Phase 1 Archaeological Impact Assesment Report

KLEIN KARIBA RESORT REZONING, BELA-BELA (WARMBATHS), WATERBERG DISTRICT MUNICIPALITY, LIMPOPO PROVINCE

2011-03-25

Prepared for **AGES Limpopo**

Compiled by N. Kruger

AGES
Purpose with Passion

Proudly Supporting
TOUCHING AFRICA

Prepared by

AGES

Purpose with Passion

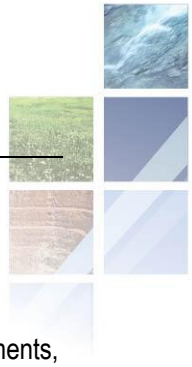
ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF DEMARCATED SURFACE AREAS AT THE KLEIN KARIBA RESORT, WATERBERG DISTRICT MUNICIPALITY, LIMPOPO PROVINCE

March 2011

Compiled by:

Neels Kruger (BA, BA Hons. Archaeology Pret.)

GAUTENG PROVINCE: 356 Zwavelpoort, Lynnwood Pretoria, Postnet no 74, Private Bag X07, Arcadia, 0007
Tel: +27-12 751 2160 Fax: +27 (0) 86 607 2406 www.ages-group.com



Although AGES (Pty) Ltd. exercises due care and diligence in rendering services and preparing documents, AGES (Pty) Ltd. accepts no liability, and the client, by receiving this document, indemnifies Africa Geo-Environmental Services (Pty) Ltd and its directors, managers, agents and employees against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by AGES (Pty) Ltd. and by the use of the information contained in this document.

AGES (Pty) Ltd. promotes the conservation of sensitive archaeological and heritage resources and therefore uncompromisingly adheres to relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980). In order to ensure best practices and ethics in the examination, conservation and mitigation of archaeological and heritage resources, AGES (Pty) follows the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment as set out by the South African Heritage Resources Agency (SAHRA) and the CRM section of the Association for South African Professional Archaeologists (ASAPA).

NOTATIONS AND TERMS

Absolute dating:
Absolute dating provides specific dates or range of dates expressed in years.

Archaeology:
The study of the human past through its material remains.

Archaeological record:
The archaeological record minimally includes all the material remains documented by archaeologists. More comprehensive definitions also include the record of culture history and everything written about the past by archaeologists.

Artefact:
Entities whose characteristics result or partially result from human activity. The shape and other characteristics of the artifact are not altered by removal of the surroundings in which they are discovered. In the southern African context examples of artefacts include potsherds, iron objects, stone tools, beads and hut remains.

Assemblage:
A group of artefacts recurring together at a particular time and place, and representing the sum of human activities.

^{14}C or radiocarbon dating:
The ^{14}C method determines the absolute age of organic material by studying the radioactivity of carbon. It is reliable for objects not older 70 000 years by means of isotopic enrichment. The method becomes increasingly inaccurate for samples younger than ±250 years.

Ceramic Facies:
In terms of the cultural representation of ceramics, a facies is denoted by a specific branch of a larger ceramic tradition. A number of ceramic facies thus constitute a ceramic tradition.

Ceramic Tradition:
In terms of the cultural representation of ceramics, a series of ceramic units constitutes as ceramic tradition.

Context:
An artefact's context usually consists of its immediate *matrix*, its *provenience* and its *association* with other artefacts. When found in *primary context*, the original artefact or structure was undisturbed by natural or human factors until excavation and if in *secondary context,* disturbance or displacement by later ecological action or human activities occurred.

Culture:
A contested term, "culture" could minimally be defined as is the learned and shared things that people have, do and think.

Cultural Heritage Resource:
The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

Cultural landscape:
A cultural landscape refers to a distinctive geographic area with cultural significance.

Cultural Resource Management (CRM):
A system of measures for safeguarding the archaeological heritage of a given area, generally applied within the framework of legislation designed to safeguard the past.

Ecofact:

Non artifactual material remains that has cultural relevance which provides information about past human activities. Examples would include remains or evidence of domesticated animals or plant species.

Excavation:

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and the other material covering and accompanying it.

Feature:

Non-portable artifacts, in other words artifacts that cannot be removed from their surroundings without destroying or altering their original form. Hearths, roads, and storage pits are examples of archaeological features

GIS:

Geographic Information Systems are computer software that allows layering of various types of data to produce complex maps; useful for predicting site location and for representing the analysis of collected data within sites and across regions.

Historical archaeology:

Primarily that aspect of archaeology which is complementary to history based on the study of written sources. In the South African context it concerns the recovery and interpretation of relics left in the ground in the course of Europe's discovery of South Africa, as well as the movements of the indigenous groups during, and after the *mfecane* or *difaqane*.

Iron Age:

Also known as "Farmer Period", the "Iron Age" is an archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture.

Lithic:

Stone tools or waste from stone tool manufacturing found in on archaeological sites.

Matrix:

The material in which an artefact is situated (sediments such as sand, ashy soil, mud, water, etcetera). The matrix may be of natural origin or human-made.

Megalith:

A large stone, often found in association with others and forming an alignment or monument, such as large stone statues.

Midden:

Refuse that accumulates in a concentrated heap.

Microlith:

A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.

Monolith:

A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

Oral Histories:

The historical narratives, stories and traditions passed from generation to generation by word of mouth.

Pre-Phase 1 CRM Assessment:

An initial pre-assessment (scoping) phase, where the specialist establishes the scope of the project and terms of reference for the developer.

Phase 1 CRM Assessment:

An Impact Assessment which identifies archaeological and heritage sites, assesses their significance and comments on the impact of a given development on the sites. Recommendations for site mitigation or conservation are also made during this phase.

Phase 2 CRM Study:

In-depth studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or

auger sampling is required. Mitigation / Rescue involves planning the protection of significant sites or sampling through excavation or collection (in terms of a permit) at sites that may be lost as a result of a given development.

Phase 3 CRM Measure:

A Heritage Site Management Plan (for heritage conservation), is required in rare cases where the site is so important that development will not be allowed and sometimes developers are encouraged to enhance the value of the sites retained on their properties with appropriate interpretive material or displays.

Prehistoric archaeology:

That aspect of archaeology which concerns itself with the development of humans and their culture before the invention of writing. In South Africa, prehistoric archaeology comprises the study of the Early Stone Age, the Middle Stone Age and the greater part of the Later Stone Age and the Iron Age.

Probabilistic Sampling:

A sampling strategy that is not biased by any person's judgment or opinion. Also known as statistical sampling, it includes systematic, random and stratified sampling strategies.

Provenience

Provenience is the three-dimensional (horizontal and vertical) position in which artefacts are found. Fundamental to ascertaining the provenience of an artefact is *association,* the co-occurrence of an artefact with other archaeological remains; and *superposition,* the principle whereby artefacts in lower levels of a matrix were deposited before the artefacts found in the layers above them, and are therefore older.

Random Sampling:

A probabilistic sampling strategy whereby randomly selected sample blocks in an area are surveyed. These are fixed by drawing coordinates of the sample blocks from a table of random numbers.

Relative dating:

The process whereby the relative antiquity of sites and objects are determined by putting them in sequential order but not assigning specific dates.

Remote Sensing:

The small or large-scale acquisition of information of an object or phenomenon, by the use of either recording or real-time sensing device(s) that is not in physical or intimate contact with the object (such as by way of aircraft, spacecraft or satellite). Here, ground-based geophysical methods such as Ground Penetrating Radar and Magnetometry are often used for archaeological imaging.

Rock Art Research:

Rock art can be "decoded" in order to inform about cultural attributes of prehistoric societies, such as dress-code, hunting and food gathering, social behaviour, religious practice, gender issues and political issues.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

Site (Archaeological):

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity. These include surface sites, caves and rock shelters, larger open-air sites, sealed sites (deposits) and river deposits. Common functions of archaeological sites include living or habitation sites, kill sites, ceremonial sites, burial sites, trading, quarry, and art sites,

Slag:

The material residue of smelting processes from metalworking.

Stone Age:

An archaeological term used to define a period of stone tool use and manufacture.

Stratigraphy:

This principle examines and describes the observable layers of sediments and the arrangement of strata in deposits

Stratified Sampling:
A probabilistic sampling strategy whereby a study area is divided into appropriate zones – often based on the probable location of archaeological areas, after which each zone is sampled at random.

Systematic Sampling:
A probabilistic sampling strategy whereby a grid of sample blocks is set up over the survey area and each of these blocks is equally spaced and searched.

Tradition:
Artefact types, assemblages of tools, architectural styles, economic practices or art styles that last longer than a phase and even a horizon are describe by the term *tradition*. A common example of this is the early Iron Age tradition of Southern Africa that originated ± 200 AD and came to an end at about 900 AD.

Tuyère:
A ceramic blow-tube used in the process of iron smelting / reduction.

LIST OF ABBREVIATIONS

Abbreviation	Description
ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
BCE	Before Common Era
EIA	Early Iron Age (also Early Farmer Period)
EIA	Environnemental Impact Assessment
EFP	Early Farmer Period (also Early Iron Age)
ESA	Earlier Stone Age
GIS	Geographic Information Systems
HIA	Heritage Impact Assessment
K2/Map	K2/Mapungubwe Period
LFP	Later Farmer Period (also Later Iron Age)
LIA	Later Iron Age (also Later Farmer Period)
LSA	Later Stone Age
MIA	Middle Iron Age (also Early later Farmer Period)
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Association
YCE	Years before Common Era (Present)

Table of contents

1 EXECUTIVE SUMMARY

This AIA Report is the result of an archaeological impact assessment study of selected surface areas across the farm Buiskop at the ATKV Klein Kariba Resort where further infrastructure is planned. The report includes background information on the archaeology and history of the Waterberg, survey methodologies and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the Limpopo Office of the South African Heritage Resources Agency (LIHRA) and recommendations contained in this document will be reviewed in order to consider the conservation priority of possible sites located in the area.

During the pedestrian survey, no areas of archaeological importance were located within areas demarcated for further development covering a surface area of approximately **35ha**.

Paleontological Remains
No paleontological occurrences were recorded in the survey areas.

Stone Age Remains:
Isolated Middle Stone Age (MSA) material scatters were observed in the general landscape. However, no Stone Age occurrences were recorded in survey areas.

Iron Age (Farmer Period) Remains
No Iron Age (Farmer Period) occurrences were documented within the boundaries of survey areas.

Historical /Recent Remains
No Historical / Colonial Period remains were documented in the survey areas.

Graves
No graves / burial places were documented in the survey area.

A large late Iron Age period stonewalled site was identified on a small plateau on the south western boundary of the property next to an area demarcated for the construction of 20 luxury guest houses. Even though the site occurs outside the demarcated development area, a careful watch and brief monitoring process is recommended for any development processes in this area as periphery features of the site such cattle outposts, meeting areas and / or graves are likely to occur in the larger landscape around the site. In addition, careful management procedures for the archaeological site are recommended. A broad outline for such procedures is supplied in this Report.

This report further details the methodology, limitations and recommendations relevant to heritage areas, as well as areas of proposed development. It should be noted that recommendations and mitigation measures are valid for the duration of the development process, and mitigation measures might have to be implemented on additional features of heritage importance not detected during this Phase 1 assessment (e.g. uncovered during the construction process).

2 BACKGROUND

2.1 Scope and Motivation

AGES (Pty) Ltd. was approached by the ATKV to conduct an Archaeological Impact Assessment of demarcated surface areas totalling more or less 35ha at the Klein Kariba Resort near Bela-Bela (Warmbaths) in the Limpopo Province where further infrastructure development of the Resort is planned. The planned infrastructure includes an event and reception hall, environmental centre, shopping centre, offices, guest rooms and guest houses, a spa complex, conference facility, day visitor's area and a caravan park. The rationale of the proposed study was to determine the presence of heritage resources such as paleontological, archaeological and historical sites and features, graves and places of religious and cultural significance; to consider the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

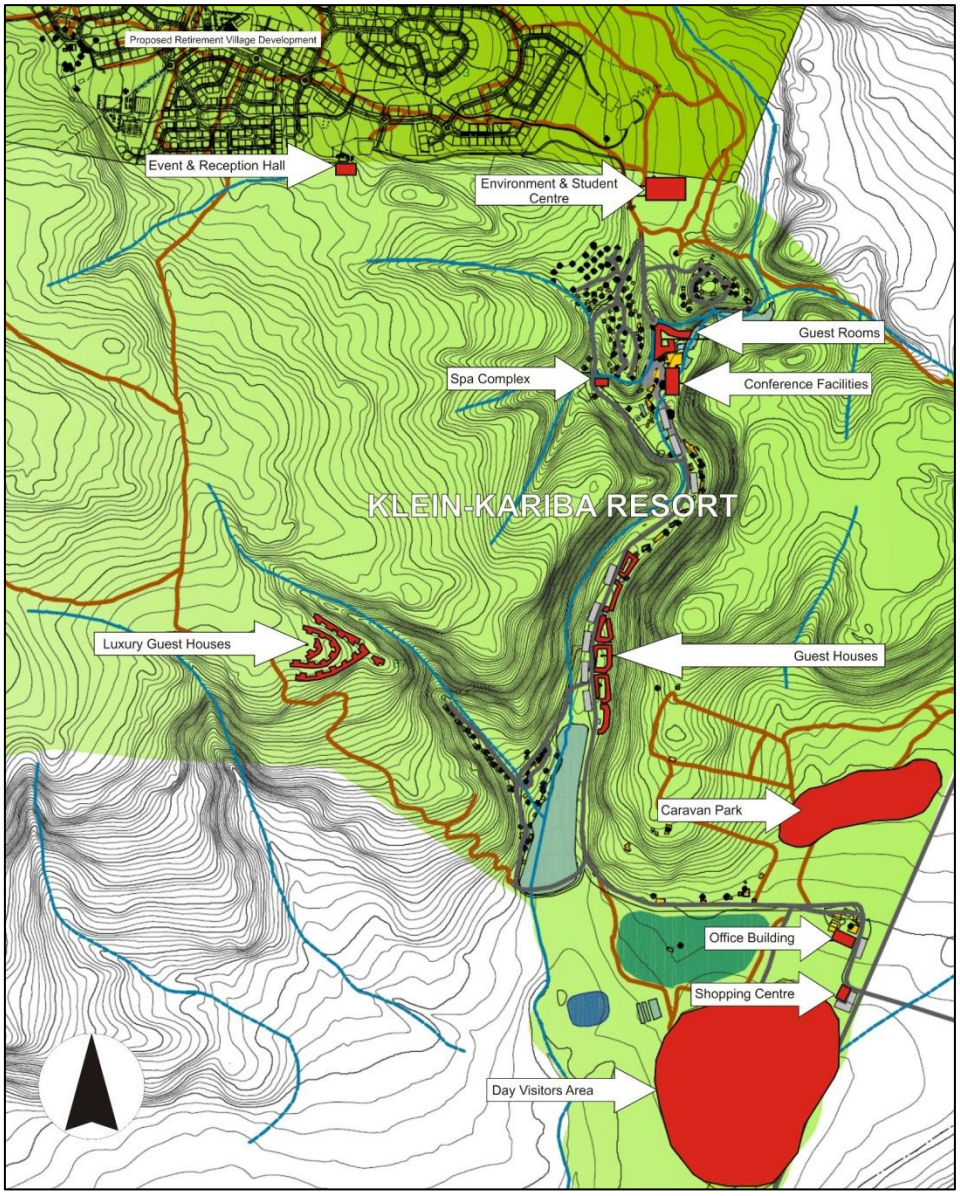


Figure 1: The Klein Kariba Resort with areas demarcated for infrastructure development indicated in red.

2.2 Project Direction

AGES (Pty) Ltd.'s expertise ensures that all projects be conducted to the highest ethical and professional standards. As archaeological specialist for AGES, Mr Neels Kruger acted as field director for the project, responsible for the assimilation of all information, the compilation of the final AIA report and recommendations. Mr Kruger is an accredited archaeologist and CRM practitioner with the Association of South African Professional Archaeologists (ASAPA) and a Master's Degree candidate in archaeology at the University of Pretoria.

2.3 Terms of Reference

Environmental Impact Assessments (EIA's) should, in all cases, include the assessment of Heritage Resources. The heritage component of the EIA is provided for in the **National Environmental Management Act, (Act 107 of 1998)** and endorsed by section 38 of the **National Heritage Resources Act (NHRA - Act 25 of 1999)**. In addition, the NHRA protects all structures and features older than 60 years (see Section 34), archaeological sites and material (see Section 35) and graves as well as burial sites (see Section 36). The objective of this legislation is to enable and to facilitate developers to employ measures to limit the potentially negative effects that the development could have on heritage resources.

Based hereon, the Klein Kariba AIA project functioned on the following **terms of reference:**

- *Provide a detailed description of all archaeological artefacts, structures (including graves) and settlements, if any.*
- *Estimate the level of significance/importance of the archaeological remains within the area.*
- *Assess any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities.*
- *Propose possible mitigation measures provided that such action is necessitated by the development.*
- *Liaise and consult with the South African Heritage Resources Agency (SAHRA).*

2.4 CRM: Legislation, Conservation and Heritage Management

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

2.4.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and their provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa at all times.

- *National Heritage Resources Act No 25 of 1999, section 35*

According to the National Heritage Resources Act of 1999 a historical site is "any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years." This clause is commonly known as the "60-years clause". Buildings are amongst the most enduring features of human occupation, and this definition

therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Iron Age settlements. "Tell" refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts).

The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects, meteorites and rare geological specimens
- visual art objects
- military objects
- numismatic objects
- objects of cultural and historical significance
- objects to which oral traditions are attached and which are associated with living heritage
- objects of scientific or technological interest
- any other prescribed category

With regards to activities and work on archaeological and heritage sites this Act states that:

"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority." (34. [1] 1999:58)

and

"No person may, without a permit issued by the responsible heritage resources authority-

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58)."

And:

"No person may, without a permit issued by SAHRA or a provincial heritage resources agency-

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 tears which is situated outside a formal cemetery administered by a local authority;

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."

- *Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925*

Graves 60 years or older fall under the jurisdiction of the Human Tissues Act of 1983 and the National Heritage Resources Act, as these sites areas are heritage resources. The Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws protect graves younger than 60 years. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

2.4.2 Background to HIA and AIA Studies

South Africa's unique and non-renewable archaeological and paleontological heritage sites are 'Generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIA's & AIA's) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites.

HIA's and AIA's should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and paleontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact of the sites.

The National Heritage Resources Act (Act No. 25 of 1999, section 38) provides guidelines for Cultural Resources Management and prospective developments:

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

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any development or other activity which will change the character of a site:

(i) exceeding 5 000 m^2 in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

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

(d) the re-zoning of a site exceeding 10 000 m^2 in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development."

And:

"The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected;

(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

(c) an assessment of the impact of the development on such heritage resources;

(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(g) plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64)."

Consequently, section 35 of the Act requires Heritage Impact Assessments (HIA's) or Archaeological Impact Assessments (AIA's) to be done for such developments in order for all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance to be protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, paleontological sites and objects.

3 REGIONAL CONTEXT

3.1 Area Location

The ATKV Klein Kariba Resort is situated on the farm Buiskop 464KR, approximately 6km north of the town of Bela-Bela (Warmbaths) in the Waterberg Municipal Area of the Limpopo Province at **S24°50'46.29" E28°19'46.06"**. The R101 Provincial road to Modimolle (Nylstroom) passes directly east of study area.

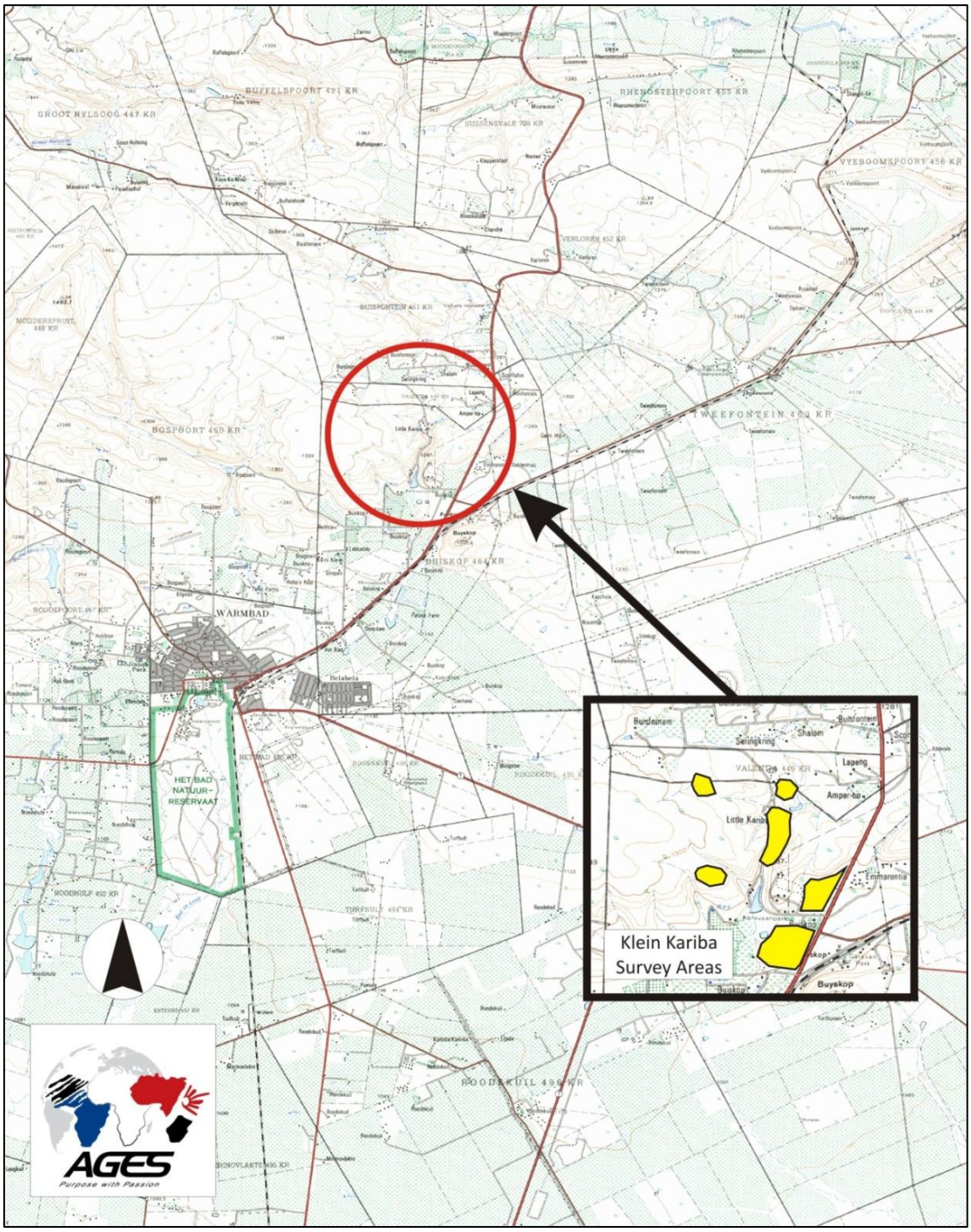


Figure 2: 1:50000 Map representation of the Klein Kariba survey area (2428CD).

3.2 Area & Site Description

3.2.1 Area Description

The ATKV Klein Kariba Resort is situated in a valley on the eastern periphery of the Waterberg Biome in the Waterberg Mountain Range. The district is rural in nature, with dispersed urban areas connecting numerous farming communities and conservation areas. The area is well hydrated and during the rainy season an abundance of streams and rivulets occur particularly in the mountainous areas. The geology of the Waterberg area is unique, yet complex due to geological formations predominantly constituted out of sandstone with a high mineral content. The most important intrusive rock formation is the Bushveld Ingenuous Complex that holds large reserves of platinum. A large diversity of habitat types occurs in the Waterberg biome. Deep sandy soils alternated by shallow and rocky soils appear on the flats and plateau, while in the valleys the vegetation changes from riparian (amongst others riparian woodlands and near-forests, reed beds and marshes) to predominantly thornveld on the loamy alluvial valley floors. According to Acocks (1988), there are five different veld types represented in the Waterberg biosphere of which the most common are typical savannah vegetation types such as Sour Bushveld and Mixed Bushveld.

Human interventions and development forms part of the history of the Waterberg and large sections of land has been altered by human activity in the past. The area contributes significantly towards the activity of agriculture with the cultivations of, amongst others, tobacco, cotton, sunflower, sorghum, and maize. In addition, the Waterberg provides vast grazing areas adding significantly to the production of red meat and the game industry and the effect of subsistence crop farming, as well as overgrazing by cattle and game with resulting vegetation changes is prevalent across the Waterberg biome. The growing tourism and hunting industry also influences the current human footprint on the area.

Figure 3: View of the Waterberg plateau with the Klein Kariba Resort in the foreground.

3.2.2 Site Description

For the purposes of this AIA study, the Klein Kariba property was divided into five survey areas (see Figure 4). Each of the survey areas followed the demarcated borders of each of the zones where the proposed developments are planned (Figure 1).

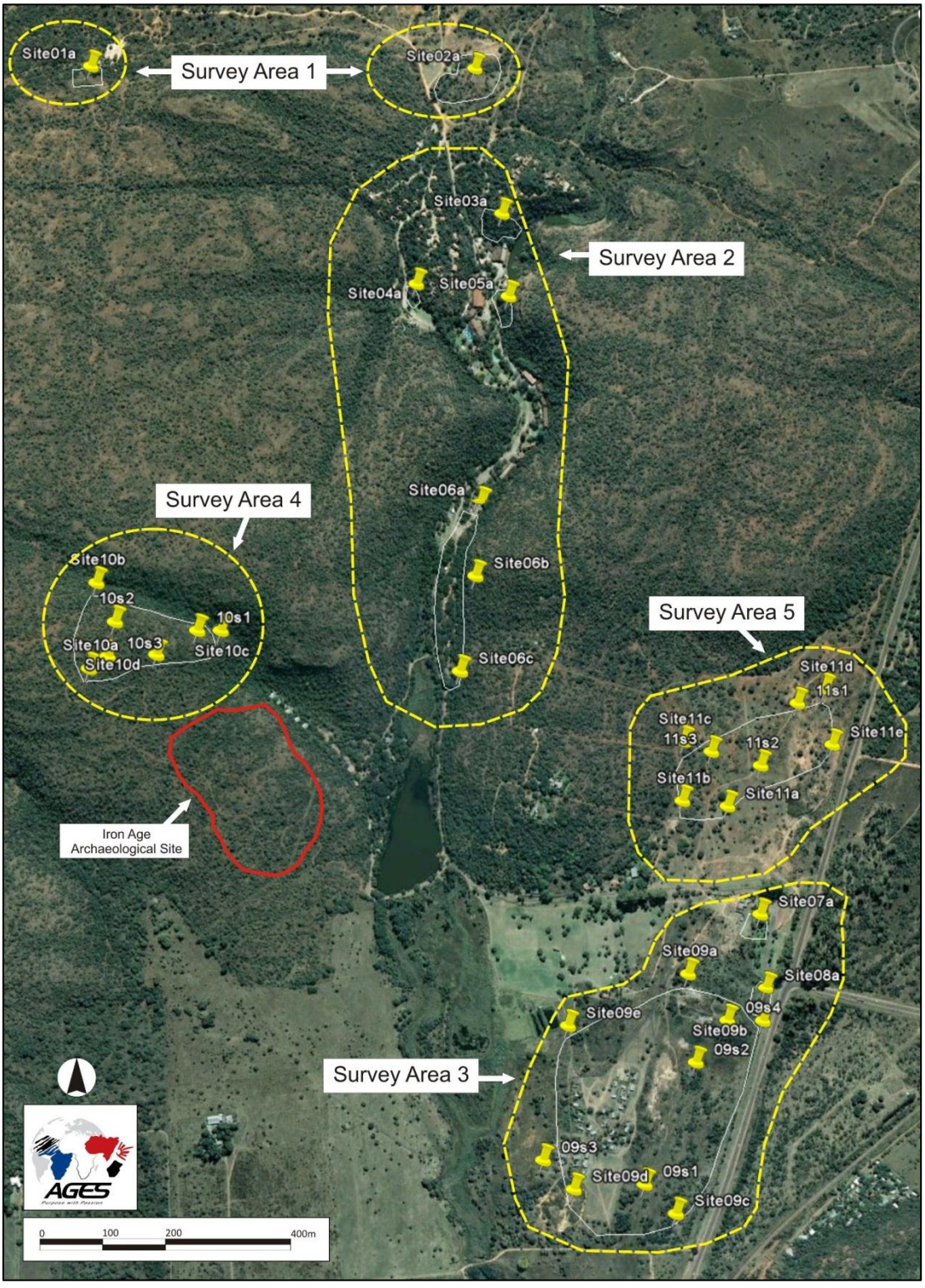


Figure 4: Survey areas and reference points for the Klein Kariba AIA Study field survey.

The following table details the Survey Areas and Sites where infrastructure is planned at the Klein Kariba Resort.

Klein Kariba AIA Survey					
Survey Area	**Sites**	**Coordinates**			**Description**
1	**Site 1**	**Site01a**	24.832680°	28.323609°	**New Hall**
	Site 2	**Site02a**	24.833332°	28.331574°	**New Environment Centre**
2	**Site 3**	**Site03a**	24.836175°	28.331835°	**New Guest Rooms**
	Site 4	**Site04a**	24.837356°	28.329884°	**New Spa Complex**
	Site 5	**Site05a**	24.837789°	28.331777°	**New Conference Facility**
	Site 6	**Site06a**	24.841530°	28.330758°	**New Guest Houses**
		Site06b	24.843096°	28.330546°	
		Site06c	24.844898°	28.330026°	
3	**Site 7**	**Site07a**	24.850009°	28.335786°	**New Offices**
	Site 8	**Site08a**	24.851398°	28.335713°	**New Shopping Centre**
	Site 9	**Site09a**	24.850984°	28.334129°	**New Day Visitors Area**
		Site09b	24.852061°	28.335558°	
		Site09c	24.855621°	28.333204°	
		Site09d	24.854960°	28.331132°	
		Site09e	24.851772°	28.331399°	
		09s1	24.855004°	28.332626°	
		09s2	24.852744°	28.334021°	
		09s3	24.854341°	28.330559°	
		09s4	24.851982°	28.334805°	
4	**Site 10**	**Site10a**	24.844170°	28.322452°	**New Luxury Guest Houses**
		Site10b	24.842539°	28.322706°	
		Site10c	24.843695°	28.325200°	
		Site10d	24.844031°	28.323846°	
		10s1	24.843682°	28.324758°	
		10s2	24.843362°	28.323091°	
		10s3	24.844003°	28.322901°	
5	**Site 11**	**Site11a**	24.847900°	28.335365°	**New Caravan Park**
		Site11b	24.847708°	28.334428°	
		Site11c	24.846566°	28.334614°	
		Site11d	24.845819°	28.337771°	
		Site11e	24.846919°	28.337755°	
		11s1	24.846044°	28.337136°	
		11s2	24.847183°	28.336176°	
		11s3	24.846819°	28.335168°	

- ***Survey Area 1 (Event and Reception Hall and Environmental Centre)***

Survey Area 1 consists out of two Sites (Site 1 & Site 2) in the northern section of the property, where a large reception hall and an environmental centre respectively, are planned. The surrounding vegetation at Site 1, consisting out of dense bush and grass cover is largely intact but vegetation at Site 2 has been vastly disturbed where a water reservoir and animal pens have been installed.

Figure 5: Physical surroundings at Site 1 where a reception hall is planned.

Figure 6: Disturbed surface cover at Site 2 where an environmental centre is planned.

- ***Survey Area 2 (Guest Rooms, Guest Houses, Spa Complex, Conference Facility)***

Survey Area 2 consists out of 4 survey sites where various facilities are planned. These sites occur in relatively small open spaces within in the residential and recreational zone of the Klein Kariba resort on the banks of the drainage line that feeds into the Klein Kariba dam to the south. Pockets of vegetation in these areas, mostly consisting out of riverine bush and grass, are more or less intact but not pristine. Other areas, such as the existing caravan park at Site 6 - to be converted into Guest houses – have already been altered in its entirety.

Figure 7: Grass and riverine bush cover at Site 3.

Figure 8: Areas demarcated for the construction of guest houses above the waterfall at Site 3.

Figure 9: The existing caravan park at Site 6, to be converted into new guest houses.

- ***Survey Area 3 (Shopping Centre, Offices, Day Visitors Area)***

At Survey Area 3, three areas were investigated. Two smaller sites near the entrance to the Resort have been set aside for the construction of offices and a shopping centre. The surroundings in these areas have been minimally disturbed. A third area covering approximately 10ha, situated on the southern extremity of the property

has been demarcated for development as future day visitor's area. This area has been extensively disturbed and altered by man-made agents where a sports field, employees' housing facilities and a large waste dump have been established. Natural agents such as animal burrowing and erosion have also adversely altered the natural surroundings in the larger landscape.

Figure 10: Natural surroundings at Site 8 where a shopping complex is planned.

Figure 11: Surface disturbances and pollution at Site 9.

Figure 12: View of sports field and worker's houses at Site 9.

- ***Survey Area 4*** **(Luxury Guest Houses)**

Luxury guest houses are planned for a small ridge on the south-western section of the property above the Klein Kariba dam. Vegetation in this area, identified as Mixed Bushveld appears to be generally pristine. The ridge is traversed by a hiking trail which connects the southern section of the Resort to the north. Archaeological features occur in the larger landscape surrounding this area.

Figure 13: Surrounding vegetation at Survey Area 4.

Figure 14: Survey Area 4 looking down on the Springbok Plains to the south.

- ***Survey Area 5 (Caravan Park).***

Survey Area 5, situated on the eastern border of the property is currently used as grazing space for large game such as wildebeest and zebra. This grassland area shows signs of disturbance where sections of the surface were excavated (see Figure 19). The remains of a farmstead also occur in this area.

Figure 15: Foraged grasslands in Survey Area 5.

Figure 16: Remains of farmstead in Survey Area 5.

4 METHOD OF ENQUIRY

4.1 Sources of Information

4.1.1 Desktop Study

A desktop study was prepared in order to contextualize the proposed project within a larger historical milieu of the Waterberg plateau. The study focused on relevant previous studies in the area, archaeological and archival sources, aerial photographs, historical maps and local histories.

4.1.2 Aerial Representations and Survey

Aerial photography is often employed to locate and study archaeological sites. This method was applied to aid the pedestrian survey of the surface areas at Klein Kariba, where contour lines of elevations, depressions, variation in vegetation, soil marks and landmarks were examined. Specific attention was given to shadow sites (shadows of walls or earthworks which are visible early or late in the day), crop mark sites (crop mark sites are visible because disturbances beneath crops cause variations in their height, vigour and type) and soil marks (e.g. differently coloured or textured soil (soil marks) might indicate ploughed-out burial mounds).

Attention was also given to moisture differences, as prolonged dampening of soil as a result precipitation frequently occur over walls or embankments. By superimposing high frequency aerial photographs with images generated with Google Earth, potentially sensitive areas were subsequently identified. These areas served as referenced points from where further transect surveys were carried out.

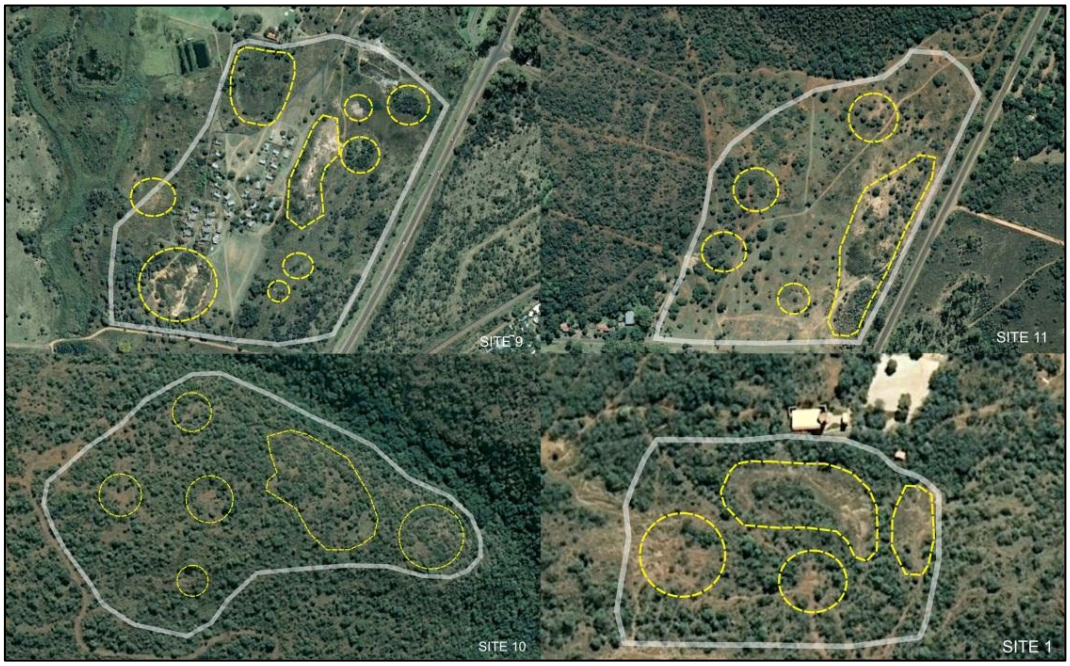


Figure 17: Vegetation changes and unknown features identified on aerial representations of Sites 1, 9, 10 and 11.

4.1.3 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the Survey Areas at Klein Kariba was done by means of a systematic pedestrian survey in accordance with standard archaeological practise by which heritage resources are observed and documented.

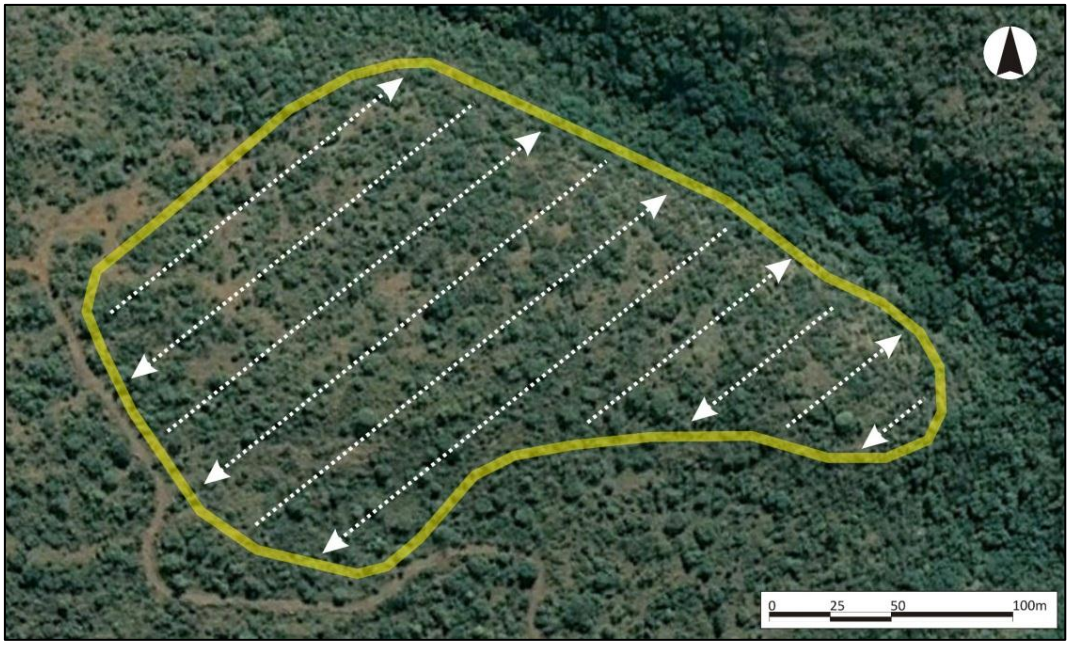


Figure 18: Example of transect system used as reference for the pedestrian survey, Survey Area 4 illustrated here.

In order to sample surface areas systematically and to ensure a high probability of site recording, transect grids in a frequency of 10m were digitally superimposed on maps of all areas (e.g. see Figure 18). These transect lines were applied as guide for the pedestrian survey which focused around potentially sensitive areas identified

during the aerial survey. Walking along the transect system with a Garmin E-trex Legend GPS, objects and structures of archaeological / heritage value were recorded and photographed with a Canon 450D Digital camera. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion (also see Figure 19 & 20).

4.2 Limitations

4.2.1 Access

At present, one main access point to Klein Kariba exists at the main entrance to the Resort. A network of public and private connection roads provides access to most areas on the property and no access restrictions were encountered to any of the survey areas.

4.2.2 Visibility

(Refer to 3.2 Area & Site Description)

The surrounding vegetation differs slightly in the Survey Areas on the property (refer to Section 3.2: Area & Site Description) and is mostly constituted out of a combination of scattered bush, trees, grasslands and riverine bush. Similarly, the general visibility varied between Survey Areas where, at the time of the survey (February 2011), Survey Areas 1, 2, 3 and 5 provided high visibility as a result of the disturbances in these areas. Visibility in Survey Area 4 was moderate due to more intact and dense natural surroundings. In single cases during the survey sub-surface inspection was possible but where applied, this revealed no substantial archaeological deposits (see Figure 19 & 20).

Figure 19: Excavation trench on eastern boundary of Survey Area 5 exposing subsurface deposits.

Figure 20: Excavated and disturbed surface areas at Site 9 in Survey Area 3 where subsurface deposits have clearly been exposed.

4.2.3 Constraints

No constraints were encountered during the pedestrian survey of survey areas at Klein Kariba. Maintaining due cognisance of the integrity and accuracy of the archaeological survey, it should be stated that the survey results from the study do not necessarily represent *all* the heritage resources present on the property. The subterranean nature of some archaeological sites, dense vegetation cover and visibility constraints sometimes distort heritage representations. Therefore, any additional heritage resources located during consequent development phases are to be reported to the Heritage Resources Authority or an archaeological specialist.

5 RESULTS: ARCHAEOLOGICAL SURVEY

5.1 Palaeontology

No paleontological occurrences were observed in any of the demarcated Survey Areas.

5.2 The Stone Age

Isolated Middle Stone Age material scatters were observed in the general landscape around the Klein Kariba Resort. However, no Stone Age occurrences were observed in any of the demarcated Survey Areas.

5.3 The Iron Age (Farmer Period)

No Iron Age (Farmer Period) occurrences were observed in any of the demarcated Survey Areas.

However, a large stonewalled site dating to the later phases of the Iron Age was located directly south-east of Survey Area 4 at **S24°50'44.46" E28°19'30.56"**, where 20 luxury guest houses are to be constructed. The site covers a surface area of more than 4ha where a large complex of roughly built stone walls forming enclosures,

periphery walls and terraces are scattered across the downward slope of the hill. No material culture was observed in association with the structures.

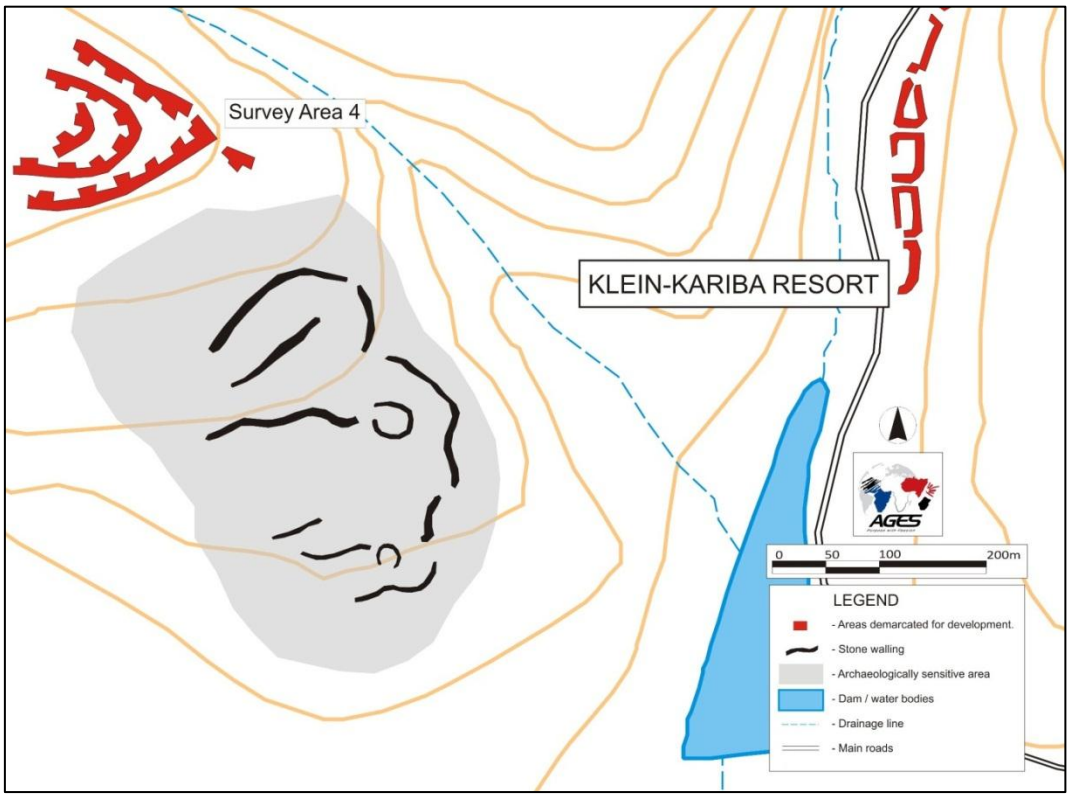


Figure 21: Preliminary map indicating the distribution and extent of Later Iron Age (LIA) walling inside the archeologically sensitive area south-east of Survey Area 4.

Figure 22: Periphery wall of large Iron Age site, occurring south-east of Survey Area 4.

Figure 23: Later Iron Age Stone walling at Klein Kariba.

5.4 Historical / Colonial Period and recent times

No Historical / Colonial Period remains were observed in any of the demarcated Survey Areas

5.5 Graves

No graves / burial places were noted in any of the demarcated Survey Areas.

6 ARCHAE0-HISTORICAL CONTEXT

6.1 The archaeology of Southern Africa

Archaeology in southern Africa is typically divided into two main fields of study, the **Stone Age** and the **Iron Age** or **Farmer Period**. The following table gives a concise outline of the chronological sequence of periods in Southern African history:

Period	Epoch	Associated cultural groups	Typical Material Expressions
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominins: *Australopithecines* *Homo habilis* *Homo erectus*	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First *Homo sapiens* species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	*Homo sapiens sapiens* including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period 300 – 900 AD	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.

Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD	Holocene	Bantu-speaking groups, ancestors of present-day groups	Typically distinct ceramics, bead ware and iron / gold / copper objects, trade goods and grinding stones.
Late Iron Age / Later Farmer Period 1400 AD -1850 AD	Holocene	Various Bantu-speaking groups including Venda, Thonga, Sotho-Tswana and Zulu	Distinct ceramics, grinding stones, iron objects, trade objects, remains of iron smelting activities including iron smelting furnace, iron slag and residue as well as iron ore.
Historical / Colonial Period ±1850 AD – present	Holocene	Various Bantu-speaking groups as well as European farmers, settlers and explorers	Remains of historical structures e.g. homestead, missionary schools etc. as well as, glass, porcelain, metal and ceramics.

Figure 24: Chronological table of major time periods in southern African archaeology.

6.1.1 The Stone Ages

- **The Earlier Stone Age (ESA)**

Earlier Stone Age deposits typically occur on the flood-plains of perennial rivers and may date to between 2 million and 250 000 years ago. These ESA open sites sometimes contain stone tool scatters and manufacturing debris ranging from pebble tool choppers to core tools such as handaxes and cleavers. These stone tools were made by the earliest hominins. These groups seldom actively hunted and relied heavily on the opportunistic scavenging of meat from carnivore fill sites.

- **The Middle Stone Age (MSA)**

The majority of Middle Stone Age (MSA) sites occur on flood plains and sometimes in caves and rock shelters. Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom remain preserved in the archaeological record. Limited drive-hunting activities are also associated with the MSA.

- **The Later Stone Age (LSA)**

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

6.1.2 The Iron Age (Farmer Period)

- **Early Iron Age (Early Farming Communities)**

The Early Iron Age (also Early Farmer Period) marks the movement of Bantu speaking farming communities into South Africa at around 200 A.D. These groups were agro-pastoralists that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Artefact evidence from Early Farmer Period sites is mostly found in the form of ceramic assemblages and the origins and archaeological identities of this period are largely based upon ceramic typologies and sequences, where diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. Early Farmer Period ceramic traditions are classified by some scholars into different “streams” or trends in pot types and decoration that, over time emerged in southern Africa. These “streams” are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). More specifically, in the northern regions of South Africa at least three settlement phases have been distinguished for prehistoric Bantu-speaking agropastoralists. The first phase of the Early Iron Age, known as Happy Rest (named after the site where the ceramics were first identified), is representative of the

Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of Diamant is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the Eiland tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. Early Farmer Period ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. The Early Iron Age continued up to the end of the first millennium AD.

- **Middle Iron Age / K2 Mapungubwe Period (early Later Farming Communities)**

The onset of the middle Iron Age dates back to ±900 AD, a period more commonly known as the Mapungubwe / K2 phase. These names refer to the well-known archaeological sites that are today the pinnacle of South Africa's Iron Age heritage. The inhabitants of K2 and Mapungubwe, situated on the banks of the Limpopo, were agriculturalists and pastoralists and were engaged in extensive trade activities with local and foreign traders. Although the identity of this Bantu-speaking group remains a point of contestation, the Mapungubwe people were the first state-organized society southern Africa has known. A considerable amount of golden objects, ivory, beads (glass and gold), trade goods and clay figurines as well as large amounts of potsherds were found at these sites and also appear in sites dating back to this phase of the Iron Age. Ceramics of this tradition take the form of beakers with upright sides and decorations around the base (K2) and shallow-shouldered bowls with decorations as well as globular pots with long necks (Mapungubwe). The site of Mapungubwe was deserted at around 1250 AD and this also marks the relative conclusion of this phase of the Iron Age.

- **Later Iron Age (Later Farming Communities)**

The late Iron Age of southern Africa marks the grouping of Bantu speaking groups into different cultural units. It also signals one of the most influential events of the second millennium AD in southern Africa, the difaqane. The difaqane (also known as "the scattering") brought about a dramatic and sudden ending to centuries of stable society in southern Africa. Reasons for this change was essentially the first penetration of the southern African interior by Portuguese traders, military conquests by various Bantu speaking groups primarily the ambitious Zulu King Shaka and the beginning of industrial developments in South Africa. Different cultural groups were scattered over large areas of the interior. These groups conveyed with them their customs that in the archaeological record manifests in ceramics, beads and other artefacts. This means that distinct pottery typologies can be found in the different late Iron Age group of South Africa.

Bantu Speaking Groups in the South African interior:

It should be noted that terms such as "Nguni", "Sotho", "Venda" and others refer to broad and comprehensive language groups that demonstrated similarities in their origins and language. It does not imply that these Nguni / Sotho groups were homogeneous and static; they rather moved through the landscape and influenced each other in continuous processes marked by cultural fluidity.

Ethnographers generally divide major Bantu-speaking groups of southern Africa into two broad linguistic groups, the Nguni and the Sotho with smaller subdivisions under these two main groups. Nguni groups were found in the eastern parts of the interior of South Africa and can be divided into the northern Nguni and the southern Nguni. The various Zulu and Swazi groups were generally associated with the northern Nguni whereas the southern Nguni comprised the Xhosa, Mpondo, Thembu and Mpondomise groups. The same geographically based divisions exist among Sotho groups where, under the western Sotho (or Tswana), groups such as the Rolong, Hurutshe, Kwena, Fokeng and Kgatla are found. The northern Sotho included the Pedi, and an amalgamation of smaller groups united to become the southern Sotho group or the Basutho. Other smaller language groups such

as the Venda, Lemba and Tshonga Shangana transpired outside these major entities but as time progressed they were, however to lesser or greater extend influenced and absorbed by neighbouring groups.

During the last 500 years, the Highveld areas of Gauteng, Mpumalanga and the Limpopo Province were occupied mainly by Ndebele and Pedi groups. These Ndebele groups originated from the Hlubi, a small split group that moved to the north-eastern parts of the Transvaal where they became known as the Transvaal Ndebele (not to be confused with the Ndebele of Mzilikazi). Ndebele groups settled in areas surrounding present-day Pretoria, at Kwa Maza near present-day Stoffberg, at Polokwane and Modimole and across large parts of Mpumalanga. The Kgatla, a Pedi group was established at the end of the 15th century by chief Mokgatla, who broke away from the Hurutshe group to settle in the Witwatersrand area. The Kgatla resided in an expansive area that included present-day Pretoria, the surroundings of the Magaliesberg and areas around present-day Brits, Rustenburg, Modilmolle and Bela-Bela (Warmbaths) as well as the Pilansberg area. Isolated Kgatla communities also settled in the surroundings of Lydenburg, Middelburg, Bronkhorstspruit and the Soutpansberg.

6.1.3 Historical and Colonial Times and Recent History:

The Historical period in southern Africa encompass the course of Europe's discovery of South Africa and the spreading of European settlements along the East Coast and subsequently into the interior. In addition, the formation stages of this period are marked by the large scale movements of various Bantu-speaking groups in the interior of South Africa, which profoundly influenced the course of European settlement. Finally, the final retreat of the San and Khoekhoen groups into their present-day living areas also occurred in the Historical period in southern Africa.

6.2 The Waterberg: Special Themes.

6.2.1 Early History

The cultural historical landscape of the Waterberg area spans million years with evidence of hominin occupation, Stone Age traditions, Iron Age farmers and historical events. Makapansgat, a deep limestone cave near Mokopane has yielded remains of *Australopithecus africanus* that dates to more than 3 million years BP and also *Homo erectus*, dating to approximately 1 million years BP. However, Earlier Stone Age (ESA) material is scarce on the Waterberg plateau. The Middle Stone Age (MSA) is abundantly represented in the Waterberg area and archaeological excavations at sites such as the Olieboomspoort Shelter in the north-western part of the Waterberg have yielded rich MSA deposits which display a large degree of specialisation and skill in stone working (Van der Ryst 1996). These groups occupied open camps which were situated in the proximity of water sources such as pans, lakes or rivers. There is a noticeable gap in the Waterberg between MSA assemblages and material form the Later Stone Age (LSA), suggesting that the Waterberg may not have seen dense human occupation for a long period of time. However, Later Stone Age groups, including the San hunter gatherers and Khoi herders frequented the area in the last few millennia, and numerous LSA sites have been discovered and excavated. Similarly, LSA evidence such as stone implements, ceramics and a wealth of rock paintings and markings (see Section 6.2.3) are scattered over the plateau.

6.2.2 Later History

Within the last two thousand years, San and Khoi groups were displaced by Iron Age farming communities moving into the Waterberg area, possibly prompted by the spread of tsetse fly into the lowveld areas. Three phases of Iron Age occupation are generally distinguished in the Waterberg (Aukema 1989). The first phase, known as the Eiland tradition, is characterised by herringbone decoration motives on pottery. Little to no stone

walling occurs at sites dating to this phase. On the other hand, sites of the second phase of occupation dating to the Later Iron Age are commonly found on hilltops where they display elaborate stone walling. These settlements could be linked to the arrival of Nguni-speakers (Ndebele) in the region between the 16th and 17th centuries AD. The third phase of Iron Age settlement, dating to the 18th and early 19th century, contains bi and multi chrome (red and black) pottery commonly attributed to a Sotho-Tswana ceramic tradition known as Moloko (see *Sotho-Tswana History* section below).

Early Sotho-Tswana History

Within a larger archaeological context, the Iron Age settlement representations in the form of stone walling located at Klein Kariba can undoubtedly be traced back to ancestral Sotho-Tswana occupation and developments from the sixteenth century AD onwards. As mentioned previously, diagnostic pottery assemblages are commonly used in the South African Iron Age to infer group identities and to trace movements across the landscape. Similarly, the migration of the Sotho-Tswana speakers in South Africa in the 16th century marked a new ceramic style, known as Moloko. The Moloko Tradition can be divided into two phases: an early phase (e.g. Icon) in which sites were usually located at the foot of hills and contained little or no stone walling; and a later phase characterised by extensive stone wall complexes which were often erected on hills. In the Waterberg area, this later phase manifested in the Madikwe ceramic facies with pottery typically displaying stab and fingernail impression decoration motives. At around the 17th century, Madikwe pottery developed into a tradition known as "Buispoort", sites of which display complex and elaborate stone walling such as those documented at Klein Kariba. The stone walls were erected to construct stock byres and to demarcate residential units where pole-and-dagha (clay) huts were placed.

Pottery from the Buispoort Tradition, associated with Sotho-Tswana speakers in the areas, is therefore likely to be found at the Klein Kariba site. In addition, various Sotho-Tswana groups were found in the interior of the Highveld areas of South Africa By the end of the 18th century. These units occupied a large area, from present-day Botswana across large sections of the old Transvaal, the Free State Province into the Northern Cape. Based on Sotho-Tswana oral histories various groups acted as cores from which the Sotho-speaking communities sprouted.

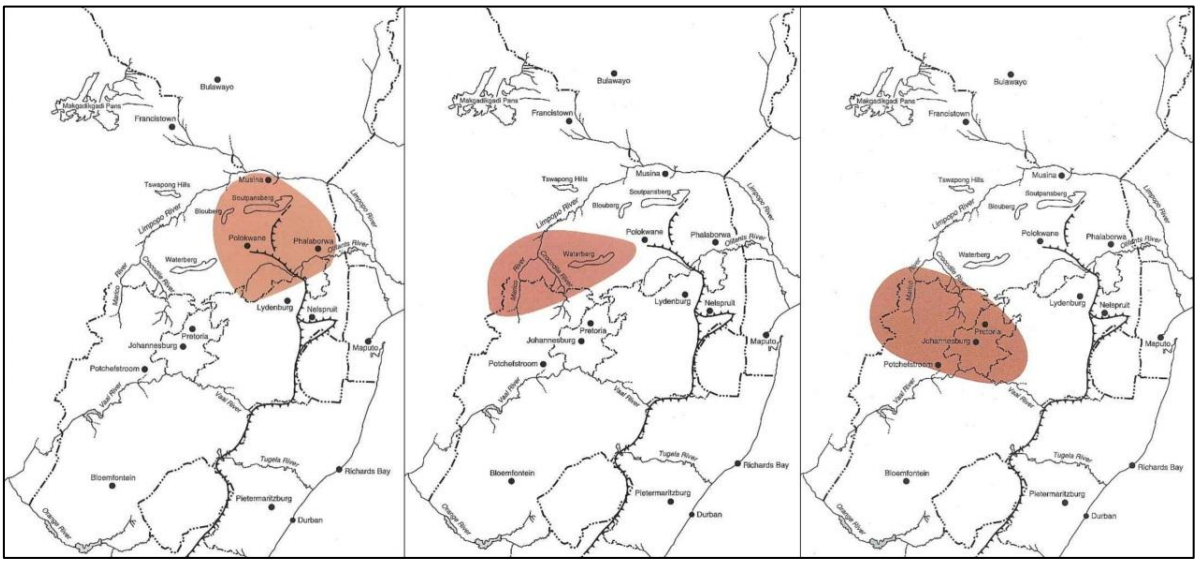


Figure 24: Map detailing the distribution of 16th century Moloko (left), 17th century Madikwe (centre) and 18th century Buispoort tradition sites (After Huffman 2007).

Figure 25: Ceramic decoration motives typical of 17th century Madikwe (left) and later Buispoort (right) facies (After Huffman 2007).

6.2.3 European Occupation and Recent History

The Waterberg was considered remote and inaccessible by early white migrants from the south and, with the exception of a few hunting and trading expeditions passing through, the areas was one of the last regions in the former Transvaal to be permanently occupied by white farmers. Although the first Voortrekker farmers moved into the Waterberg during the 1850's, the region has been increasingly occupied on a regular basis only since the early part of the twentieth century. The early historical period of the area is dominated by the siege of Makapansgat where in September 1854, Chief Makapane and over 1 500 of his people died of hunger, dehydration and injuries after being besieged in the cave by a Boer commando in retaliation for an attack on a Voortrekker settlement. The majority of farms in the Waterberg area were surveyed in the late 1860's as part of the Transvaal government's strategy to settle white farmers in the Waterberg region. At that time, access to the Waterberg plateau was circuitous and difficult with the shortest route extending via Sandrivierspoort near present-day Vaalwater. After a railway line to Vaalwater was completed in the 1920's, maize became an economically viable crop but by the end of the 1960's, slumps in maize prices resulted in many farmers abandoning crop farming in favour of cattle. The rise of eco-tourism and the interest of foreigners in acquiring land for hunting and game viewing over the last decade have led to a recent revival of property prices in the Waterberg and a sharp growth in game ranching activities.

6.2.4 Rock Art of the Waterberg

The Waterberg Plateau is rich in rock art and rock markings and many such sites are still to be described and studied. At many sites "refined" San paintings occur with cruder depictions in red or white paint (sometimes black), painted directly with fingers by later Farmer groups. Numerous paintings of people in trance positions, dance scenes of men and women, men with hunting equipment, a large variety of antelope and other animals, imaginary rain animals, handprints, and geometric designs form part of the contents of the rock art of the Waterberg (Van der Ryst 1998). Two traditions of Rock Art occur in the Waterberg. First the more "naturalised" form of fine-line art, including skilled depictions of animals and people, attributed to San Hunter Gatherers. The

second tradition, often called “Late White” art, is characterised by more geometric, schematic illustrations which includes a large amount of finger painting. This tradition is associated with Iron Age farmers.

7 STATEMENT OF SIGNIFICANCE

7.1 Heritage resources management and conservation

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people have lived in the past – more than 100 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable.* Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

7.2 Categories of significance

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites.

In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

- *Aesthetic value:*

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

- *Historic value:*

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

- *Scientific value:*

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

- *Social value:*

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group.

With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low.

The significance of archaeological sites is generally ranked into the following categories.

Significance	Rating Action
No significance: sites that do not require mitigation.	None
Low significance: sites, which may require mitigation.	2a. Recording and documentation (Phase 1) of site; no further action required 2b. Controlled sampling (shovel test pits, augering), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction
Medium significance: sites, which require mitigation.	3. Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]
High significance: sites, where disturbance should be avoided.	4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism
High significance: Graves and burial places	4b. Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinterment [including 2a, 2b & 3]

A fundamental aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

7.3 Evaluation of Results

As no sites/features of heritage importance were located on the surface within the demarcations of any of the Survey Areas at Klein Kariba, the author this report is of the opinion that no heritage resources will be impacted during construction phases of the rezoning development, provided that no sub-surface deposits occur in this area and management measures for archaeological features in the general landscape, as set out in this document be considered.

7.4 Discussion

The Waterberg area encompasses a rich and varied archaeological and historical landscape that spans across the Stone and Iron Ages into the Colonial period and present-day. It is therefore imperative that cognisance be taken of archaeological material associated with various histories contained in the landscape in order to reduce the possible destruction of heritage remains.

Considering the presence of a large Iron Age site at Klein Kariba, the occurrence of further archaeological remains associated with this period should be anticipated. These remains could include:

- Decorated and undecorated potsherds.
- Iron objects such as spear heads, hoes and bangles.
- Beads made from ostrich eggshell and glass.
- Ash middens and cattle dung deposits and accumulations.
- Elaborate stone walling and site demarcation by means of stone structures, usually round and irregular.
- Copper, iron and gold objects.
- Animal bones and faunal remains.
- Circular stone foundation structures for houses.
- Smaller stone structures such as fireplaces or granary stands.
- Upper and lower grindstones.
- House floors and rubble from hut wall structures.

Should any objects or material of archaeological / historical nature be encountered, all construction activities should be suspended and the archaeological specialist notified immediately.

8 RECOMMENDATIONS

8.1 General Recommendations

The author of this report proposes the following recommendations, based on findings contained in this Phase 1 AIA Report:

- As no Stone Age, Iron Age (Farmer Period) or Historical remains were observed within areas demarcated for development at the Klein Kariba Resort, no immediate further investigation of these surface areas is recommended prior to further developments in the area.
- As an archaeologically important Iron Age site is present in the immediate landscape, a careful watch and brief monitoring process is recommended for all stages of development. Should any subsurface paleontological / archaeological material be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.
- In order minimize impact on the Iron Age site on the south-western portion of the property, it is further recommended that the spatial extent of the site be determined and that a conservation buffer zone of at least 50m be maintained around the site at all times. Further management procedures for this site are suggested below.

8.2 Klein Kariba Archaeology Management

Archaeological site management involves the control of elements that make up the physical and social environment of a site and that have an effect on it. These elements often include the site's physical condition, land use, human visitors, interpretation and monitoring. Site management procedures may be aimed at preservation or, if necessary, at minimising damage or destruction where good management principles aim to preserve the values of the site and retain its significance. It is generally recommended that conservation management plans be developed for all archaeological sites that are open to the public, regardless of their protection status. Here, management involves all measures to protect and preserve the values that make a place culturally significant. Similarly, the proximity of the later Iron Age site to areas demarcated for development at Klein Kariba, as well as the resort's focus on eco and heritage tourism provides a valuable opportunity for the heritage of the area to be developed in terms of such heritage tourism, conservation and management strategies.

It is therefore strongly recommended that a conservation management plan for the Iron Age site be developed in a process separate from the initial archaeological impact assessment, as endorsed by the provincial and national heritage resources authority and the National Heritage Resources Act and/or the National Environmental Management Act.

9 GENERAL COMMENTS AND CONDITIONS

This Phase 1 AIA report serves to confirm that no sites of paleontological, archaeological and historical importance were recorded within areas demarcated for the expansion of infrastructure at Klein Kariba site. However, evaluations and recommendations contained in this report should be adhered to in close consultation with the South African Heritage Resources Agency (SAHRA). Please note that this report is a Phase 1 Archaeological Impact Assessment only and does not include or exempt possible future required heritage impact assessments or mitigation projects.

It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, represent the area's complete archaeological legacy. Many sites/features may be covered by soil and vegetation and might only be located during sub-surface investigations. If subsurface archaeological deposits, artefacts or skeletal material were to be recovered in the area during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately (*cf*. NHRA (Act No. 25 of 1999), Section 36 (6)).

It must also be clear that Heritage Impact Assessment Reports (HIA's) and Archaeological Specialist Reports (AIA's) will be assessed by the relevant heritage resources authority (SAHRA). The final decision rests with the heritage resources authority (SAHRA), which should give a permit or a formal letter of permission for the destruction of any cultural sites.

With reference to the potential impacts that may occur as a result of the operational activities of the proposed development it should be noted that such impacts are considered to be of a similar nature to those related to the construction phase. However certain aspects with regard to the intensity of the impact are considered to change as a result of the sites proximity to the proposed developments infrastructure.

10 BIBLIOGRAPHY

Acocks,J.P.H. 1988. Veld types of South Africa (3rd edition). Memoirs of the Botanical Survey of South Africa 57: 1-146

Aukema, J. 1989: Rain-making: a thousand year-old ritual? *South African Archaeological Bulletin 44: 70-72*.

Boeyens, J.C.A., Van der Ryst, M.M., Coetzee, F.P., Mathers, K. & Küsel, S.U. 1996. In: The Later Stone Age History of the Waterberg with special reference to Goergap Shelter. Department of Anthropology and Archaeology. University of South Africa

Deacon,J. 1996.Archaeology for Planners, Developers and Local Authorities. National Monuments Council. Publication no. P021E.

Deacon, J.1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. In: Newsletter No 49, Sept 1998. Association for Southern African Archaeologists.

Deacon HJ and J. Deacon (1999): Human beginnings in South Africa: uncovering the secrets of the Stone Age. David Philip. Cape Town

De Klerk, A. 2003. The Waterberg Biosphere Reserve: a land use model for ecotourism development. Doctoral Thesis: University of Pretoria.

Evers,T.M. 1988. The recognition of Groups in the Iron Age of Southern Africa. PhD thesis. Johannesburg: University of the Witwatersrand.

Hall, M. 1987. The Changing Past: Farmers, Kings & Traders in Southern Africa 200 – 1860 Cape Town, Johannesburg: David Philip

Huffman, T.N. 2007. Handbook to the Iron Age. Pietermaritzburg: University of Kwazulu-Natal Press

Maggs, TM.O. 1976. Iron Age Communities of the Southern Highveld. Pietermaritzburg: University of Natal Press.

Mason, R.J. 1962. The Prehistory of the Transvaal. Johannesburg: University of the Witwatersrand Press.

Mitchell, P. 2002. The Archaeology of Southern Africa. Cambridge Africa Collection. Cambridge: Cambridge University Press.

Schlüter, T. 2005. Geological Atlas of Africa, with Notes on Stratigraphy, Tectonics, Economic Geology, Geohazards and Geosites of Each Country. London: Springer

Sharer, A.J & Ashmore, W 1979. The Nature of Archaeological Data California: Benjamin/Cummings Publishing

Swanepoel, N. et al (Eds.) 2008. Five hundred years rediscovered. Johannesburg: Wits University Press

Van der Ryst, M.M. 1996. The later Stone Age Prehistory of the Waterberg, with special reference to Goergap Shelter. MA Thesis: Department of Archaeology, University of the Witwatersrand.

Van der Ryst, MM. 1998. The Waterberg Plateau in the Northern Province, RSA, in the Later Stone Age. British Archaeological Reports (BAR) International Series 715. Oxford Press.

Human Tissue Act and Ordinance 7 of 1925, Government Gazette, Cape Town

National Resource Act No.25 of 1999, Government Gazette, Cape Town