

# ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED KALKHEUVEL HOUSE DEVELOPMENT,  
GAUTENG PROVINCE

**Client:**

Eco Assessments

**Client info:**

Mark Custers

**E – mail:** [mark@ecoassessments.co.za](mailto:mark@ecoassessments.co.za)



**HCAC - Heritage Consultants**

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: [jaco.heritage@gmail.com](mailto:jaco.heritage@gmail.com)

Report Author:

Mr. J. van der Walt

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**CLIENT:** Eco Assessments


**CONTACT PERSON:** Mark Custers

**LEADING CONSULTANT:** **HCAC** - Heritage Contracts and Archaeological Consulting CC (HCAC)

**CONTACT PERSON:** Jaco van der Walt  
Heritage Contracts and Archaeological Consulting  
Professional Member of the Association of Southern African Professional Archaeologist (#159)

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**SIGNATURE:**



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## EXECUTIVE SUMMARY

**Site name and location:** The proposed Kalkheuvél development is located on Portion 7, 27 & 28 of the farm Kalkheuvél 493-JQ, Gauteng.

**1: 50 000 Topographic Map:** 2527 DD.

**EIA Consultant:** Eco Assessments

**Developer:** Bothongo Group

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

**Contact person:** Jaco van der Walt      Tel: +27 82 373 8491    E-mail jaco.heritage@gmail.com.

**Date of Report:** 13 July 2016.

### Findings of the Assessment:

HCAC was appointed to assess the development footprint of a new residential dwelling and boma in terms of the archaeological component of Section 35 of the NHRA as part of the basic assessment for the project. No Stone Age artefacts were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly no sites of archaeological significance were recorded by other studies in the larger area (e.g. Fourie, 2008. Van der Walt, 2007, 2008, 2016). No further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), several standing structures occur surrounding the study area. None of these area older than 60 years and will also **not be** affected by the proposed project. In terms of Section 36 of the Act no burial sites were recorded in the study area. Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the Environmental Management Plan (EMP).

The proposed new house development is located on an existing farm erf and adjacent buildings that altered the sense of place. We are of the opinion that the project will have a negligible impact on the larger Cradle of Humankind World Heritage Site (COHWHS) and heritage resources that encompasses a large area of some 47 000 ha. On a local scale no impact is foreseen on any of the known heritage resources within the Cradle of Humankind (COH).

Due to the lack of significant heritage features in the study area there is from an archaeological point of view no compelling reason why the development cannot commence based on approval from the South African Heritage Resource Agency (SAHRA).

### General

The possibility of unmarked or informal graves and subsurface finds cannot be excluded. If any possible finds are made during construction, the operations must be stopped and a qualified archaeologist contacted for an assessment of the find/s.

**Disclaimer:** *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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

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**ABBREVIATIONS**

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

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

**GLOSSARY**

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

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

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

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

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)



## 1 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the proposed Kalkheuvel Project as part of the Basic Assessment process.

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

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

General site conditions were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the SAHRA for review.

## 1.1. Terms of Reference

### Desktop study

Conduct a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

### Field study

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

### Reporting

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

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

## 1.2. Archaeological Legislation and Best Practice

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

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

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2) (b) of the NEMA and section S. 39 (3) (b) (iii) of the MPRDA.

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

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

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

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

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

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

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

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

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

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

### 1.3. Description of Study Area

#### 1.3.1 Location Data

The proposed Kalkheuvél development is located on Portion 7, 27 & 28 of the farm Kalkheuvél 493-JQ (Figure 1). The proposed site is relatively flat with the major features being a fresh water spring which leads to a small dam.

The study area is located at 25° 51' 12.3334" S, 27° 52' 39.6056" E. The vegetation is described as Carletonville Dolomite Grassland. The site is directly accessible from a dirt track leading off the R512. The surrounding land uses consist of small holdings and farms used for farming cattle and game.

1.3.2. Location Map

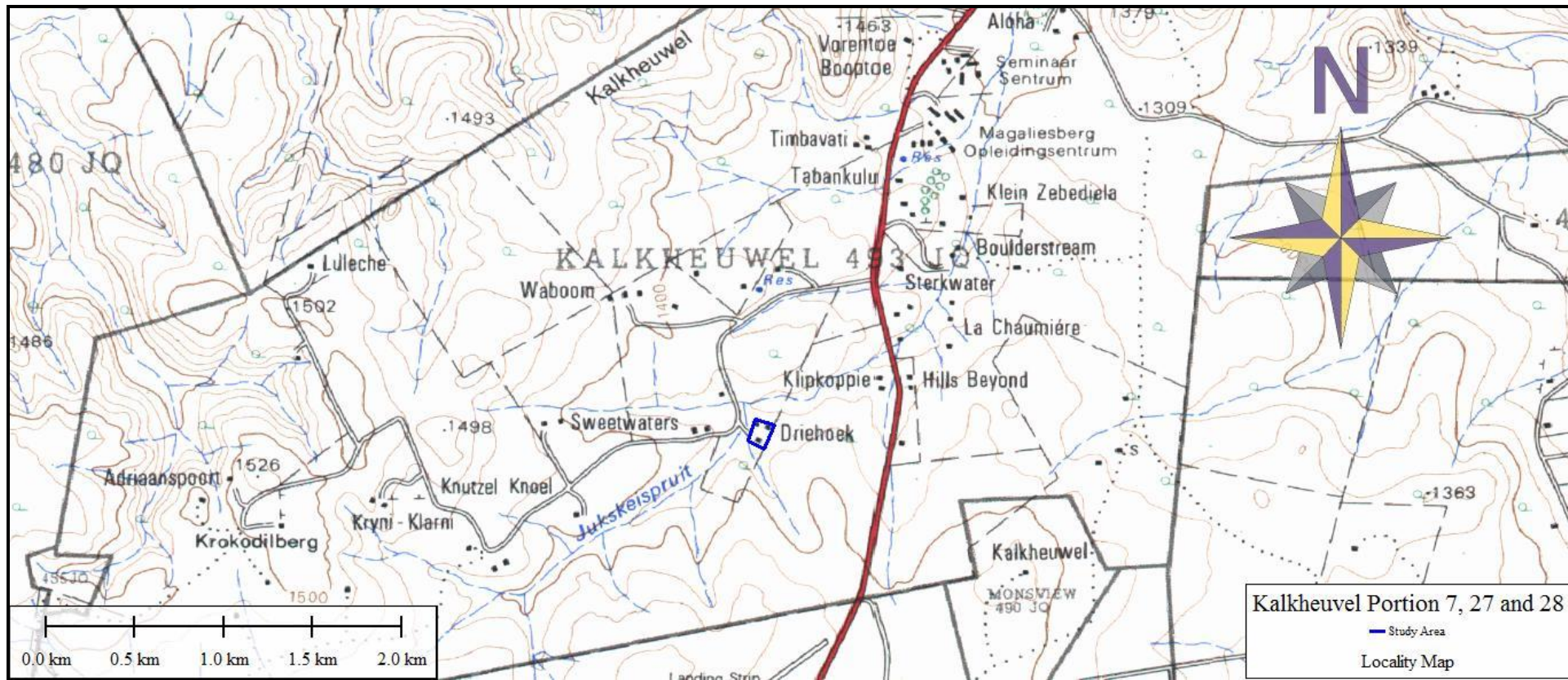


Figure 1. Location map

## **2. APPROACH AND METHODOLOGY**

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

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

The first phase comprised desktop, scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area. The following approach was followed:

#### **2.1.1 Literature Search**

This was conducted by utilising data stored in the national archives and published reports relevant to the area. The aim of this is to extract data and information on the area in question.

#### **2.1.2 Information Collection**

SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

#### **2.1.3 Consultation**

No public consultation was done by the author as this was done independently as part of the BA. During this process no heritage concerns were noted. Informal communication with Stephan who manages the property confirmed that he is not aware of any heritage sites or graves on the property.

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

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

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

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

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

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the proposed development was conducted. The study area was surveyed by means of vehicle and extensive pedestrian surveys on 5 July 2016. The survey was aimed at covering the proposed development footprint. Track logs of the areas covered were taken (Figure 2).



Figure 2. Track logs of the areas surveyed indicated in black with the proposed development indicated by yellow pins.

### **2.3. Restrictions**

Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. This report only deals with the footprint area of the proposed development as indicated in the location map.

Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

### **3. NATURE OF THE DEVELOPMENT**

The proposed development to Portion 27 and 28 is to extend the existing driveway and timber deck walkway towards a new house, east of the existing house. Further, the plans indicate the building of a new boma on the northern edge of the new house located on Portion 7. All of these developments fall within the boundary wall and circumvent the fresh water spring with leads to a small dam.

These developments will require digging a foundation as well as the relocation of a large tree as shown in the architectural site designs. By digging a foundation one could possibly encroach upon a cave entrance or a landscape deposit and as such a thorough survey of the proposed area was required.



#### 4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

##### 4.1 Databases Consulted

21 Previously recorded sites are on record for the 2527 DD 1: 50 000 sheet at the Wits archaeological database. These sites consist of Stone Age (ESA, MSA and LSA), cemetery and hominin sites. None of these sites are located within the project area but provide a background to the sites known in the larger area.

According to the South African Heritage Resource Information System (SAHRIS) database several CRM studies were conducted in the immediate vicinity of the proposed development. CRM reports in the area include the following studies that were consulted for this report:

Author	Year	Description	Findings
Van Schalkwyk, J.	1998	A survey of cultural resources for the Lomond/ Scheerpoort powerline, Broederstroom area, West of Pretoria	No heritage sites were identified
Van Schalkwyk, J	2004	Blair Atholl Country Estate Draft Scoping Report.	ESA Stone tools as well as stone walled sites.
Kusel, U.	2007	Cultural Heritage resources impact assessment of Portion 29 of the farm Lindley 528 JQ Lanseria.	No heritage Sites were identified.

##### *Genealogical Society and Google Earth Monuments*

Two cemeteries are indicated for the farm Kalkheuvel. Both these are located on other portions of the farm and will not be impacted on by the proposed development.

## 4.2. Background of the greater study area

### 4.2.1. Heritage resources in the Cradle of Human Kind

The fossil Hominid sites of Sterkfontein, Swartkrans, Kromdraai, and Environs were named a UNESCO World Heritage site in 1999 (figure 3). More commonly known as the Cradle of Humankind (hereafter COH), the area is a geological outcropping of the Malmani Dolomites (see Herries et al., 2009; Dirks & Berger, 2013) that preserve the fossil remains of distant human ancestors, as well as those of a prolific array of fauna. The COH is approximately 50 minutes' drive outside of Johannesburg. The cave sites in the area range in age from as early as 4.5Ma (Waypoint 160, Bolts Farm, Gommery et al., 2008) to as recent as 70Ka (e.g. Plovers Lake; Thackeray and Watson, 1994; Herries et al., 2009). Further, there are a number of modern human archaeological sites that overlay the dolomites due to the high occurrence of raw materials such as chert, quartzite, and quartz in the area (see Mason, 1951). These surface deposits have largely been overlooked in comparison to the Plio-Pleistocene fossil deposits.

The COH gains Outstanding Universal Value (OUV) due to its' abundance of hominin fossil (human ancestors) remains from three genera: *Australopithecus*, *Homo* and *Paranthropus*. Alongside the human ancestors we find stone tools ranging from the Oldowan through to the Later Stone Age, as well as bone tools. Other than the hominin material, there are innumerable faunal fossils including the giant baboon *Dinopithecus* (Gilbert, 2007) and the false sabre-toothed cat *Dinofelis* (Werdelin & Lewis, 2001).

Kalkheuveld West (Northwest Province) lies towards the northern most border of the COH. The only published fossil deposit on the property is Haasgat (see Adams, 2012), albeit there are other known deposits that have yet to be investigated (e.g. Leopard Rock Shelter, SAHRA Permit ID 2138). The property in question for this AIA is Portion 7, 27 and 28, which is situated on the eastern most border of the Kalkheuveld West gated community towards Pelindaba Road. Any proposed developments in the COH could potentially cause irreversible damage to the World Heritage status of the area and the irreplaceable artefacts therein (Baker 2016).

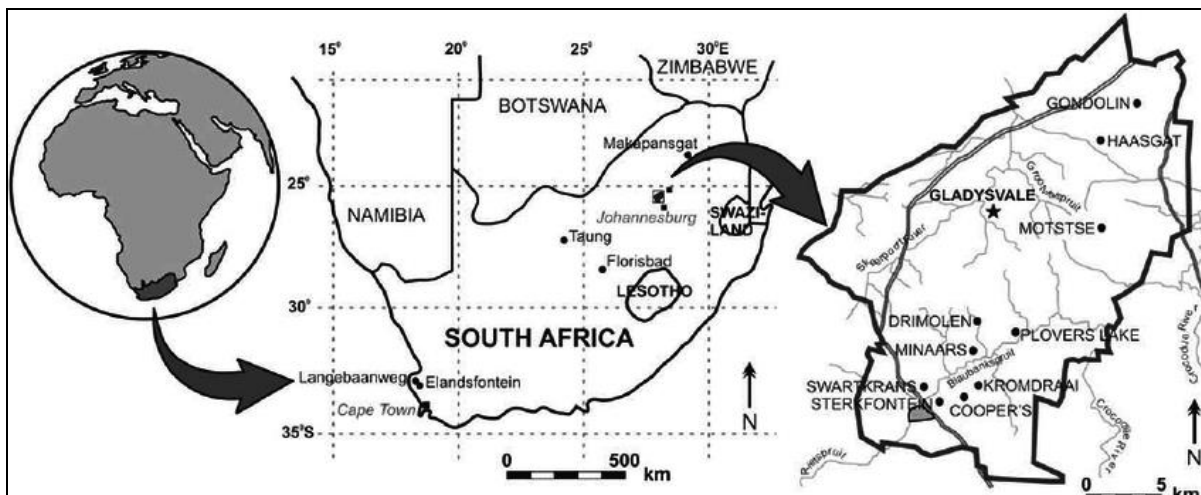


Figure 3. A map showing the Cradle of Humankind with the bulk of the fossil assemblages as per the UNESCO World Heritage listing of 1999 (image from Backwell et al., 2009).

To the north of the study area at Broederstroom is a well-known early Iron Age Site (AD 550 – 700). This is one of the earliest known residential sites of food producing communities south of the Limpopo. Finds at this site include remains of individuals, hut floors, iron smelting furnaces and artefacts. The site was declared a Provincial Heritage Site in 1980 (SAHRIS).

Broederstroom was founded in 1903 with the opening of a trading post in the area. The history of this area is mainly nestled in farming and commercial activities and this is emphasized by important 19th and early 20th century farm and store buildings located in this area (Marais –Botes 2011).

## 5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

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

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

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

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

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

### 5.1. Field Rating of Sites

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

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

## 6. BASELINE STUDY-DESCRIPTION OF SITES

The study area consists of an agricultural holding and the proposed development footprint is characterised by cultivated lawns, a residential dwelling and associated outbuildings (according to personal communication with the manager of the property the buildings were constructed in the past 20 years. Archaeological visibility is moderate (Figure 3 – 6). The site is situated on the northern border of the Cradle of Human Kind (Figure 8), however no traces of any archaeological remains were identified during the survey within the study area.

A search on archaeological data bases also yielded no known sites within the study area and no heritage significant sites were identified during the desktop study. Studies adjacent to the study area also did not record any archaeological sites of significance (Van Schalkwyk 1998, Kusel 2007). The study area comprises an erf with existing buildings and no significant cultural landscapes or viewscales were noted during the fieldwork.

From a Paleontological point of view it was clear that the ground on which the foundation would be laid was colluvium. Assumedly the construction of the original house had led to a disturbance of the topsoil in the immediate area and this disruption is still evident today. A geological bulk sample had been done prior to the site visit overturned sediment was inspected. The soil was not decalcified breccia, nor did it have any artefacts in it.

There were clear dolomite outcrops towards the eastern line of the property. Inspection of the dolomite showed no interesting geological features, such as stromatolites or chert bands. Moreover, there was no makondo features or breccia deposits on any of the exposed dolomites. There are no cave entrances in the nearby vicinity of the house and as such it would not appear that there were any potential fossil deposits.

Of interest was the freshwater spring in front of the existing house. The spring has formed natural etching onto the exposed dolomite in its immediate vicinity and has provided a natural water source for the vegetation and fauna on the property. There was a proposition to do exploratory geological boring in the area to test for fossil deposits. This is advised against. Boring could lead to a disruption in the spring and its' underwater pathways. If additional information is required on the potential deposits below the surface, non-invasive techniques (e.g. ground penetrating radar) would be preferred as a beginning methodology prior to the more destructive boring technique.

### 6.1. Impact assessment

The area designated for the expansions of the existing house is not on any discernible fossil or archaeological deposits. As such, the plans for the expansion pose no immediate impact problems. The proposed project will not impact on any of the heritage attributes of the WH property. The development area holds no OUV and using the Icomos Impact Assessment table the impact of the proposed development on the WH property is Neutral.

Table 1. ICOMOS System for assessing/ evaluating Impact.

VALUE OF HERITAGE ASSET	SCALE & SEVERITY OF CHANGE/IMPACT				
	Neutral	Slight	Moderate/ Large	Large/ Very Large	Very Large
For WH properties Very High – attributes which Convey OUV	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT (EITHER ADVERSE OR BENEFICIAL)				
	Neutral	Slight	Moderate/ Large	Large/ Very Large	Very Large
FOR OTHER HERITAGE ASSETS OR ATTRIBUTES	SIGNIFICANCE OF IMPACT (EITHER ADVERSE OR BENEFICIAL)				
Very High	Neutral	Slight	Moderate/ Large	Large/ Very Large	Very Large
High	Neutral	Slight	Moderate/ Slight	Moderate/ Large	Large/ Very Large
Medium	Neutral	Neutral/Slight	Slight	Moderate	Moderate/ Large
Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
Negligible	Neutral *Kalkheuvel Development*	Neutral	Neutral/ Slight	Neutral/ Slight	Slight



Figure 4: General site conditions.



Figure 5: General site conditions.



Figure 6: General site conditions..



Figure 7: General site conditions.



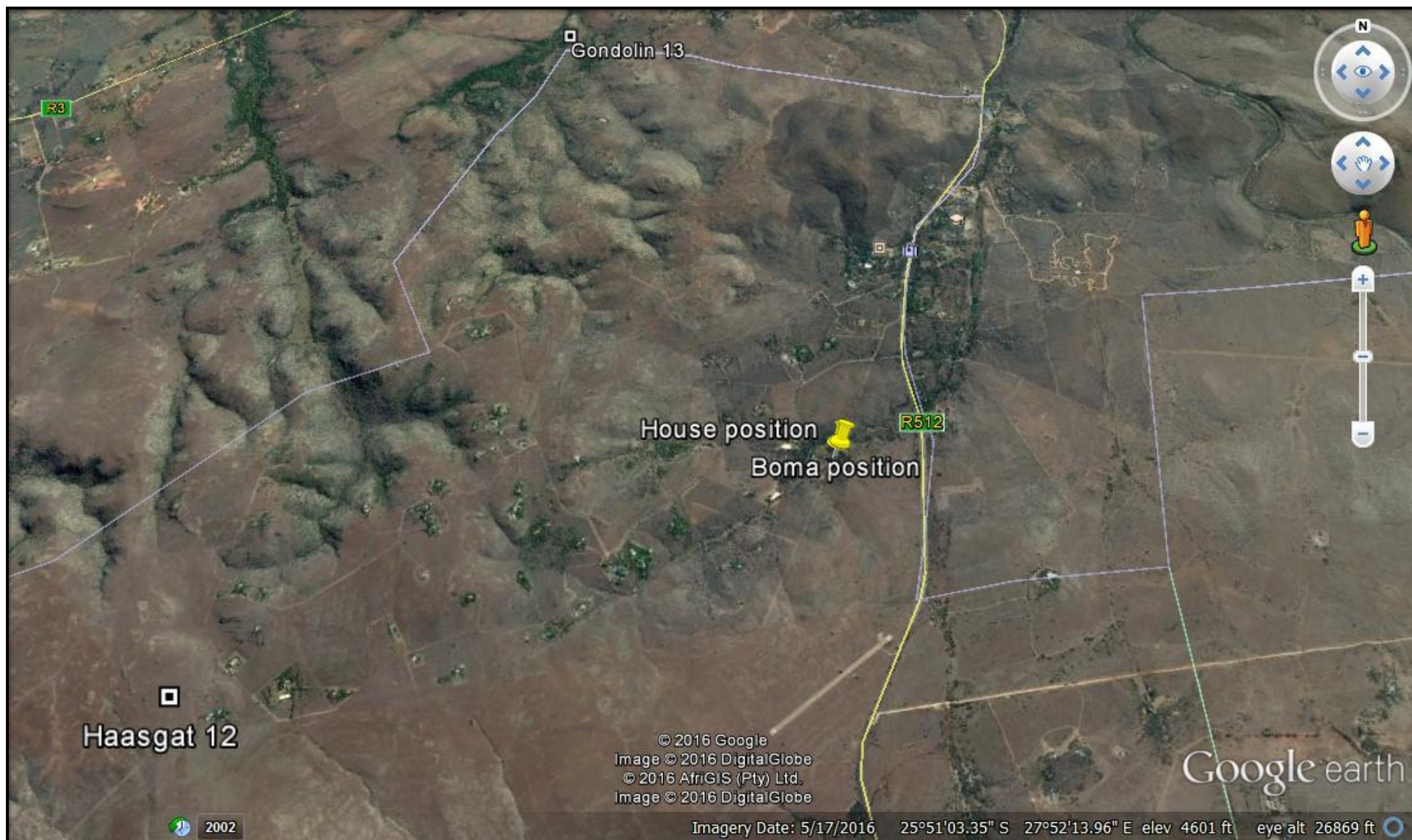


Figure 8. Google Image indicating the study area in relation to some of the sites within the COH.

## 7. CONCLUSIONS AND RECOMMENDATIONS

The proposed project consists of the construction of a new residential dwelling, expansion of the existing driveway and a boma. HCAC was appointed to assess the study area in terms of Section 35 of the NHRA. The assessment was conducted under Section 38 (8) of the NHRA (Act No 25 of 1999) and due to the lack of heritage features in the development footprint a full HIA was deemed superfluous.

The area designated for the expansions of the existing house is not on any discernible fossil or archaeological deposits. As such, the plans for the expansion pose no immediate impact problems. No further mitigation is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the area to be developed. The study comprises an erf with existing structures that are less than 60 years old and all of these developments fall within the boundary wall. These developments have altered the sense of place. Although the general area is very scenic and the important cultural landscape of the COH should be considered, the proposed development will not directly affect any of the heritage attributes inside the COH. We are of the opinion that the project will have a negligible impact on the larger COHWHS and heritage resources that encompasses a large area of some 47 000 ha. On a local scale no impact is foreseen on any of the known heritage resources within the COH and will not affect OUV of the WH property and hence have no threat or risk to the WH status.

In terms of Section 36 of the Act no burial sites were recorded. Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP:

### Chance find procedure

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

### 7.1 Reasoned Opinion

From a heritage perspective the proposed project is acceptable. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the development will not impact negatively on the archaeological record of the area and will not affect OUV of the WH property and hence have no threat or risk to the WH status.

If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools, and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded, but can be easily mitigated by preserving the sites *in-situ* within the development.

### 8. PROJECT TEAM

Jaco van der Walt, Project Manager

Stephanie Baker, Palaeo Anthropologist

### 9. STATEMENT OF COMPETENCY

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

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

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