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PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED DEVELOPMENT OF VRYBURG AGRI HUB IN NALEDI LOCAL MUNICIPALITY OF DR RUTH SEGOMOTSE MOMPATI DISTRICT WITHIN NORTH WEST PROVINCE.

August, 2018

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and a Masters degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for Southern African Professional Archaeologists (ASAPA) and Amafaa KwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), and the International Council of Archaeozoology (ICAZ). He has more than ten years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over hundred Archaeological Impact Assessments (AIA) for developmental projects situated in several provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

I, Mr. Munyadziwa Magoma, declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organization.

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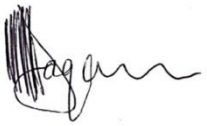

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Acknowledgements

The author and the team of Vhubvo Consultancy Cc would like to acknowledge DIGES Group Cc for their assistance in relation to the conduction of this project, also Google earth and Wikipedia.

EXECUTIVE SUMMARY

Introduction

Vhubvo Consultancy Cc was appointed by Diges Group Cc to conduct an Archaeological and Cultural-Heritage Impact Assessment study for the proposed development of Vryburg Agri hub on a 70ha portion of land in Naledi Local Municipality of Dr Ruth Segomotse Mompati District Municipality in the North West Province. The aim of the study was to outline the archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development, and to advise on mitigation measure should any sites be affected, these mitigation will in turn assist the developer to make a decision on the most appropriate option (s) in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The findings of this cultural study have been informed by desktop study and field survey. The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the area over the past years.

Background and Need of the Project

The proposed development of an Agri-hub is proposed on an approximately 70ha piece of land. The proposal is designed for 10 000 cattle feed lot and an office park. Although the district presently has several red meat abattoir, the proposed feedlot aim to produce support infrastructure that can capacitate required volume. The proposed feedlot will entails the following:

- Stock receiving/ Dispatch administration;
- Cattle handling facility;
- Feedlots pans;
- Drainage canals
- Manure lagoon;
- Silage bunkers;
- Water reservoir; and a
- Feed production area

The Proposed office park will compromise the following:

- Management office; and
- RUMC.

Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this archaeological impact assessment, the following tasks were conducted: 1) site file search, 2) literature review, 3) consultations, and 4) analysis of the acquired data, leading to the production of a report. To understand the archaeology of the prospecting area, a background study was undertaken and relevant institutions were consulted. These studies entails review of archaeological and heritage impact assessment studies that have been conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor, Google scholars and History Resource Centre were searched. The University of Pretoria's Library collection was also pursued. These investigations were fundamental in shading light about the archaeology of the area, as well as compilation of this report. The field survey was conducted on the 24th August 2018 by two Vhubvo Archaeologists.

Brief History of the Area

The Stone Age is the period in human history when stone materials were used to produce tools. In South Africa the Stone Age can be divided into three periods, Early (More than 2 million years ago - 250 000 years Ago), Middle (250 000 years ago – 25 000 years ago) and Late (25 000 years ago - AD 200). It is, however, important to note that dates only provide a broad framework for interpretation. The proposed area does not house all the Stone Age tools but the general area is rich in rock paintings and engravings (Bergh, 1998, Van Schalkwyk 2013). The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. In South Africa this period can be divided in two separate phases. Early (AD 400 - AD 1025) and Late (AD 1025 - AD 1830). Although there are no known Early Iron Age sites in the area, there are several Late Iron Age sites in the general area (Breutz 1959) The Late Iron Age farmers were followed by colonists. The pre-history of the area is evident through the presence of numerous farms with rock engravings (Van Schalkwyk, 2012; Morris, 1998).

Impact statement

The impact of the proposed Agri-hub on archaeological and cultural heritage remains is rated as being low. The probability of locating any important archaeological remains dating to the Stone or Iron Age during construction of the project is thus low.

Restrictions and Assumptions

Most of the area proposed for development is encroached by grass which make it almost impossible to view the ground surface (see figure 2 and 3). It is thus possible that some materials could have been overlooked due to issue related to visibility. Nevertheless, chances of finding any archaeological resource

is very limited given that the area had been used for agricultural purposes in the past as evident by scrub vegetation.

It is assumed that the Social Impact Assessment and Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the area and that these then will also have to be considered in the final report.

Survey Findings and Discussions

The archaeological and cultural heritage impact assessment for the proposed Vryburg Agri hub revealed no archaeological (Stone and Iron Ages) or historical material in the footprint of the study. In addition, no known cultural sites are close to the proposed area of development. The area was generally found to be disturbed by activity related to past farming.

Recommendations

Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction, SAHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff member and professional archaeologist. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The developer should induct field worker about archaeology, and steps that should be taken in the case of exposing archaeological materials.

Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with SAHRA guidelines. As per the recommendations above, the proposed development and planning of the proposed project can proceed without further archaeological or cultural-heritage impact assessment.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
LIHRA	Limpopo Heritage Resources Authority
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

Archaeological Material: remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Chance Finds: means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material: remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

Late Iron Age: this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site: a spatial cluster of artefacts, structures, and organic and environmental remains, as residues of past human activity.

1. Introduction

Vhubvo Consultancy Cc was appointed by Diges Group Cc to conduct an Archaeological and cultural heritage impact assessment study for the proposed construction of Vryburg Agri hub in Naledi Local Municipality of Dr Ruth Segomotse Mompati District Municipality in the North West Province. The aim of the study was to outline the archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed construction and to advise mitigation should any be affected and these will in turn assist the developer to make a decision on the most appropriate option in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

The findings of this cultural study have been informed by desktop study and field survey. The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the area over the past years.

1.1 Nature of the Proposed Project

The proposed development of an Agri-hub is proposed on an approximately 70ha piece of land which is sub-divided as follows:

Description	**Size**
Feedlot	55ha
Office Park	15ha
Total	**70ha**

The proposal is designed for 10 000 cattle feed lot and an office park. Although the district presently has several red meat abattoir, the proposed feedlot aim to produce support infrastructure that can capacitate required volume. The proposed feedlot will entails the following:

- Stock receiving/ Dispatch administration;
- Cattle handling facility;
- Feedlots pans;
- Drainage canals
- Manure lagoon;

- Silage bunkers;
- Water reservoir; and a
- Feed production area

The Proposed office park will compromise the following:

- Management office; and
- RUMC.

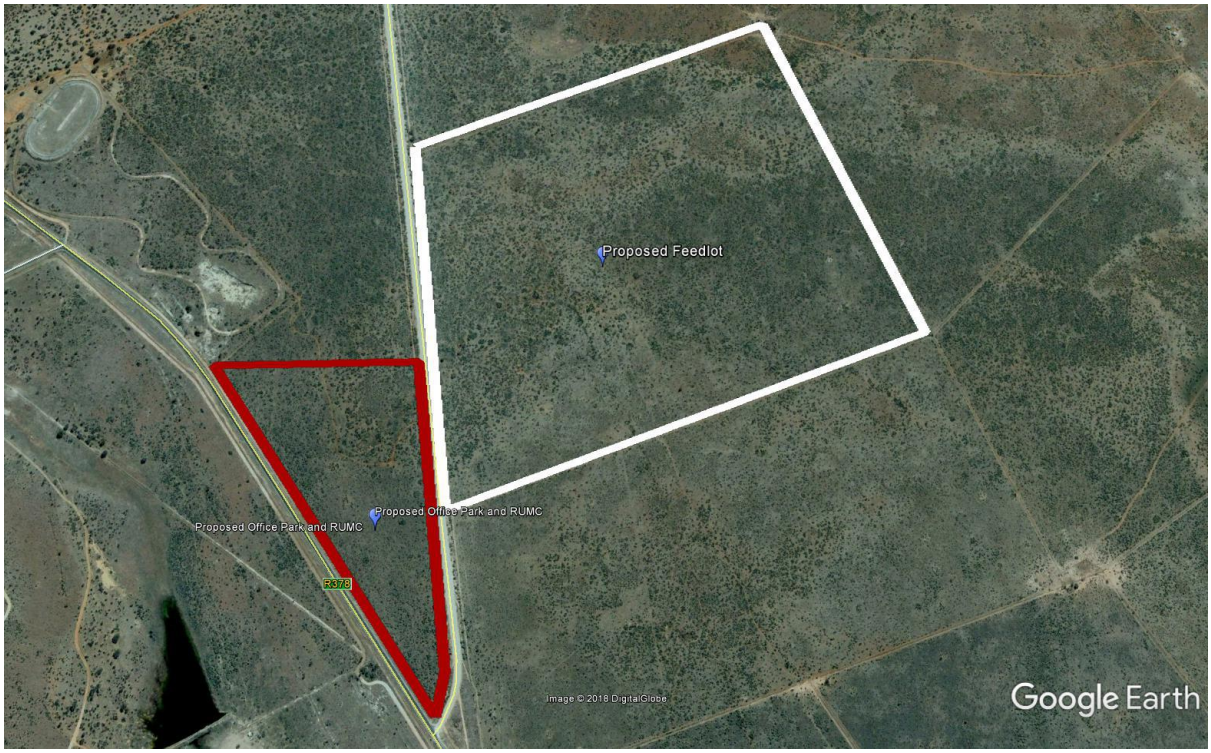

Figure 1: An overview of the Topographical map of the proposed area (Courtesy Google Earth).

Figure 2: Over view of Vryburg Agri hub proposed corporate/office park.

Figure 3: An overview of Vryburg Agri hub proposed feedlot.

Figure 4: An overview of some of the communal agricultural land wherein the powerline will transverse.

2. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed abattoir, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed development;
- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

3. Methodology and Approach

Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted: 1) literature review, 2), consultations with the developer and appointed consultants, 3), completion of a field survey and 4), analysis of the acquired data, leading to the production of this report.

Physical survey

The field survey lasted for a day on the 24 of August 2018. A total of two archaeologists from Vhubvo conducted the survey.

Documentation

The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

Restrictions and Assumptions

Most of the area proposed for development is encroached by bush which make it almost impossible to access. It is thus possible that some materials could have been overlooked due to that the area was investigated only in a broad, overview approach, as access to the different properties was not possible. Furthermore, a certain portion of corporate/office park was locked and couldn't be accessed.

4. Applicable Heritage Legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act (No 103 of 1993); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

(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; and
(c) any development or other activity which will change the character of an area of land, or water -

(i) exceeding 5 000 m² in extent;
(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 m2 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.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

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

Other sections of the Act with a direct relevance to the AIA are the following:
Section 34(1) *No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.*

Section 35(4) *No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite*

Section 36 (3) *No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside formal cemetery administered by a local authority; or*
- *bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.*

5. Discussion of (Pre-) History of the of South Africa

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless, the earliest form of culture known in South Africa is the Stone Age. These prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. Noteworthy that the time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman and Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).

Stone Age

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period were little is known about. These may be due to many factors which includes, though not limited to retrieval techniques used, reliance on secondary, at times unknown sources, and the

fact that few fauna from this period has been analysed (Chazan 2003). According to Robbins *et al.* (1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and was basically hunters and gatherers, large stone artefacts identify this era.

The Middle Stone Age overlap with the EIA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. Smaller tools than in ESA mark this period. MSA people made a wide range of stone tools from both coarse – and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces.

Microlithic Later Stone Age period began around 35 000 and extend to the later 1800 AD. According to Deacon (1984), LSA is a period when human being refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with this period. Moreover, large quantity of art and ornaments were made during this period. This area is home to all three known phases of the Stone Age. Early to Middle Stone Age sites are uncommon in this area, however rock-art sites and Late Stone Age sites are much better known. The Late Stone Age of this area is known to contain sites with rock art from the San and Khoi San cultural groups.

Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, they have been a debate about the use of the name. Other archaeologist have argued that the word “Iron Age” is problematic and does not precisely explain the event of what happen in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). Nonetheless, in South Africa this period can be divided into two phases. Early (200 - 1000 A.D) and Late Iron Age (1000 - 1850 A.D). Huffman (2007) has indicated that a Middle Iron Age (900 - 1300 A.D) should be included. According to Huffman (2007:361), until the 1960s and 1970s most archaeologists had not yet recognised a

Middle Iron age. Instead they began the Late Iron Age at AD 1000. The Middle Iron Age (AD 900–1300) is characterised by extensive trade between the Limpopo Confluence and the East Coast of Africa. This has been debated, with other researchers, arguing that the period should be restricted to Shashe-Limpopo Confluence.

Before the arrival of Europeans, the area was the home to Bantu-speaking peoples such as the Sotho-Tswana. During the Late Iron Age, farming was of significance in the region. These farming communities built numerous stone walled settlements throughout the Free State from the 17th century onwards. These sites are associated with the predecessors of the Sotho-Tswana, and are linked with the so-called N-, V-, R- and Z-Type of settlements which are respectively associated with Fokeng, Kwena, Kgatla and Rolong clans.

6. Discussion of (Pre-) History of the Area

Stone Age

Stone Age sites are well preserved in the Province as a whole and include numerous sites with rock engravings found in the region. The rock art of the Province, include the Bosworth Rock Engraving site near Klerksdorp and the Thaba Sione near Mafikeng. Thaba Sione consists of more than 559 rock engravings, with especially predominant depictions of rhinoceros (http://www.tourismnorthwest.co.za/culture/heritage_resources.html).

The known rock engraving sites in the area includes but no limited to Bernauw, Content, Gemsbok Laagte, Klipfontein, Kinderdam, Melalarig, Schatkist, Verdwaal Vlakte and Wonderfontein (Van Schalkwyk 2013). Rock engravings are known from the wider vicinity of the study area (Bergh, 1998). The study site and surrounding area yielded a total of 11 Early Stone Age sites with Acheulean lithic in the Harts River valley almost immediately east of the town of Taung and approximately 70 km east of the study area (Kuman, 2001).

Iron Age

Iron Age sites are common in the North West Province, the stone-walled settlement at Kaditshwene in the Madikwe area is a very good example of the remains as well as the Mzilikazi 1km long stone wall built in the 1830 as an animal trap. The Kaditshwene site was a mojor city of the Bahurutshe between 1699 and 1823 and it's the largest Iron Age stone built city in South Africa (Marais-Botes 2012). The Tswana speakers such as the Tlhaping,

Hurutshe, Fokeng, Kgatla and the Rolong were the earliest Iron Age settlers in the North West Province (Breutz 1959).

The Early Iron Age site in the study area are not yet discovered by Archaeologist. According to Breutz (1959) stone walled sites dating to the Late Iron Age and which can be linked to the Tswana occupation of the area, are found on a number of farms in the region, e.g. Waai Hoek and Brul Pan. The historic most important one by the name of Dithakong is however located some distance to the North-West. This site was first visited by early travelers such as Lichtenstein and John Campbell in the early part of the 19th century.

Historical era

North West Province is famous for accommodating sites such as the Taung Heritage Site and the Cradle of Humankind World Heritage Site which have basically put the whole of South Africa in the World map in terms of archaeological discoveries. The pre-history of the area is evident through the presence of numerous farms with rock engravings, including Verdwaal Vlakte, Bernauw, Schatkist, Wonderfontein and Kinderdam (Van Schalkwyk, 2012; Morris, 1998). The town of Vryburg was founded in 1883 as the capital of the Republic of Stellaland. It attained municipal status in 1896. During the Anglo Boer War (1899-1902) a large concentration camp was established on the outskirts of the town (van Schalkwyk 2013).

Many early travelers, hunters and missionaries (Burchell 1824, Campbell 1822, Smith 1834, 1836 (Lye 1975), Moffat 1842 and Harris 1852) either passed through the area or close to it. They left behind fascinating description in the form of writings of what life was in these communities before large-scale interaction with white settles took place. Some of the first whites to settle here were the missionaries Samuel Broadbent and Thomas Hodgson, who settled some distance to the east of what later became known as Wolmaransstad (van Schalkwyk 2013). The proposed area of development held no materials of archaeological value.

7. Degree of Significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. It must be borne in mind that the significance of a site from an archaeological perspective does not necessarily depend on the size of the site but more on the uniqueness of the site within a region. The following table is used to grade heritage resources.

Table 1: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

Significance rating of sites

(i) High (ii) Medium (iii) Low

These categories relate to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, and will thus be considered to be of high regional significance, however; should there be heavy erosion of the greater part of the site, its significance rating would be medium to low. The following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a 'do not touch' situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual

agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when the appropriate heritage authority has issued a permit. The following table is used to determine rating system on the receiving environment.

Table 2: Rating and evaluating criteria of impact assessment

NATURE		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
TOPOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		

This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of proposed activity		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.

3	Significant loss of resource	The impact will result insignificant loss of resources.
4	Complete loss of resource	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impact on the heritage parameter. Duration indicates the lifetime of a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0-2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).
3	Long term	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10-50 years).
4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).

CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects.
MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.

4	Very High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapsed).Rehabilitation and remediation often impossible .If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.

8. Findings and Discussions

The archaeological and cultural heritage impact assessment for the proposed Vryburg Agri hub revealed no archaeological (Stone and Iron Ages) or historical material in the footprint of the study. In addition, no known cultural sites are close to the proposed area of development. The area was generally found to be disturbed by activity related to past farming.

8.1 Impact Assessment

Below is the impact ratings. This rating are for archaeological and cultural heritage sites known to exist in the wider proposed area, and includes Stone and Iron Age, as well as Historical era materials. Note that these impacts are assessed as per Table 2:

Table 3: Anticipated impact rating.

Alternatives Corridor 1	**Ratings**
Impact	Negative
Nature	Negative
Topographical Extent	The impact will only affect site
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Irreversible

Irreplaceable Loss	The impact can result in significant loss is archaeological resources are found underground.

9. Recommendations

Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction, SAHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff member and professional archaeologist. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The developer should induct field worker about archaeology, and steps that should be taken in the case of exposing archaeological materials.

10. Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with SAHRA guidelines. As per the recommendations above, the proposed development and planning of the proposed project can proceed without further archaeological or cultural-heritage impact assessment.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or

technique) in the environment of the nation, province, region or locality?