand for the UCG Project's power generator whilst GY02 is situated approximately 20m from the shoulder of the dirt road where the electrical power line may run. The two graveyards therefore need not to be affected by the proposed UCG Project.

The significance of any possible impact on the graveyards is therefore low (Table 5).

Grave-yards	Probability of impact on site	Magnitude of impacts on site	Duration of impacts on site	Scale of impacts on site	Significance points	Significance rating
GY01	1	2	5	1	8	Low
GY02	1	2	5	1	8	Low

Table 5: The significance of potential impacts on the graveyards (above).

6.7 Mitigating the heritage resources

The significance of any possible impact on the historical structures or the graveyards is low (Tables 4 & 5).

Notwithstanding, mitigation measures are outlined should any of these heritage resources be affected during the construction, operation or eventual closure of the UCG Project.

6.7.1 Mitigating the historical structures

Historical structures may not be affected by the UCG Project *prior* to their investigation by a historical architect in good standing with the SAHRA. Africary would have to acquire a demolition permit from the SAHRA after these structures have been documented by the historical architect before they can be altered (demolished, renovated) as a result of the UCG Project.

6.7.2 Mitigating the graveyards

Graveyards can be mitigated in two ways depending on whether they may be affected, directly or indirectly, namely:

- By means of exhumation and relocation when graveyards are affected directly. The exhumation of human remains and the relocation of graveyards are subject to various laws, regulations and administrative procedures. This task

is undertaken by forensic archaeologists or by reputable undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 day statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains has to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

- Graveyards can be demarcated with brick walls or with fences when they are affected only indirectly and not in any physical way. Conserving graveyards *in situ* in developed areas creates the risk and responsibility that they may be damaged accidentally, that the developer remains responsible for the graveyards' future unaffected existence and maintenance, and that controlled access must exist for any relatives or friends who wish to visit the deceased.

The Phase I HIA study for the proposed UCG Project identified the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Structures with historical significance.
- Graveyards.

These heritage resources were geo-referenced and mapped (Figure 8; Tables 1 & 2). The significance of these heritage resources is indicated as well as the significance of any impact on these heritage resources (Tables 3-5). Mitigation measures are outlined should any of these heritage resources be affected by the proposed UCG Project.

Possible impact on the heritage resources

It is highly unlikely that the historical structures or the graveyards need to be affected by the UCG Project. Nevertheless, the significance of the heritage resources is indicated as well as mitigation measures should any of these resources be affected during the construction, operation or eventual closure of the UCG Project.

The significance of the heritage resources

The historical structures

The historical structures are older than sixty years and therefore qualify as historical remains. All remains older than sixty years are protected by the National Heritage Resources Act (No 25 of 1999).

The significance of the historical remains can be rated according to the criteria outlined in Table 1. The level of significance of the historical structures is indicated as medium to low (Table 3).

The graveyards

All graveyards and graves can be considered to be of high significance and they are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation

with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

The significance of possible impacts on the heritage resources

The significance of possible impacts on the heritage resources was determined using a ranking scale, based on various criteria.

The historical structures

The complex of historical structures occurs to the north of the proposed site for the UCG Project's power generator and these remains need not be affected by the proposed UCG Project.

The significance of any potential impacts on the historical structures is therefore low (Table 4).

The graveyards

GY01 is situated to the west of the proposed site for the UCG Project's power generator whilst GY02 is situated approximately 20m from the shoulder of the dirt road where the electrical power line may run. The two graveyards therefore need not be affected by the proposed UCG Project.

The significance of any possible impact on the graveyards is therefore low (Table 5).

Mitigating the heritage resources

The significance of any possible impact on the historical structures or the graveyards is low (Tables 4 & 5).

Notwithstanding, mitigation measures are outlined should any of these heritage resources be affected during the construction, operation or eventual closure of the UCG Project.

Mitigating the historical structures

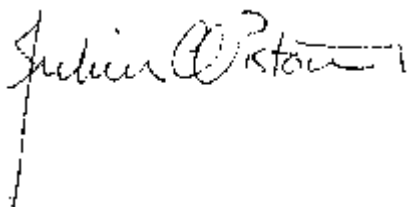
Historical structures may not be affected by the UCG Project *prior* to their investigation

by a historical architect in good standing with the SAHRA. Africary would have to acquire a demolition permit from the SAHRA after these structures have been documented by the historical architect and before they can be altered (demolished, renovated) as a result of the UCG Project.

Mitigating the graveyards

Graveyards can be mitigated in two ways, depending on whether they may be affected directly or indirectly, namely:

- By means of exhumation and relocation when graveyards are affected directly. The exhumation of human remains and the relocation of graveyards are subject to various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputable undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 day statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains has to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.
- Graveyards can be demarcated with brick walls or with fences when they are affected only indirectly and not in any physical way. Conserving graveyards *in situ* in developed areas creates the risk and responsibility that they may be damaged accidentally, that the developer remains responsible for the graveyards' future unaffected existence and maintenance, and that controlled access must exist for any relatives or friends who wish to visit the deceased.



Dr Julius CC Pistorius
Archaeologist & Heritage Consultant
Member ASAPA

8 SELECT BIBLIOGRAPHY

Coetzee, C. B. (red) 1976. *Delfstowwe van die Republiek van Suid Afrika*. Geologiese Opname, Departement van Mynwese. Staatsdrukker: Pretoria. (Vyfde Uitgawe).

De Beers Consolidated Mines Ltd. (Kimberley Division). 1980. Preliminary report on proposals for the mining of Voorspoed Mine .

Erasmus, B.P.J. 1995. *Oppad in Suid Afrika. 'n Gids tot Suid Afrika, Streek vir Streek*. Jonathan Ball Uitgewers Bpk.

Maggs, T.'O. C. 1976. *Iron Age communities of the Southern Highveld*. Natal Museum: Pietermaritzburg.

Memorandum. Summary of Voorspoed Mine information. De Beers Consolidated Mines Ltd. (24 March 1994)

Pistorius 2004. *A Heritage Impact Assessment (HIA) study for the EMP for the Voorspoed Diamond Mine near Kroonstad in the Free State Province of South Africa*. Unpublished report for De Beers and Metago Environmental Engineers.

Pistorius 2005. *A Heritage Impact Assessment (HIA) study for the proposed new water pipe line to be established from the Renosterdam to the proposed new Voorspoed Diamond Mine near Kroonstad in the Free State Province of South Africa*. Unpublished report for De Beers and Metago Environmental Engineers.

Pistorius 2008. *A Phase I Heritage Impact Assessment study for the proposed re-mining and processing of Tailings Storage Facilities at the operations of Harmony Gold Mining Company Limited (Harmony) in the Welkom area in the Free State Province of South Africa*. Unpublished report prepared for Golder Associates Africa (Pty) Ltd.

Shillington, K. 1995. *History of Africa*. Macmillan: London

Standard Encyclopedia of Southern Africa. Vol 12, p47b.

Viljoen, M.J. & Reinhold, W.U. 1999. *An introduction to South Africa's geological and mining heritage*. Mintek: Randburg.

Wagner, P. A. 1927. *The Lichtenburg diamond diggings*. S.A. Mining and Engineering Jour. No 1864, pp455-457.

Wagner, P. A. 1971. *The diamond fields of Southern Africa*. Struik: Cape Town (2nd print).

Williams, G. F. 1902. *The diamond mines of South Africa. Some account of their rise and development*. Macmillan: London.

Erasmus, B.P.J. 1995. *Oppad in Suid Afrika. 'n Gids tot Suid Afrika, Streek vir Streek*. Jonathan Ball Uitgewers Bpk.

Naude, M. 2000. Vernacular stone buildings and structures on farmsteads in the southern districts of the Mpumalanga Province. *South African Journal of Cultural History*. 14(2): 31-64

Pretorius, Fransjohan. 1999. *Life on commando during the Anglo Boer War 1899-1902*. Human & Rousseau: Cape Town.

Schapera, I. 1927. The Tribal Divisions of the Bushmen. *Man*. Published by the Royal Anthropological Institute of Great Britain and Ireland. 27, 68-73.

9 SPOKESPERSONS CONSULTED

Manie Engelbrecht. Resident and farmer on Palmietkuil 548

Kobus Swart. Resident and farmer on Palmietkuil 548.

APPENDIX A: DETAILS OF THE SPECIALIST

Profession: Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide Trainer and Heritage Consultant

Qualifications:

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

Work experience:

Museum curator and archaeologist for the Rustenburg and Phalaborwa Town Councils (1980-1984)

Head of the Department of Archaeology, National Cultural History Museum in Pretoria (1988-1989)

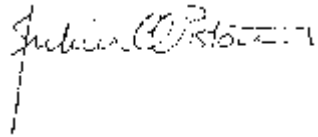
Lecturer and Senior lecturer Department of Anthropology and Archaeology, University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Consultant (2003-)

Accreditation: Member of the Association for Southern African Professional Archaeologists. (ASAPA)

Summary: Julius Pistorius is a qualified archaeologist and heritage specialist with extensive experience as a university lecturer, museum scientist, researcher and heritage consultant. His research focussed on the Late Iron Age Tswana and Lowveld-Sotho (particularly the Bamalatji of Phalaborwa). He has published a book on early Tswana settlement in the North-West Province and has completed an unpublished manuscript on the rise of Bamalatji metal workings spheres in Phalaborwa during the last 1 200 years. He has written a guide for Eskom's field personnel on heritage management. He has published twenty scientific papers in academic journals and several popular articles on archaeology and heritage matters. He collaborated with environmental companies in compiling State of the Environmental Reports for Ekurhuleni, Hartbeespoort and heritage management plans for the Magaliesberg and Waterberg. Since acting as an independent consultant he has done approximately 800 large to small heritage impact assessment reports. He has a longstanding working relationship with Eskom, Rio Tinto (PMC), Rio Tinto (EXP), Impala Platinum, Angloplats (Rustenburg), Lonmin, Sasol, PMC, Foskor, Kudu and Kelgran Granite, Bafokeng Royal Resources etc. as well as with several environmental companies.

APPENDIX B: DECLARATION OF INDEPENDENCE

<p>I, Julius CC Pistorius, declare that:</p> <ul style="list-style-type: none"> • I act as the independent environmental practitioner in this application • I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant • I declare that there are no circumstances that may compromise my objectivity in performing such work; • I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity; • I will comply with the Act, regulations and all other applicable legislation; • I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application; • I have no, and will not engage in, conflicting interests in the undertaking of the activity; • I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; • I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application; • I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report; • I will keep a register of all interested and affected parties that participated in a public participation process; and • I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not • all the particulars furnished by me in this form are true and correct; • will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and • I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act. <p>Disclosure of Vested Interest</p> <p>I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.</p>
<p style="text-align: center;"></p> <p>_____ Signature of the environmental practitioner: Private Consultant</p> <p>_____ Name of company:</p> <p>_____ Date: 20-6-2013</p>
<p>_____ Signature of the Commissioner of Oaths:</p> <p>_____ Date:</p> <p>_____</p>

Designation: