Vhubvo Archaeo-Heritage Consultants Cc
Registration No.:2010/090598/23
VAT No.: 4960270322

546 16th road, Building no 2
Constantia Park, Midrand
Tel: 011 312 2878
Cell: 082 535 6855
Fax: 011 312 7824
info@vhubvo.co.za

Office No. 25
Bindulavhuthu Complex
Thohoyandou CBD, 0950
P.O. Box 696; Sibasa; 0970
Tel/Fax: 015 9625 742

SELAHLE
CONSULTANCY & PROJECTS

PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED CHICKEN LAYER FACILITY AND ASSOCIATED INFRASTRUCTURE ON PORTION 65 OF THE FARM GROOTVLEI 272-JR WITHIN CITY OF TSHWANE METROPOLITAN MUNICIPALITY, GAUTENG PROVINCE

April, 2025

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

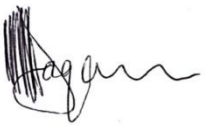
Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and a Master's degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), Historical Association of South Africa (HESA); Anthropology Southern Africa (ASnA); International Association for Impact Assessment (IAIAsa); International Council on Monuments and Sites (ICOMOS) and the International Council of Archaeozoology (ICAZ). He has more than fifteen years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over 1000 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.

INDEPENDENCE

I, Munyadziwa Magoma declare that this report has been prepared independently of any influence as may be specified by all relevant departments, institutions and organizations. I act as the independent specialists in this application, and will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant. I declare that there are no circumstances that may compromise our objectivity in performing such work. I vow to comply with all relevant Acts, Regulations and applicable Legislation. Furthermore, Vhubvo Consultancy Cc, which is a company we represent in this application, is an independent service provider and apart from fair remuneration for services rendered, it has no financial interest or vested interest in the proposed project.

AUTHOR AND CONTACT DETAILS:

Munyadziwa Magoma



Cell: 082 535 6855

Client:

Selahle Consultants and Projects

Contact person: Sinnah Mhongo
Cell: 079 614 8298
Tel: 011 026 2560
E-mail: sinnah@scprojects.co.za

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Report Outline

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section A
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	Declaration of Independence
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 4
(cA) an indication of the quality and age of base data used for the specialist report	Section 5
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 5
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 5
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of site plan identifying site alternatives	Section 8
(g) Identification of any areas to be avoided, including buffers	Section 10
(h) Map superimposing the activity including the associated structures and infrastructure On the environmental sensitivities of the site including areas to be avoided, including buffers	Section 10
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 5
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity including identified alternatives on the environment or activities	Section 9
(k) Mitigation measures for inclusion in the EMPr	Section 10
(I) Conditions for inclusion in the environmental authorisation	Section 10
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 10
(n) Reasoned opinion - (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 10
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 5
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Refer to the EIA report
(q) Any other information requested by the competent authority	No other information is requested at this time

EXECUTIVE SUMMARY

Introduction

Vhubvo Consultancy Cc has been appointed by Selahle Consultancy and Projects (Pty)Ltd to conduct a Phase I Archaeological Impact Assessment (AIA) Study for the proposed chicken layer facility and associated infrastructure on Portion 65 of the Farm Grootvlei 272-Jr within City of Tshwane Metropolitan Municipality, Gauteng Province, South Africa. The study was conducted with the main objective of investigating the availability of archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structures of historical significance that may be affected by the proposed construction. Further, the study aims to recommend a viable option from a cultural heritage perspective and advise on mitigation measures should any sites be impacted, these mitigations will, in turn, assist the developer in making decisions on the most appropriate option (s) in line with the National Heritage Resources Act, 1999 (Act 25 of 1999).

To reach a defensible recommendation, both a desktop study and a field survey were conducted. The desktop study was undertaken through the South African Heritage Resources Information System (SAHRIS) for previous Archaeological Impact Assessments conducted in the region of the proposed development, and also for research that has been carried out in the wider area over past years. The field survey was conducted to validate any assumptions made during the desktop study.

Background and Need of the Project

The proposed study area can be accessed through Kremetart Street and unnamed gravel road in Rooiwal Town. The coordinates for the site are: 25°30'37.39"S 28°16'59.28"E.

Impact Statement

The impact of the proposed development on archaeological and cultural heritage remains is rated as being low.

Restrictions and Assumptions

Most portions of the proposed area were encroached by tress and was difficult to access. However, the assessment was completed successful and adequate information were captured to successful complete the report. It is important to note that this assessment was only limited to cultural heritage assessment and did not include any form of subsurface analysis. As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, should any archaeological/ or grave site be observed during construction stage, a heritage specialist monitoring the development must immediately be notified. It is the responsibility of the contractor to protect the site from publicity (i.e., media) until all assessments are made. It is important to note that the Social Impact Assessment and the Public Participation Process (PPP) were not part of this study. However, it is assumed

that the above studies may result in the identification of sites, features and objects, including sites of intangible heritage potential in the site and that these then will also have to be considered in the selection of the preferred site.

Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this impact assessment; the following processes were followed:

- Literature Review: To understand the background archaeology of the area, a background study was undertaken and relevant institutions were consulted. These studies entail the view of archaeological and heritage impact assessment studies that have been conducted around the proposed area through SAHRIS. In addition, E-journal platforms such as J-stor, Google scholars and History Resource Centre were searched;
- The field survey was undertaken on the **10th of May 2025** by archaeologists from Vhubvo in collaboration with other specialists. The study constituted surveys in all the four portions of the proposed development.

The final step involved the recording and documentation of relevant archaeological resources, as well as the assessment of resources in terms of the heritage impact assessment criteria and report writing, as well as mapping and useful recommendations.

The applicable maps, tables, and figures, are included as stipulated in the NHRA (no 25 of 1999), the National Environmental Management Act (NEMA) (no 107 of 1998) and the Minerals and Petroleum Resources Development Act (MPRDA) (28 of 2002).

Survey Findings

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s), as well as to determine if there is any hamartia that may prevent the proposed chicken layer facility and associated infrastructure to continue. The Phase I Archaeological and Cultural-Heritage Impact Assessment study for the proposed chicken layer facility and associated infrastructure has revealed that the area has a water structure which is over 60 years of age. This structure is protected by the National Heritage Resources Act (Act 25 of 1999) by virtue of age. It should be borne in mind that this resource cannot be considered to be of such significance that can prevent the proposed development from proceeding.

Recommendations

The noted structure and have medium-low significance value by virtue of being over 60 years of age and most importantly by their historical value. This structure is rated by this study as of locally important (General Protected Area B), and is considered as a heritage situate in the larger history of the region. According to

Section 34(1) of the National Heritage Resource Act, 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, in this case, Provincial Heritage Resources Authority Gauteng (PHRAG). It has been noted that this structure will not be negatively impacted by the proposal, on that note, it is strictly recommended that this structure be avoided, and not altered in any way.

The developer is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stone-walling, graves, etc) and fossils does not mean absentee, archaeological material might be hidden underground, and as such the client is reminded to take precautions during construction. In the event that archaeological materials are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by Provincial Heritage Resources Authority Gauteng (PHRAG).

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

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, there are no major heritage reasons why the proposed development could not be allowed to proceed. Thus, it is recommended that the proposed poultry farm proceed on condition that the recommendation indicated above are adhered to.

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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
ECHRA	Eastern Cape 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 (Vhubvo) has been requested by Selahle Consultancy and Projects (Pty)Ltd to conduct a Phase I Archaeological Impact Assessment (AIA) Study for the proposed chicken layer facility and associated infrastructure on Portion 65 of the Farm Grootvlei 272 Jr within City of Tshwane Metropolitan Municipality, Gauteng Province, South Africa. The study aims are 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 measures should any be affected and these will in turn assist the developer to make a decision on the most appropriate options in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

1.1 Nature of Proposed Development

Viomec Farm (Pty) Ltd (applicant) have an existing infrastructure that accommodates approximately 4300 chickens to date, however, the applicant intends to construct more chicken layer facilities that will accommodate approximately 7000 chickens on Portion 65 of the Farm Grootvlei 272JR, Pretoria. The proposed study area extent is approximately 8.5 hectares, and the proposed development footprint will be more than 1 hectare.

2. Sites Location and Description

The proposed viomec poultry farm is located on Portion 65 of the Farm Grootvlei 272-JR within on Portion 65 of the Farm Grootvlei 272 Jr within City of Tshwane Metropolitan Municipality, Gauteng Province, South Africa. The proposed study can be accessed through Kremetart Street and unnamed gravel road in Rooiwal Town. The proposed study area extent is approximately 8.5 hectares, and the proposed development footprint will be more than 1 hectare. The coordinates to the site are 25°30'37.39"S 28°16'59.28"E.

Figure 1: Locality map of the study area.

Figure 2: An overview of the area proposed for construction of chicken layer facility and associated infrastructure.

Figure 3: A general view of portion of the proposed chicken layer facility and associated infrastructure.

Figure 4: View of portion of the area proposed for chicken layer facility and associated infrastructure.

Figure 5: An overview of section of the northern section proposed for chicken layer facility and associated infrastructure.

3. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study is to 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 construction of chicken layer facility and associated infrastructure and these will, in turn, assist the developer in ensuring proper conservation measures 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 may be affected by the proposed chicken layer facility and associated infrastructure; and
- Providing recommendations on how best to appropriately safeguard identified heritage sites and chance findings.

4. 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 was conducted on **10th of May 2025** by an archaeologist from Vhubvo in present of the landowner. The physical survey constituted vehicular survey on all portions of the proposed development, as well as foot survey on all areas suspected to be possessing something of heritage significance.

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

Some portions of the site are covered in dense grass reducing surface visibility. As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, if any archaeological/ or gravesite is observed during construction, a heritage specialist must be notified immediately.

5. 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 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.

6. 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 course – 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 bettter known.

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 has argued that the word "Iron Age" is problematic and does not precisely explain the event of what happened 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.

Historical Period

The Historical period dates from 1600. It deals with the infiltration, settlement, spread and domineering of European influence in southern Africa. Its segments are; Dutch settlement in the Western Cape, the troubled times of Zululand (mfeqane/difaqane), Voortrekkers, early missions and the diamond rush. This period also witnessed or saw the compilation of early maps by missionaries, explorers and military personnel. Bartolomeo Dias was the first European to sail around the southern point of Africa in 1486, he named it "The Cape of Good Hope", nine years later it was Vasco da Gama, however, these Portuguese seafarers were not seriously interested in southern Africa. Nevertheless, the history of southeast part will change forever on the 6th of April 1652. This is when the Dutch seafarer Jan van Riebeeck arrived in Table Bay with his three ships. His mission was not to establish a full-fledged colony at the Cape but to establish supply station on behalf of the Dutch East India Company (DEIC); however, it committed itself when it granted nine company servants freedom in 1657 to establish private farms in the Rondebosch area below the eastern slopes of Table Mountain. One of the reasons why the Dutch settled at the Cape was to access the herds of cattle kept by the Khoi-Khoi, this was first achieved by friendly trade, however it was not long before disputes over land erupted

after Free Burghers began to encroach on traditional communal grazing lands. By the early 1700's the Dutch colonists have prevailed (Bergh 1999). These new white settlers will influence the context and content of South African's culture forever, starting with development of Cape Town into an urban centre, however it took many years for it to equal the size of Mapungubwe Kingdom which was attained five centuries earlier (it is also argued that Mapungubwe was during its peak more developed than other areas in Europe). These newcomers also introduced new style of houses consisting of flat roofs and ornate pediments, slaves were also imported from other parts of Africa, i.e., Madagascar, India and East Asia, these slaves who were used as labourers were skilled carpenters and bricklayers as such their skills played an invaluable role in speeding up the progress and development of the Cape. It is important to note that the intermingling between the slaves, Africans and the European population marked the beginning of the coloured community.

One of the most significant historical occurrences in the early history of South Africa was the Mfecane/ Difaqane. Shaka was a shrewd king and he stablished a kingdom that became the strongest throughout the region in the 19th Century. During the Mfecane/difaqane at the end of the 19th Century, communities who had settled in the KwaZulu-Natal were displaced and forced to move out by wars between the Zulu chiefdoms (Shillington 2013). Many generals were such as Mzilikazi, Soshangane were displaced as Zululand became a desert storm. Shaka's majesty rule came to end in 1828 when he was assassinated by his half-brothers, Dingane and Mhalangana, with Dingane assuming the leadership (Laband 1995). The kingdom became weaker and Cape merchants moved into the region to colonise Natal, and also the Voortrekker who became dissatisfied with British rule, also moved into the area (McKenna 2011).

Over a span of three years starting in 1835, some 12,000 Voortrekkers (pioneers) left the Cape Colony and trekked into the interior by ox wagon. In time, these Voortrekkers who were escaping British policies started to build a unique identity and started calling themselves Afrikaners, they also developed a hybrid language, Afrikaans, which stemmed from high Dutch but incorporated strong French, Malay, German and Black influences. The Afrikaans - speaking descendants of these people would later simply be called "Boere" (boers or farmers) (Bergh 1999). From the 1820s European missionaries worked tireless to Christianise indigenous communities and to in-culture them in a European way of life, whatever intention these missionaries have undermine African and contributed in displacing African tradition across South Africa. By the 1860s, African states began to weaken as Europeans were eager to exploit Africans as a source of labour and to acquire the fertile area, during this era most African leaders died, e.g.: Makapane (1854); Soshangane (1858); Sekwate (1861); Mswati (1865); Mzilikazi (1868); Moshoeshoe (1870); Mpande (1872); Sekhukhune (1882) and Makhado (1895). With the discovery of diamonds and gold in the 19th century, urbanisation started in South Africa. People came from all over the world to claim their stake in the diamond fields, these discoveries also made the British to realise that there was great wealth for the taking outside the Cape Colony, and with these discoveries South African black's view of life were further changed. Nevertheless, the 1902 Peace treaty in

Vereeniging marked the end of Anglo/Boers war, this gave South African black people peace treaty as they hope for better opportunity after all the suppression and domination by the minority, unfortunately it turned out differently as it made no provisions as far as human rights for black people were concerned, actually the process of segregation increased in South Africa.

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 the National Heritage Resources Authority (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 (ECHRA) 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

The impacts are assessed as either having a: negative effect (i.e., at a `cost' to the environment), positive effect (i.e., a `benefit' to the environment), or Neutral effect on the environment.
Extent of the Impact (1) Site (site only), (2) Local (site boundary and immediate surrounds), (3) Regional (within the three local municipalities), (4) National, or (5) International.
Duration of the Impact The length that the impact will last for is described as either: (1) Immediate (<1 year) (2) Short term (1-5 years), (3) Medium term (5-15 years),

(4) Long term (ceases after the operational life span of the project),

(5) Permanent.

Magnitude of the Impact

The intensity or severity of the impacts is indicated as either:

(0) None,

(2) Minor,

(4) Low,

(6) Moderate (environmental functions altered but continue),

(8) High (environmental functions temporarily cease), or

(10) Very high / Unsure (environmental functions permanently cease).

Probability of Occurrence

The likelihood of the impact actually occurring is indicated as either:

(0) None (the impact will not occur),

(1) Improbable (probability very low due to design or experience)

(2) Low probability (unlikely to occur),

(3) Medium probability (distinct probability that the impact will occur),

(4) High probability (most likely to occur), or

(5) Definite.

Reversibility

The degree to which an impact is reversible:

(1) Completely reversible

(2) Partly reversible

(3) Barely reversible

(4) Irreversible

Significance of the Impact

This rating is formulated by adding the sum of the numbers assigned to extent (E), duration.

(D) and magnitude (M) and multiplying this sum by the probability (P) of the impact. S=(E+D+M) P

The significance ratings are given below:

Table 3: Legend for Impact Significance

	Significance	Description of Significance
(<30)	Low	The activity will have a low impact in the environment. This impact would not have a direct influence on the decision to develop in the area.

(30-60)	Medium	Medium Impact – the activity will have a medium impact on the environment. The impact could influence the decision to develop in the area unless it is effectively mitigated.
(>60)	High	The activity will have a high impact on the environment. The impact must have an influence on the decision process to develop in the area.

9. Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s), as well as to determine if there is any hamartia that may prevent the proposed chicken layer facility and associated infrastructure to continue. The Phase I Archaeological and Cultural-Heritage Impact Assessment study for the proposed chicken layer facility and associated infrastructure has revealed that the area has a structure which is over 60 years of age. This structure is protected by the National Heritage Resources Act (Act 25 of 1999) by virtue of age. It should be borne in mind that this resource cannot be considered to be of such significance that can prevent the proposed development from proceeding.

Figure 6: View of the structure with the date *Jan 65* engraved on it.

Table 4: Sensitivity verification

Site	Co-ordinates	Description	Significance	Mitigation
Vio001	25 30 29.7 27 16 59.3	A borehole opening with an engraved year and a month.	Possibility of threat from construction workers. **Significance:** Medium	Permit to demolish or avoid.

9.1 Impact Assessment

Below is a description of the project area, as well as related impact ratings. These ratings are for archaeological and cultural heritage sites known to exist in the 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 5: Anticipating impact rating on Stone, Iron and Historical Age.

Issue	Corrective Measures	Impact Rating Criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Graves	No	Negative	1	3	2	2	Medium
	Yes	Negative	2	2	4	2	Low
Corrective Actions	• Before construction, contractors should be trained to identify and protect archaeological remains that may be discovered during construction.						

10. Recommendations

In accordance with the National Heritage Legislation, no development activity was conducted prior to this archaeological/heritage assessment.

The noted structure has medium-low significance value by virtue of being over 60 years of age and most importantly by its historical value. These structure is rated by this study as of locally important (General Protected Area B), and is considered as a heritage situate in the larger history of the region. According to Section 34(1) of the National Heritage Resource Act, 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, in this case, Provincial Heritage Resources Authority Gauteng (PHRAG). It has been noted that this structure will not be impacted by the proposal, on that note, it is strictly recommended that this structure be avoided, and not altered in any way.

Based on experience and findings from the larger area, it is likely that isolated graves may be exposed once construction resumes. There is thus a small chance that graves may occur in area. Nonetheless, an Archaeological Chance Find Protocol should be added to the EMPr. If graves are found by the environmental

officer, or other responsible person once excavations have commenced then they must be reported to the responsible archaeologist. The impact on the graves in the proposed area is low.

Table 6: Sensitivity verification

Aspect	Screening tool sensitivity	Verified sensitivity	Outcome statement	Relevant section
Archaeology	Low	Medium	Archaeological Impact Assessment	Section 7.2. SAHRA Requirements

The client is reminded that unavailability of archaeological material does not mean absentee; archaeological material might be hidden underground. It is thus the responsibility of the developer to notify contractors and workers about archaeological material (e.g., pottery, stone tools, remnants of stonewalling, graves, etc) and fossils that may be located underground. Furthermore, the client is reminded to take precautions during construction.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);
- Packed stones which might be uncounted underground and might indicate a grave or collapse stone walling.

If any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area 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 contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA.

11. Conclusions

A thorough background study and survey of the proposed chicken layer facility and associated infrastructure was conducted, and findings were recorded in line with the NHRA guidelines. It is recommended that the

proposed development of chicken layer facility and associated infrastructure proceed on condition that the recommendations indicated above are adhered to.

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References

Bergh, J.S. (red.). 1999. Geskiedenisatlas van Suid-Afrika. Die viernoordelikeprovinsies. Pretoria: J.L. van Schaik.

Brafield, J., Holt, S. & Sadr, K. 2009. The last of the LSA on the Makgabeng Plateau, Limpopo Province. South African Archaeological Bulletin 64 (190), pp. 176- 183.

Coertze, P.J. & Coertze, R.D. 1996. Verklarendevakwoordeboekvir Antropologieen Argeologie. Pretoria: R.D. Coertze.

Daniel, S. 2015. Old kraals and a cave found in the hills on the Waterberg Project. (Unpublished report, Johannesburg, GeoActive Dynamic Geological Services).

De Jong, R.C. 2010. Heritage Impact Assessment Report: Support of the Environmental Impact Assessment for the proposed upgrading of the Bulk Municipal Water Supply Pipeline (12km) on the farms Zeeland 526 LQ, Worcester 520 LQ, and Paarl 522 LQ, Lephalale Local Municipality, Limpopo Province. Unpublished Report for Gudani Consulting Polokwane July 2010.

Eastwood, E., van Schalkwyk, J. & Smith, B. 2002. Archaeological and Rock Art Survey of the Makgabeng Plateau, Central Limpopo Basin. The Digging Stick, 19 (1).

Hall, S & Smith, B. 2000. Empowering places: rock shelters and ritual control in farmer-forager interactions in the Northern Province. South African Archaeological society Doodwin Series, 8: 30-46.

Hanisch, E.O.M. 2003. Archaeology- A first synthesis of the Environmental, Biological and Cultural Assets of the Soutpansberg.

Huffman, T.N. 2007. Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa. Scotsville: University of KwaZulu- Natal Press.

International Finance Corporation. 2012. Overview of performance standards on Environmental and Social Sustainability. Performance Standard 8, Cultural Heritage. World Bank Group.

Knudson, S.J. 1978. Culture in retrospect. Chicago: Rand McNally College Publishing Company.

Korsman, S.A. & Meyer, A. 1999. Die Steentydperkenrotskuns. Bergh, J.S. (red.). Geskiedenisatlas van Suid-Afrika. Die viernoordelikeprovinsies. Pretoria: J.L. vanSchaik.

Krige, E.J. &Krige, J.D., 1943. The Realm of a Rain Queen. A study of the pattern of Lobedu society. Oxford University Press.

Krige, E.J., 1938. The Place of the North-Eastern Transvaal Sotho in the South Bantu Complex. Africa: Journal of the International African Institute, Vol. 11, No. 3 (Jul., 1938), pp.265-293.

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

Murimbika, M. 2006. Archaeological Impact Assessment Study for the Proposed Construction of Electricity Distribution Powerlines Within, Limpopo Province. An unpublished report by Nzumbululo Heritage Solutions

Oberholster, J.J. 1972. The historical monuments of South Africa. Cape Town: C. Struik (Pty.) Ltd.

Pager, H. 1973. Shaded rock-paintings in the Republic of South Africa, Lesotho, Rhodesia and Botswana. The South African Archaeological Bulletin.

Roodt, F., 2001a. Archaeological Impact Assessment: Fry Dam: Raising of Dam Wall, Matomashoek 371 LT &Gemsbokspruit 372 LT. An unpublished report by R & R Cultural Resource Consultants on file at SAHRA as: 2001-SAHRA-0005.

Roodt, F., 2001b. Proposed Tzaneen Extension 60, Archaeological Impact Assessment. An unpublished report by R & R Cultural Resource Consultants on file at SAHRA as: 2001-SAHRA 0029.

Sadr, K. 2005. Mphekwane test excavation of site MB5 (Mont Blanc) (Unpublished report, WITS University).

Smith, B.W. & Van Schalkwyk, J.A. 2002. The white camel of the Makgabeng. Journal of African History. 43, pp. 235-254.

Stoffberg, D.P. 1988. Argeologieseopgrawings van die SchoemansdalseVoortrekkerskans (distrik Louis Trichardt). Pretoria: Etnologiesediens, SA Leërhoofkwartier.

Van der Ryst, M.M. & Meyer, A. 1999. Die Ystertydperk. Bergh, J.S. (red.). Geskiedenisatlas van Suid-Afrika. Die viernoordelikeprovinsies. Pretoria: J.L. van Schaik.

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?