

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED VENBECK PHALABORWA FILLING STATION
LIMPOPO PROVINCE

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Tekplan Environmental

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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.

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- Recommendations delivered to the Client.

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SIGNATURE: _____

EXECUTIVE SUMMARY

Site name and location: The proposed Venbeck Phalaborwa Filling Station development is located on Portion 52 of the farm Schalk 3 KU. The property is located outside Namakgale on the corner of the roads R530 and D3786 in the Ba-Phalaborwa Local Municipality area

1: 50 000 Topographic Map: 2331 CC.

EIA Consultant: Tekplan Environmental

Developer: Venbeck CC

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

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Date of Report: 23 January 2017

Findings of the Assessment:

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. Similar to other surveys in the immediate vicinity of the study area (Fourie 2008, Roodt & Stegmann 2012) no archaeological sites of significance were recorded within the study area although a pipeline project close to the study area have exposed subsurface skeletal. Furthermore, the development footprint is located on the paleo riverbank of the Olifants River and quartzite pebbles are found in abundance in the larger area. Several cobbles showing possible flaking was noted in the road reserve but no *fossil majeure* pieces were recorded, it is also uncertain if these are anthropogenic or a result of the extensive ground moving activities (including historical mining) in this area. It is therefore recommended that a chance find procedure is implemented for this project. According to the SAHRIS palaeontological sensitivity map the area is indicated as of insignificant/ zero paleontological significance and no further studies are required in this regard.

In terms of the built environment (Section 34), no standing structures older than 60 years occur in the study area and no grave sites (Section 36) were recorded in the study area. The larger area is characterised by mining and agricultural activities (mainly game ranching). Although the area is scenic the site has already been impacted by the development of a liquor store as well as filling station infrastructure and no significant cultural landscapes or viewsapes were noted during the fieldwork.

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 SAHRA.

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ABBREVIATIONS

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

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

GLOSSARY

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

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

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

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

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the proposed Venbeck Phalaborwa Filling Station 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 site is located on Portion 52 of the farm Schalk 3 KU at 23° 59' 06.8260" S, 31° 04' 15.8984" E. The property is located outside Namakgale on the corner of the roads R530 and D3786 in the Ba-Phalaborwa Local Municipality area (Figure 1) approximately 8.4 km to the south west of Phalaborwa town. The site is directly accessible from the R35 that also forms the eastern boundary of the site. The site is flat and located within the Phalaborwa Sandy Mopaniveld vegetation type (Mucina & Rutherford 2006). The study area measures approximately 0.32 hectares.

1.3.2. Location Map

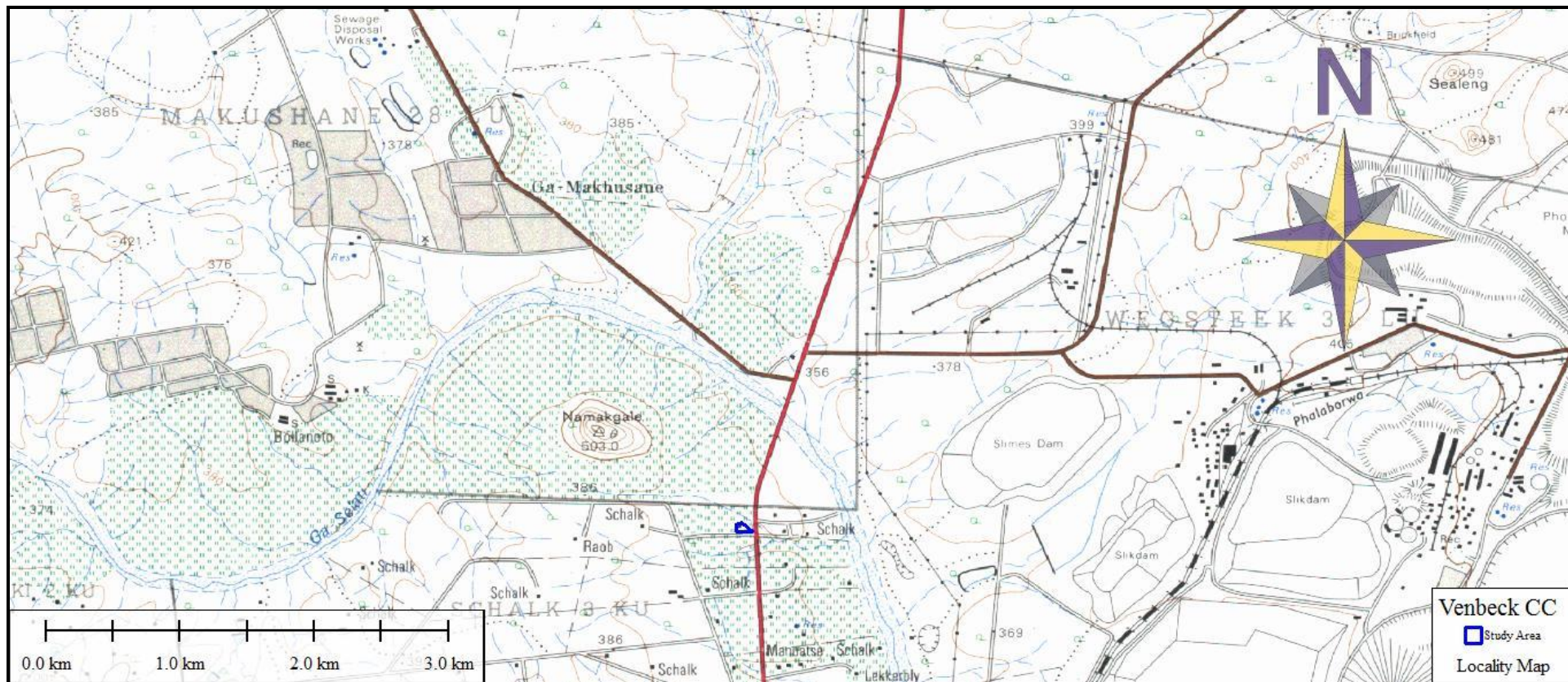


Figure 1: Location map

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 the public consultation process conducted by the EAP no heritage concerns were raised.

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 in the 16th of November 2016. The survey was aimed at covering the proposed development footprint, focussing on specific areas on the landscape that would be more likely to contain archaeological and/or other heritage remains like drainage lines, rocky outcrops as well as slight elevations in the natural topography. Track logs of the areas covered were taken (Figure 2).



Figure 2: Track logs of the areas surveyed indicated in black with the development footprint indicated in blue.

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 project entails the proposed construction of a filling station. 92 000 liter tanks will be installed underground for the storage and handling of dangerous goods for retail purposes.

The following tanks will be installed:

- 2x 23 000 liter petrol
- 2x 23 000 liter diesel

4. BACKGROUND OF THE STUDY AREA.

4.1 Databases Consulted

Author	Year	Project	Findings
Hutton, M.	2014	Proposed Construction of a 2.71km Pipeline on Portion 1 of the Farm Makushane Location 28 LU and on erven 2058 and 2060 Phalaborwa Ext. 5 in the Phalaborwa Municipality, Mopani District, Limpopo Province.	One grave site was identified. Later additional skeletal material was uncovered during construction of the pipeline.
Gaigher, S.	2014	Heritage Impact Report for the Proposed Establishment of a Tourist Lodge and Staff Village at Letaba Ranch Game Reserve, near Phalaborwa, Limpopo Province	No Heritage resources were identified in the two sites under investigation.

Genealogical Society and Google Earth Monuments

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

4.2. Brief background to the study area

4.2.1. The Stone Age

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contains sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. For Cultural Resources Management (CRM) purposes it is often only expected/ possible to identify the presence of the three main phases.

Yet sometimes the recognition of cultural groups, affinities or trends in technology and/or subsistence practices, as represented by the sub-phases or industrial complexes, is achievable (Lombard 2011). The three main phases can be divided as follows;

- Later Stone Age; associated with Khoi and San societies and their immediate predecessors. Recently to ~30 thousand years ago
- Middle Stone Age; associated with Homo sapiens and archaic modern humans. 30-300 thousand years ago.
- Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. 400 000-> 2 million years ago.

Studies in the Kruger National Park to the east have documented Middle and Late Stone Age sites (Pistorius 2007). The LSA is also represented in the greater area by the San rock paintings and engravings in the Mohlapiitse River valley in the Wolkberg (Changuion 2008). To the west of the study area excavations confirmed the ESA occupation in the region at sites such as Makapansgat (Bergh 1999). No Acheulian sites are on record near the project area, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site.

4.2.2. The Iron Age (AD 400 to 1840)

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The first 1,000 years is called the Early Iron Age.

As mixed farmers, Iron Age people usually lived in semi-permanent settlements consisting of pole-and-daga (mud mixed with dung) houses and grain bins arranged around a central area for cattle (Huffman, 1982). Usually, these settlements with the 'Central Cattle Pattern' (CCP) were sited near water and good soils that could be cultivated with an iron hoe. For the project area, archaeological sites such as these are unlikely to occur except along river terraces.

The Middle Iron Age spans the 10th to the 13th Centuries A.D. and includes cultures such as K2 and Mapungubwe. The Late Iron Age began in the 14th Century up to the colonial period and includes traditions such as Icon and Letaba (Hutten 2014). Sotho/Tswana groups arrived in the region during the following century and the ceramic style was collectively named Moloko (Evers 1983). Huffman renamed the first phase of Moloko to the Icon facies. Sites with Icon type pottery extend north and south of the Soutpansberg and westwards across the study area and northwards into Botswana. Icon sites range from 1300 - 1450 AD. The second phase of Moloko can be divided into the Letsibogo-, Madikwe- and Olifantspoort-facies of which the Letsibogo facies is most relevant to the study area (\pm 1500 – 1700 AD). The Letsibogo facies is poorly documented, but occurs along the Limpopo River to the west and south of the confluence with the Shashe (Huffman 2007). The western parts of Limpopo Province are known for large Sotho-Tswana sites that have been the focus of intensive archaeological investigations (Evers 1983; Mason 1986; Pistorius 1992, Hutten 2014). The Ba Birwa settled in the region from the 1700's (Bonner & Carruthers 2003). The Ba-Tlokwa (from the east), Bagananwa (from the west and south) and Ndebele (from the north) had periodic influences on the Ba-Birwa from the study area through conflict, trade and intermarriage during the 18th and 19th Centuries. The Bagananwa group settled in the Blouberg region (to the east) during the early 1800's. The Bagananwa originated from the earlier Bahurutshe chiefdom further to the south (Rustenburg/Zeerust). After their split with the Bahurutshe these people moved to Shoshong and then to Tshwapong in Botswana (Bonner & Carruthers 2003, Hutten 2014).

4.2.3. Historical Period

Schalk 3 KU is located outside Namakgale in the Ba-Phalaborwa Local Municipality area, Limpopo Province. Portion 52 (previously known as Portion 9) of the farm is currently owned by Venbeck CC, who purchased the property in 1996. The total property is 11.5732 hectares in extent (Windeed Search Engine 2017).

The farm under investigation is located about 8 km south west of Phalaborwa. This town, which used to be located in the Letaba district, was built on the site of centuries old mining operations. The Letaba district took its name from the Letaba River, which rises near Haenertsburg at the northern extremity of the Drakensberg and flows eastwards for almost 100 km to its confluence with the main stream near the border of Mozambique. Its name is derived from the Northern Sotho *le hlaba*, meaning “sandy river” (Raper 1983: 277, 364).

Phalaborwa was laid out on the farm Laaste and proclaimed in July 1957. The name is said to mean “it is better here than in the south”, referring to the peaceful existence refugees enjoyed there after fleeing from the Swazi and Zulu further south (Raper 1983: 364).

Since the mid-1800s up until the present, South Africa has been divided and re-divided into various districts. The district of Soutpansberg was established in 1848, and the area of interest, near the present day town of Phalaborwa, formed part thereof. This remained the case up until 1902, when the area under investigation would have formed part of the magisterial district of the Lowveld within the Soutpansberg district. In 1929 the Letaba district was proclaimed and Phalaborwa formed part thereof. This remained the case up until 1990, when the Phalaborwa Magisterial district was proclaimed. As of 1994 the farm was located in the new province of Limpopo (Bergh 1999: 17, 20-27).

Note that, prior to 1950 the farm under investigation was known as Schalk 204.

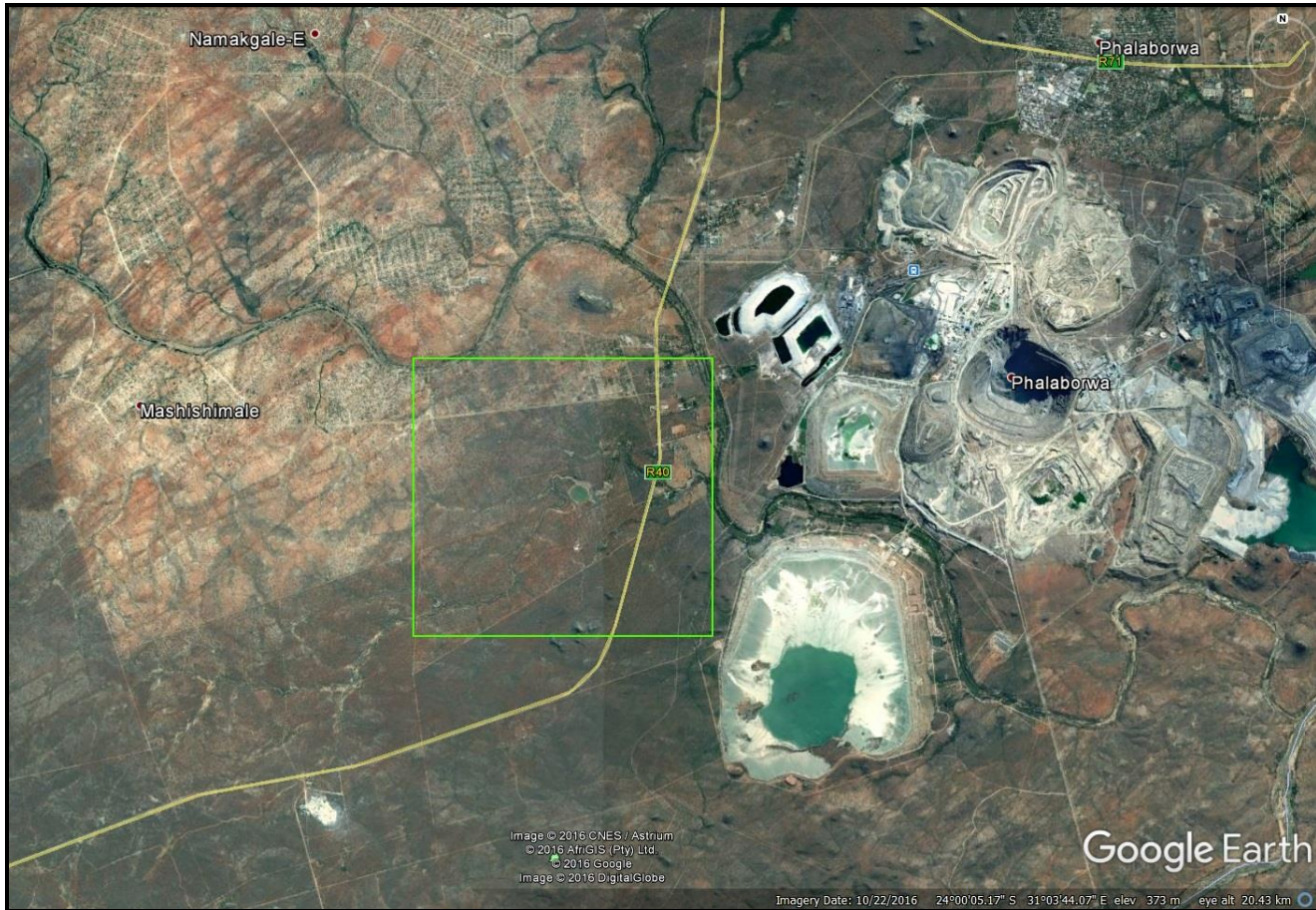


Figure 3. Google Earth image showing the estimated location of the farm Schalk 3 KU (green border) (Google Earth 2016).

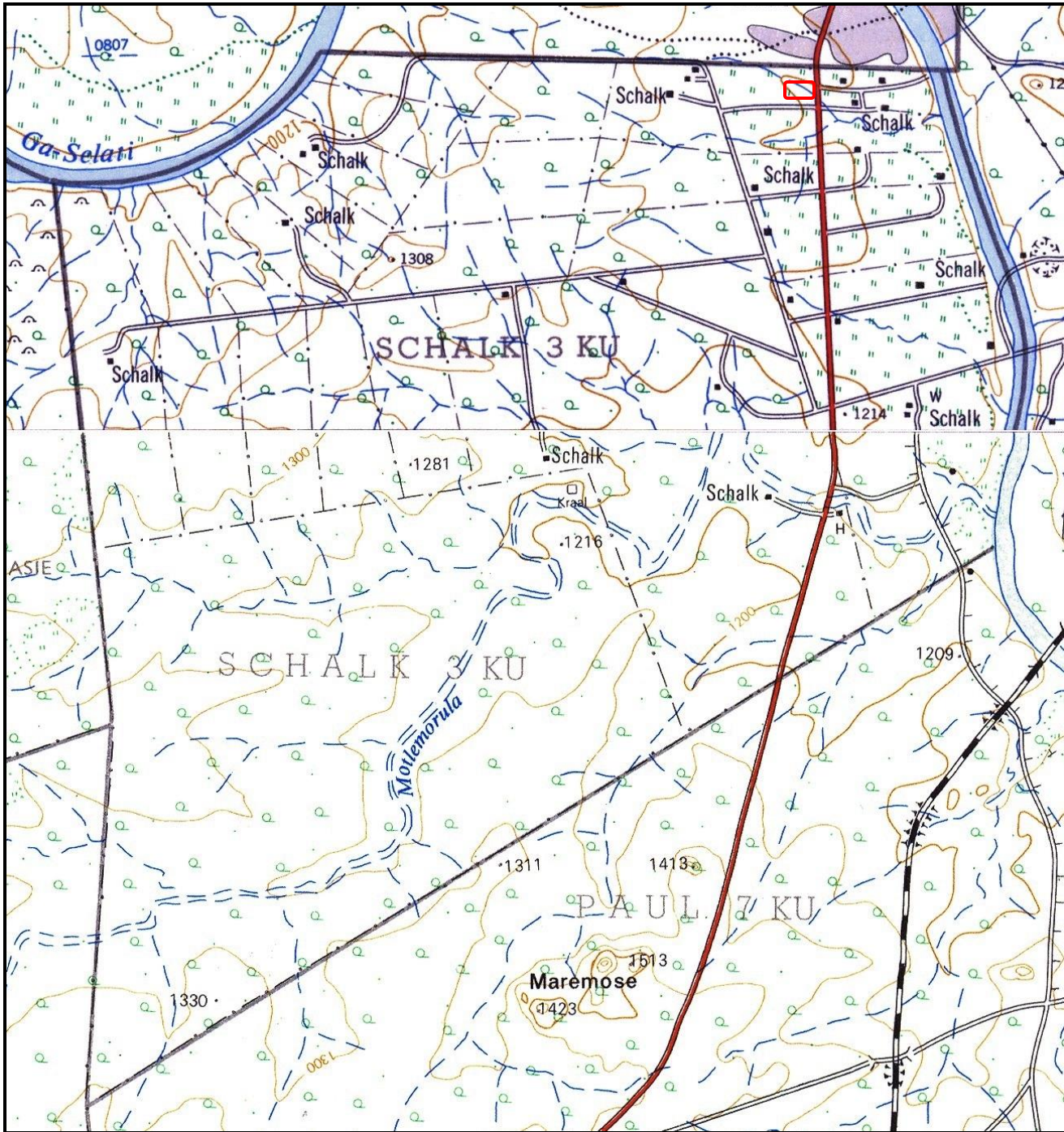


Figure 4.1968-1970 Topographical map of Schalk 3 KU (Topographical map 1968; Topographical map 1970). Approximate location of the development footprint indicated in red.

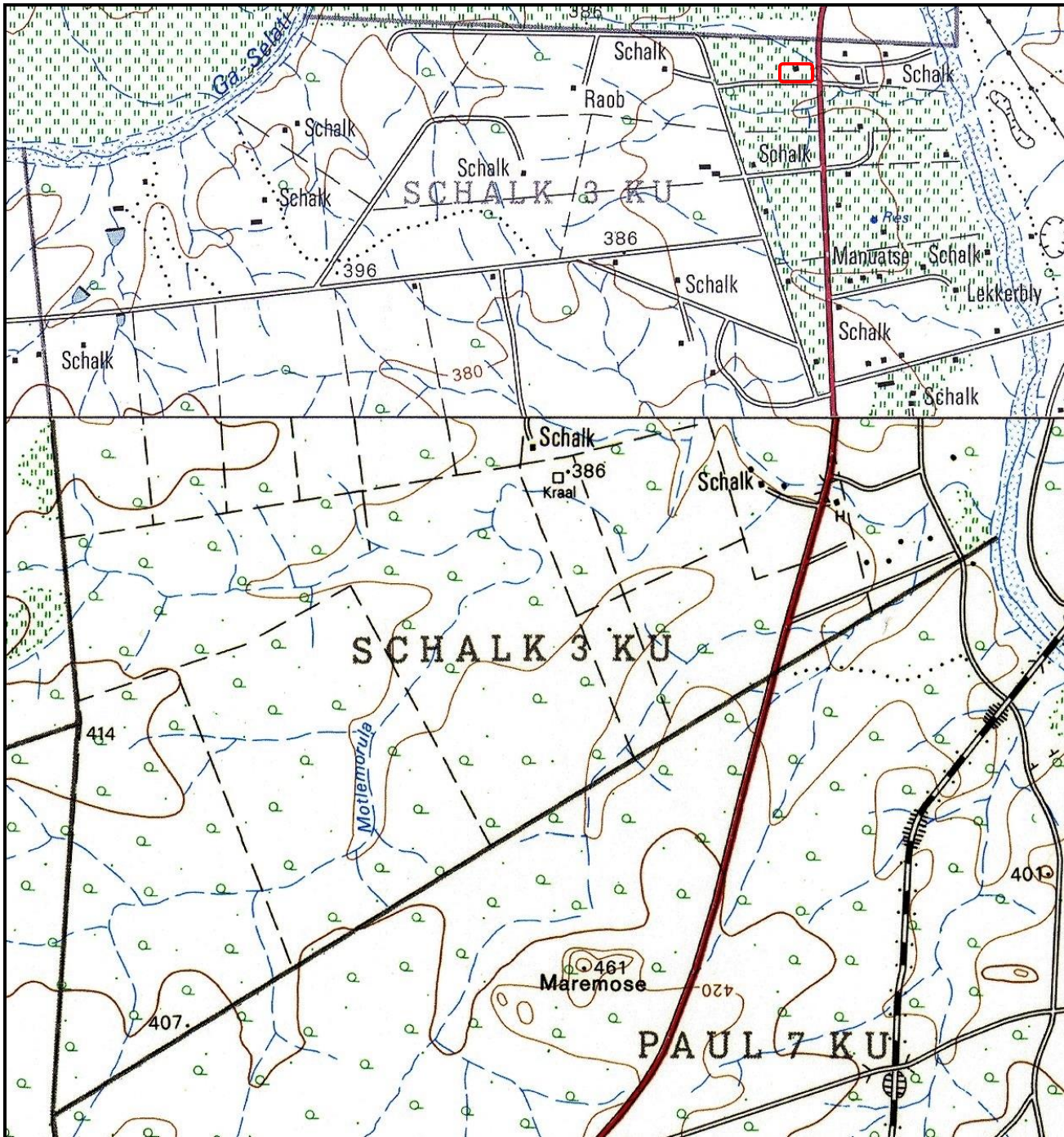


Figure 5.1986 Topographical map of Schalk 3 KU (Topographical Map 1986; Topographical Map 1986). Approximate location of the development footprint indicated in red.

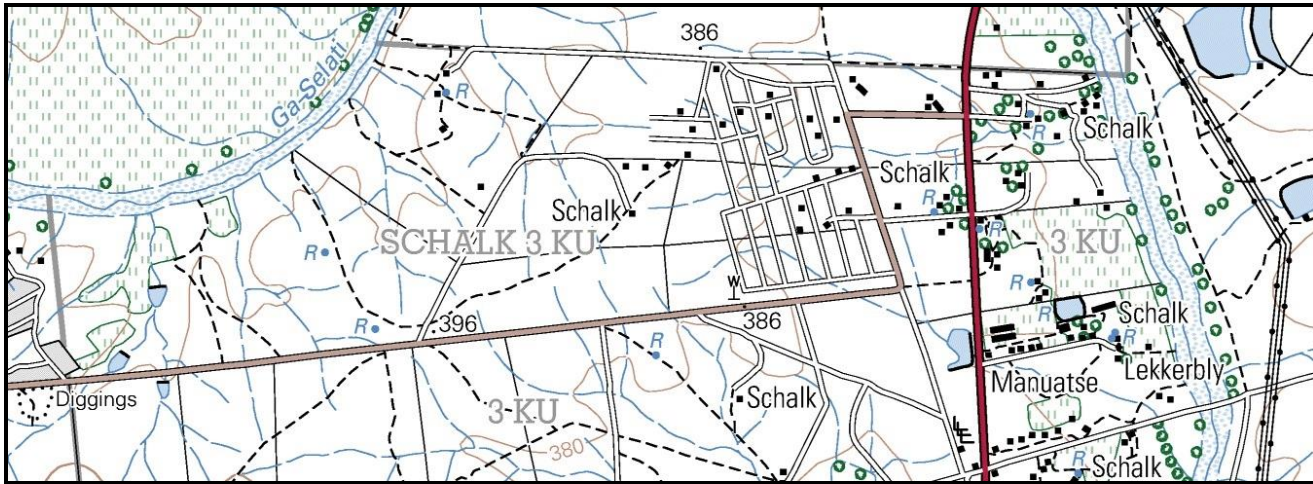


Figure 6. 2009 Topographical map of the northern half of Schalk 3 KU (Topographical Map 2009). Approximate location of the development footprint indicated in red.

4.3. Palaeontology

According to the SAHRIS palaeontological sensitivity map the area is indicated as of insignificant/ zero paleontological significance and no further studies are required in this regard.

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.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
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

It is important to note that the entire farm was not surveyed but only the development footprint (Figure 1 and 2). The topography of the study area is flat with no major geographical focal points like pans, ridges or rocky outcrops. Some portions of the site are paved and in unpaved areas the vegetation is low and archaeological visibility is high. Historically the study area is impacted on by previous agricultural fields (Figure 4 & 5) and more recently earth moving activities (Figure 10), road construction and the existing pump station (Figure 8). These activities would have impacted on *in situ* surface indications of archaeological sites.

No archaeological sites of significance were recorded in the study area or concurring with the findings of other surveys in the area (Hutten 2014 & Gaigher 2014). However, Hutten (2014) recorded a grave site and additional unmarked graves were exposed during construction activities on the Phalaborwa pipeline project (SAHRIS Case Number 9737).

The development footprint is located on the paleo riverbank of the Olifants River and quartzite pebbles are found in abundance in the larger area. Several cobbles showing possible flaking was noted in the road reserve but no *fossil majeure* pieces were recorded, it is also uncertain if these are anthropogenic or a result of the extensive ground moving activities in this area.

Adjacent to the development footprint is a building currently serving as a bottle store and will in future be a convenience store for the filling station. According to archival maps this building was constructed between 1970 and 1986 and is therefore not older than 60 years. This building **will not** be impacted on by the proposed development and there are no standing structures (Figure 15) older than 60 years in the study area. No grave or burial sites were recorded during the survey.



Figure 7: Study area viewed from the east.



Figure 8. Entrance to proposed site. The building visible is outside of the development footprint.



Figure 9. Current pump and underground tank.



Figure 10. General site conditions

7. CONCLUSIONS AND RECOMMENDATIONS

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. Similar to other surveys in the immediate vicinity of the study area (Fourie 2008, Roodt & Stegmann 2012) no archaeological sites of significance were recorded within the study area although a pipeline project close to the study area have exposed subsurface skeletal. Furthermore, the development footprint is located on the paleo riverbank of the Olifants River and quartzite pebbles are found in abundance in the larger area. Several cobbles showing possible flaking was noted in the road reserve but no *fossil majeure* pieces were recorded, it is also uncertain if these are anthropogenic or a result of the extensive ground moving activities (including historical mining) in this area. It is therefore recommended that a chance find procedure is implemented for this project.

In terms of the built environment (Section 34), no standing structures older than 60 years occur in the study area and no grave sites (Section 36) were recorded in the study area. The larger area is characterised by mining and agricultural activities (mainly game ranching). Although the area is scenic the site has already been impacted by the development of a liquor store as well as filling station infrastructure and no significant cultural landscapes or viewsapes were noted during the fieldwork.

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 SAHRA.

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 as briefly outlined below:

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. 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

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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