CES: PROPOSED DASSIESRIDGE BESS DEVELOPMENT PROJECT ON A PORTION OF THE FARM GRASSRIDGE 187, CACADU DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE

Archaeological Impact Assessment

Prepared for: **CES**

Prepared by: **Exigo Sustainability**

Email info@exigo3.com
Tel +27 012 751 2160
Fax +27 086 607 2406

Postnet Suite 74,
Private Bag X07,
Arcadia, 0007

Vat nr: 4910184854
Registration nr: 2006/011434/07

Innovation in Sustainability

www.exigo3.com

ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) ON A PORTION OF THE FARM GRASSRIDGE 187 FOR THE PROPOSED DASSIESRIDGE BESS DEVELOPMENT PROJECT, CACADU DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE

Conducted for:
CES

Compiled by:
Nelius Kruger (BA, BA Hons. Archaeology Pret.)

Reviewed by:
Caroline Evans (CES)

DOCUMENT DISTRIBUTION LIST

Name	Institution
Caroline Evans	CES

DOCUMENT HISTORY

Date	Version	Status
19 October 2020	1.0	Draft
19 October 2020	2.0	Final Draft

DECLARATION

I, Nelius Le Roux Kruger, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Dassiesridge BESS Development Project in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, including the relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980), the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment (SAHRA, AMAFA and the CRM section of ASAPA), regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.

Signature of Specialist
Company: Exigo Sustainability
Date: 19 October 2020

EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study subject to an Environmental Basic Assessment (BA) process for the proposed Dassiesridge BESS Development Project on a Portion of the Farm Grassridge 187 in the Cacadu District Municipality of the Eastern Cape Province. The proposed project entails the establishment of a Battery Energy Storage System at the Dassiesridge WEF Site over **4ha**. The report includes background information on the area's archaeology, its representation in Southern Africa, and the history of the larger area under investigation, survey methodology and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the South African Heritage Resources Agency (SAHRA) and recommendations contained in this document will be reviewed.

Project Title	Dassiesridge BESS Development Project
Project Location	S33.579701° E25.469154°
1:50 000 Map Sheet	3325CB
Farm Portion / Parcel	A Portion of the Farm Grassridge 187
Magisterial District / Municipal Area	Cacadu District Municipality
Province	Eastern Cape Province

The archaeological history of the Eastern Cape Province dates back to about 2 million years and possibly older. Several archaeological sites have been recorded in the landscape around Alice. The Albany Museum database holds limited information of archaeological sites for the north Eastern Cape, however, records are held at several institutions including the University of the Transkei (now Walter Sisulu University), the University of Fort Hare, and the Rock Art Research Institute at the University of the Witwatersrand. Rock art research, mainly conducted by researchers from the Rock Art Research Institute, University of the Witwatersrand, have been conducted around the Barkly East, Ugie, Maclear, Dordrecht and other areas in the Southern Drakensberg escarpment of the north-eastern Cape. The literature shows evidence of an archaeological heritage that spans from the Early Stone Age, Middle Stone Age to the Later- Stone, as well as evidence of pastoralism and Iron Age farmers. Rock paintings are prolific throughout Southern Drakensberg Mountains. The region is also significant historically as a frontier between hunter-gatherers, pastoralists, Nguni-speaking farming communities and European settlers. In terms of the project landscape, Stone Age Farmer and Colonial / Historical Period archaeology related to farming and rural expansion of the past centuries occur frequently. Stone Age lithic artefacts, primarily of Middle Stone Age (MSA) assignation, but including probable macrolithic Later Stone Age (LSA) tools and Colonial Period farmsteads are known to occur on farms around Grassridge. No distinguishable man-made features are visible on historical aerial imagery and archive maps of the project area and the landscape seem to have remained relatively pristine during the last century. Similarly, **no sites or features of heritage potential were documented in the project area during a site assessment**. The following recommendations are made based on general observations in the proposed project footprint in terms of heritage resources management.

- Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO is recommended for all stages of the project. It is particularly important that any activities that might involve the alteration or destruction of the irregular stone features in the project area are monitored as these structures might indicate burials sites. Should any subsurface

palaeontological, archaeological or historical material, or be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500). Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.

- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that it is likely that further undetected archaeological remains might occur elsewhere in the landscape along water sources and drainage lines, fountains and pans, which would often have attracted human activity in the past. Also, since Stone Age material seems to originate from below present soil surfaces in eroded areas, the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits. Burials and historically significant structures dating to the Colonial Period occur on farms in the area and these resources should be avoided during all phases of construction and development, including the operational phases of the development.

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

NOTATIONS AND TERMS/TERMINOLOGY

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

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

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

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

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

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

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

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

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

Impact: A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

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

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

Midden: Refuse that accumulates in a concentrated heap.
Microlith: A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.
Monolith: A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

Phase 1 CRM Assessment: An Impact Assessment which identifies archaeological and heritage sites, assesses their significance and comments on the impact of a given development on the sites. Recommendations for site mitigation or conservation are also made during this phase.

Phase 2 CRM Study: In-depth studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required. Mitigation / Rescue involves planning the protection of significant sites or sampling through excavation or collection (in terms of a permit) at sites that may be lost as a result of a given development.

Phase 3 CRM Measure: A Heritage Site Management Plan (for heritage conservation), is required in rare cases where the site is so important that development will not be allowed and sometimes developers are encouraged to enhance the value of the sites retained on their properties with appropriate interpretive material or displays.

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

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

Scoping Assessment: The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment. The main purpose is to focus the impact assessment on a manageable number of important questions on which decision making is expected to focus and to ensure that only key issues and reasonable alternatives are examined. The outcome of the scoping process is a Scoping Report that includes issues raised during the scoping process, appropriate responses and, where required, terms of reference for specialist involvement.

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

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

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

Trigger: A particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an *issue* and/or potentially significant *impact* associated with that proposed development that may require specialist input. Legal requirements of existing and future legislation may also trigger the need for specialist involvement.

LIST OF ABBREVIATIONS

Abbreviation	Description
ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
BCE	Before Common Era
BGG	Burial Grounds and Graves
CRM	Culture Resources Management
EIA	Early Iron Age (also Early Farmer Period)
EIA	Environmental Impact Assessment
EFP	Early Farmer Period (also Early Iron Age)
ESA	Earlier Stone Age
GIS	Geographic Information Systems
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
K2/Map	K2/Mapungubwe Period
LFP	Later Farmer Period (also Later Iron Age)
LIA	Later Iron Age (also Later Farmer Period)
LSA	Later Stone Age
MIA	Middle Iron Age (also Early later Farmer Period)
MRA	Mining Right Area
MSA	Middle Stone Age
NHRA	National Heritage Resources Act No.25 of 1999, Section 35
PFS	Pre-Feasibility Study
PHRA	Provincial Heritage Resources Authorities
SAFA	Society for Africanist Archaeologists
SAHRA	South African Heritage Resources Association
YCE	Years before Common Era (Present)

TABLE OF CONTENTS

LIST OF FIGURES

1 BACKGROUND

1.1 Scope and Motivation

Exigo Sustainability (Pty) Ltd (Exigo) was commissioned by CES to conduct an Archaeological Impact Assessment (AIA) study subject to an Environmental Basic Assessment (BA) process for the proposed Dassiesridge BESS Development Project in the Eastern Cape Province. The rationale of this AIA is to determine the presence of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance in previously unstudied areas; to consider the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

1.2 Project Direction

Exigo's expertise ensures that all projects be conducted to the highest international ethical and professional standards. As archaeological specialist for Exigo Sustainability, Mr Neels Kruger acted as field director for the project; responsible for the assimilation of all information, the compilation of the final consolidated AIA report and recommendations in terms of heritage resources on the demarcated project areas. Mr Kruger is an accredited archaeologist and Culture Resources Management (CRM) practitioner with the Association of South African Professional Archaeologists (ASAPA), a member of the Society for Africanist Archaeologists (SAFA) and the Pan African Archaeological Association (PAA) as well as a Master's Degree candidate in archaeology at the University of Pretoria.

1.3 Project Brief

CES (Pty) Ltd is conducting an Environmental Basic Assessment (EIA) process for the proposed establishment of a Battery Energy Storage System at the Dassiesridge WEF Site on a portion of the Farm Grassridge 187, Cacadu District Municipality in the Eastern Cape Province (hereafter referred to as the "Dassiesridge BESS Development Project"). For the Dassiesridge WEF development, between 42 and 47 wind turbines and associated internal infrastructure (access roads, power lines, substation, construction compound, batching plant and operations building) will be constructed to generate a power output of 140MW. The Battery Energy Storage System (BESS) subject to this AIA forms part of the WEF development but was not included in the initial EA process. The BESS will comprise of the following components:

- Up to 115 containers (each up to 40m2), each with a capacity of up to 5MWh and on a concrete platform. These will house the batteries, management system and auxiliaries.
- Up to 60 transformer stations (up to 35m2 each);
- Up to an additional 10m2 per container for cooling units;
- Internal access roads up to 8m wide between rows of containers (Existing roads will be used as far as possible. However, where required, internal access roads will be constructed);
- Medium voltage cabling between containers and the switching station of up to 33kV;
- 33kV powerlines to connect the facility to the electrical grid (approximately 1km);
- Temporary infrastructure including a site camp and a laydown area of approximately 0.3ha.

The project footprint covers approximately **4ha**.

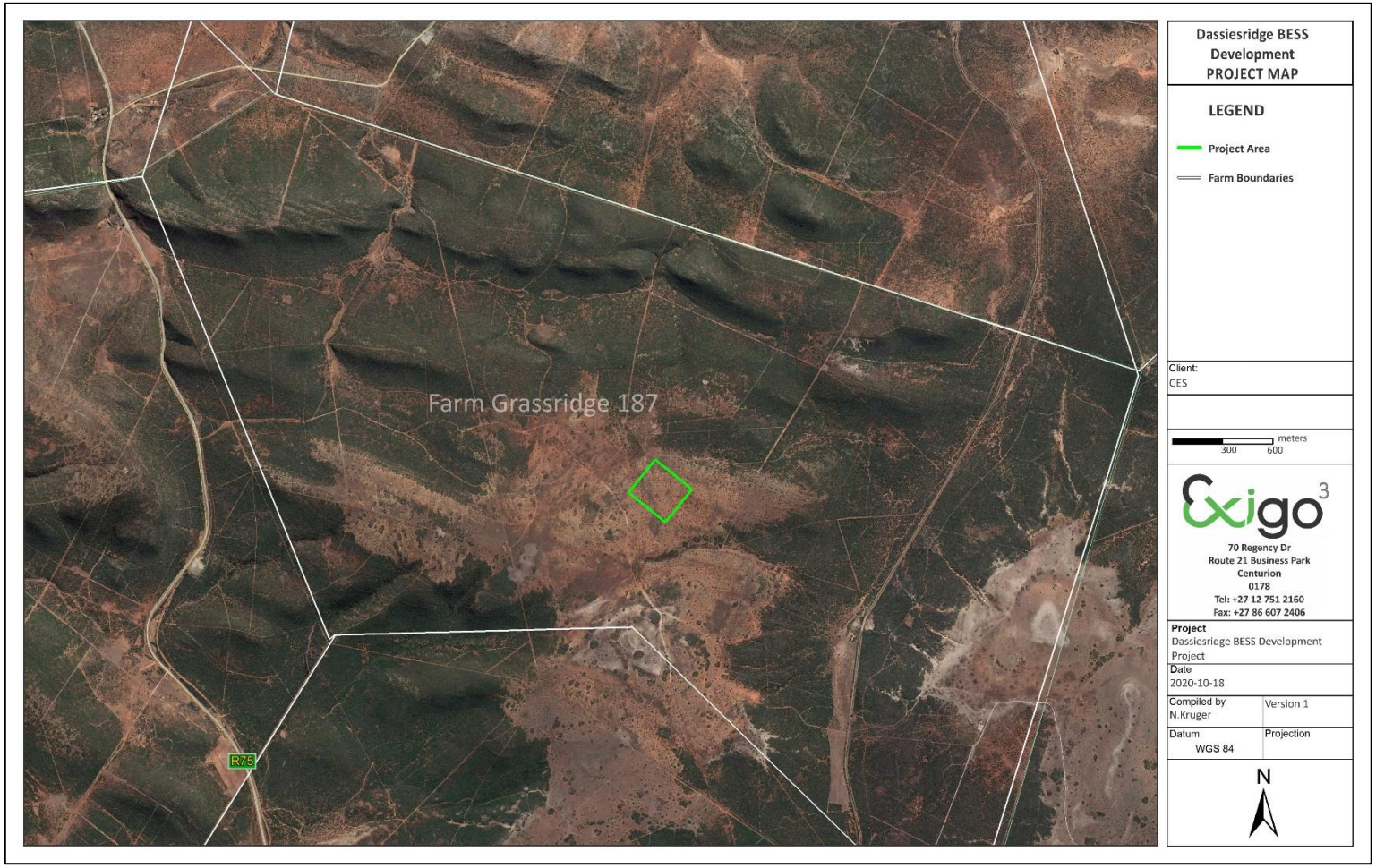

Figure 1-1: Map indicating the footprint for the Dassiesridge BESS Development Project.

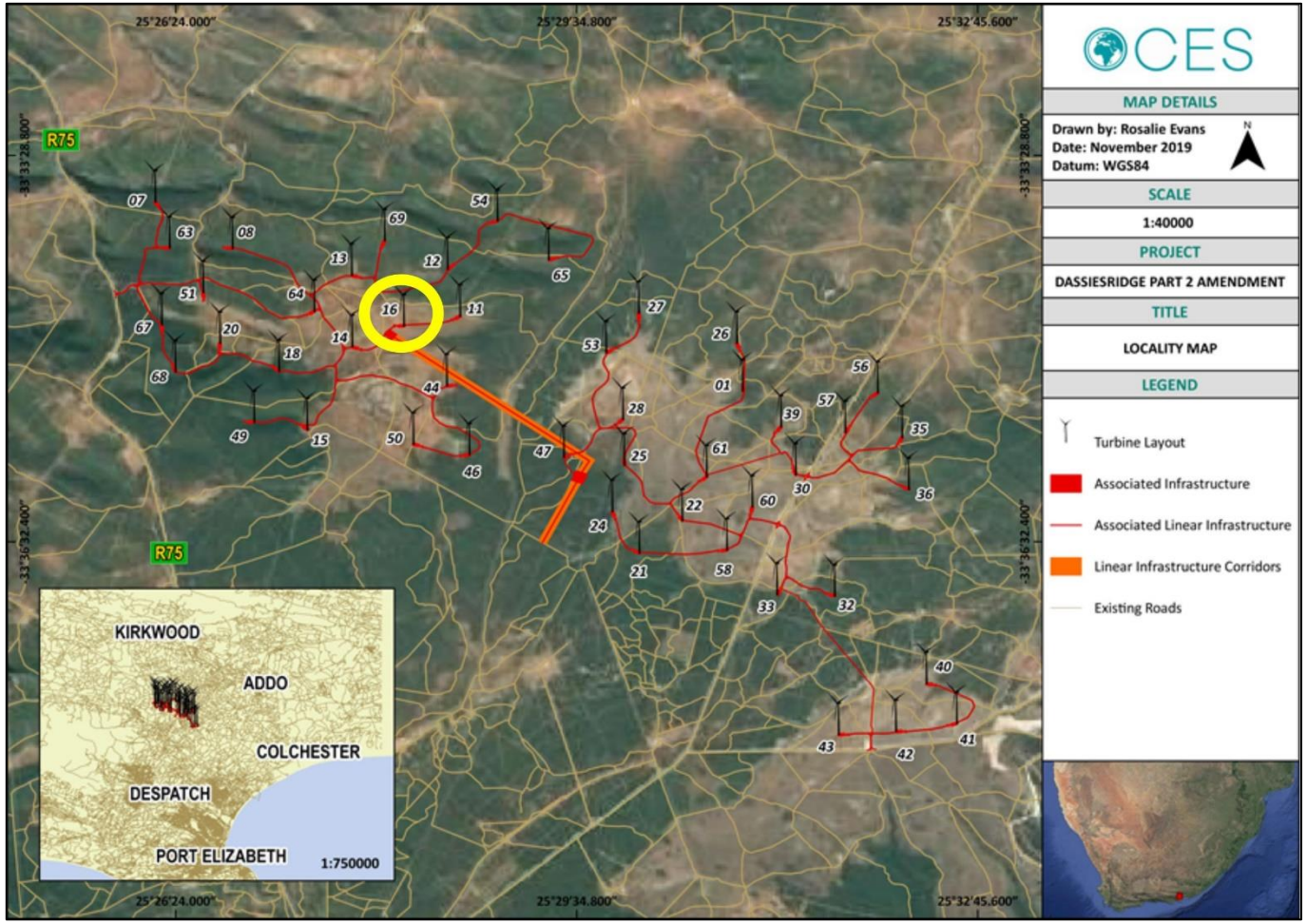

Figure 1-2: Aerial map indicating the Dassiesridge WEF development with the location of the BESS Development indicated with the yellow circle.

1.4 Terms of Reference

Heritage specialist input into the Environmental Impact Assessment (EIA) process is essential to ensure that, through the management of change, developments still conserve our heritage resources. It is also a legal requirement for certain development categories which may have an impact on heritage resources. Thus, EIAs should always include an assessment of heritage resources. The heritage component of the EIA is provided for in the **National Environmental Management Act, (Act 107 of 1998)** and endorsed by section 38 of the **National Heritage Resources Act (NHRA - Act 25 of 1999)**. In addition, the NHRA protects all structures and features older than 60 years, archaeological sites and material and graves as well as burial sites. The objective of this legislation is to ensure that developers implement measures to limit the potentially negative effects that the development could have on heritage resources. Based hereon, this project functioned according to the following **terms of reference for** heritage specialist input**:**

- *Provide a detailed description of all archaeological artefacts, structures (including graves) and settlements which may be affected, if any.*
- *Assess the nature and degree of significance of such resources within the area.*
- *Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;*
- *Assess and rate any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities.*
- *Propose possible heritage management measures provided that such action is necessitated by the development.*
- *Liaise and consult with the South African Heritage Resources Agency (SAHRA). A Notification of Intent to Develop (NID) will be submitted to SAHRA at the soonest opportunity.*

1.5 CRM: Legislation, Conservation and Heritage Management

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

1.5.1 Legislation regarding archaeology and heritage sites

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

a. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act No 25 of 1999 (section 35) the following features are protected as cultural heritage resources:

a. Archaeological artefacts, structures and sites older than 100 years

b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography

c. Objects of decorative and visual arts

d. Military objects, structures and sites older than 75 years

e. Historical objects, structures and sites older than 60 years

f. Proclaimed heritage sites

g. Grave yards and graves older than 60 years

h. Meteorites and fossils

i. Objects, structures and sites of scientific or technological value.

In addition, the national estate includes the following:

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 features of cultural significance

e. Geological sites of scientific or cultural importance

f. Archaeological and paleontological sites

g. Graves and burial grounds

h. Sites of significance relating to the history of slavery

i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

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

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

and

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

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

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

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

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

and

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

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

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

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

b. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925

Graves and burial grounds are commonly divided into the following subsets:

a. ancestral graves
b. royal graves and graves of traditional leaders
c. graves of victims of conflict
d. graves designated by the Minister
e. historical graves and cemeteries
f. human remains

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and Ordinance on Excavations (Ordinance no. 12 of 1980) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments.

c. National Heritage Resources Act No 25 of 1999, section 35

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation’s cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

1.5.2 Background to HIA and AIA Studies

South Africa’s unique and non-renewable archaeological and palaeontological heritage sites are ‘generally’ protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

A detailed guideline of statutory terms and requirements is supplied in Addendum 1.

2 REGIONAL CONTEXT

2.1 Area Location

The proposed Dassiesridge BESS Development Project occurs on a portion of the Farm Grassridge 187 in the Cacadu District Municipality, Eastern Cape Province. The area is situated approximately 20km north of Uitenhage and 40km north-west of Port Elizabeth. The study areas appear on 1:50000 map sheet 3325CB (see Figure 2-1) and coordinates for the project area are as follows:

- **S33.579701° E25.469154°**

2.2 Area Description: Receiving Environment

Uitenhage is situated on the hills of the Eastern Cape grasslands south of the Drakensberg. The ecological landscape is defined as a combination of mixed grasslands and forest / scrub forest, typically dominated by mixed grassveld and forests at differing altitudes. The terrain consists of predominantly high mountains to the north with rolling hills and flatter parcels of developed land one the plateaus and in valleys adjacent to the rivers. The vegetation mainly consists of grassland, with natural bush and forest thicket on hilltops and slopes, and around the watercourses emanating from the mountain slopes. A significant proportion of this area, particularly on the mountain slopes, has rock which is less than one metre below the natural ground level.

2.3 Site Description

The proposed site for the Dassiesridge BESS Development Project is situated on a low ridge along rolling hills and plains with the occurrences of flatter parcels of developable land. The site gradually slopes from south to north with the occurrence of deep red sands to the north and rock outcrops in the south. Exposures of decomposing calcrete occur in places within the deep sands, particularly where animal burrowing activities have transferred these occurrences to the surface. Natural vegetation in the project area remains relatively intact with grasses, shrubs and Aloe occurring throughout. A partially buried water pipeline traverse the project area and it connects to an animal drinking hole and reservoir. The current land-use of the property is game farming.

Figure 2-1: 1:50 00 Map representation of the location of the proposed Dassiesridge BESS Development Project (sheet 3325CB).

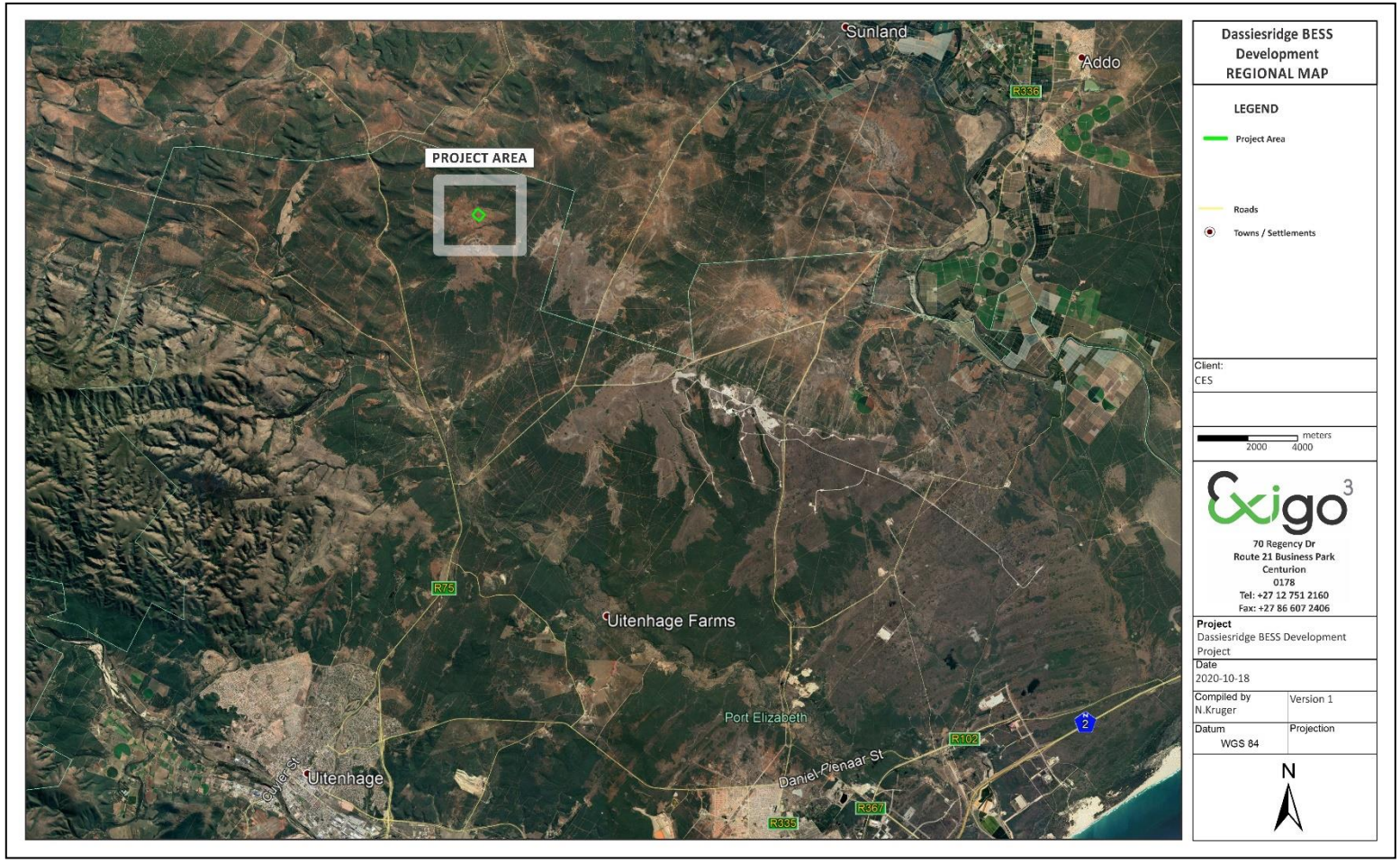

Figure 2-2: Aerial map providing a regional context for the proposed Dassiesridge BESS Development Project area.

3 METHOD OF ENQUIRY

3.1 Sources of Information

Data from detailed desktop, aerial and field studies were employed in order to sample surface areas systematically and to ensure a high probability of heritage site recording.

3.1.1 Desktop Study

The larger landscape around Uitenhage has been well documented in terms of its archaeology and history and a desktop study was prepared in order to contextualize the proposed project within a larger historical milieu. Numerous academic papers and research articles, archival sources, aerial photographs, historical maps and local histories were used to create a baseline of the landscape's heritage. In addition, the study drew on available unpublished Heritage Assessment reports to give a comprehensive representation of known sites in the study area. These included:

- Almond, J., Binneman, J. & Bennie, J. (Natura Viva, ECHC, Private). 2013. Environmental Impact Assessment for the Proposed Liquid Bulk Storage and Handling Facility in Zone 8 of the Coega IDZ. Draft Environmental Impact Assessment Report: Chapter 14. Impact on Heritage.
- Bennie, J. (Private). 2010a. Heritage Impact Assessment (Historical Component), Coega Ridge Housing Development.
- Binneman, J. (ECHC). 2010a. Archaeological Impact Assessment for the Proposed Subdivision of Five Adjoining Properties (Willow Tree Country Estate) for a Mixed-use Development near Addo, Sundays River Valley Municipality, Uitenhage District, Eastern Cape Province.
- Binneman, J. (ECHC). 2010b. A Phase 1 Archaeological Impact Assessment for the Proposed Expansion of Agricultural Activities on Portion 20 of Farm 84, Landdrost Veeplaats, Kirkwood, Sundays River Valley Municipality, Eastern Cape Province.
- Binneman, J. (ECHC). 2012a. A Phase 1 Archaeological Impact assessment of the Proposed Expansion of the Existing Agricultural Activities on Riverbend Citrus Farm, Remainder of Farm 82 Wolwe Kop, Portion 1 of Farm 77 Wellshaven and Portion 3 of Farm 77 Honeyvale, near Addo, Sundays River Valley Municipality, Eastern Cape Province.
- Binneman, J. (ECHC). 2012b. A Letter of Recommendation (with Conditions) for the Exemption of a Full Phase 1 Archaeological Heritage Impact Assessment for the Proposed Construction of a Petroport and Associated
- Infrastructure on Portions 86, 147 and 148 of Farm Gedults Rivier No 411, Division Uitenhage, Eastern Cape Province.
- Binneman, J. (ECHC). 2013. A Phase 1 Archaeological Impact Assessment for the proposed Clearing of Indigenous Vegetation for the Construction of a Boundary Fence around the South African Police Service's Training Facility at Slagboom, near Addo, Sundays River Valley Municipality, Eastern Cape Province.
- Binneman, J. (ECHC). 2014. A Letter of Recommendation (with Conditions) for the Exemption of a Full Phase 1 Archaeological Heritage Impact Assessment for the Proposed SACE Ranger Photovoltaic (Solar) Plant near Uitenhage, Eastern Cape Province.
- Binneman, J. (Albany Museum). 2000. Eskom Poseidon (Cookhouse) – Grass-Ridge (Port Elizabeth) proposed Power Line: First Phase Desktop Data Survey of Cultural Heritage Resources.
- Binneman, J. (Albany Museum). 2008. A Phase 1 Archaeological Heritage Impact Assessment of the proposed Amanzi Country Estate, Uitenhage District, Nelson Mandela Bay Municipality, Eastern Cape.
- Booth, C. (Albany Museum). 2012. A Phase 1 Archaeological Impact Assessment: Proposed

InnoWind Wind Energy Facility (WEF) on Portions 1, 2 and 3 of the Grassridge as well as Portion 1 of the Farm Oliphantskop 201, Coega, Nelson Mandela Bay Municipality, Eastern Cape Province.
- Kaplan, J.M. (Agency for CRM). 2007. Draft Feasibility Report for the proposed Regional General and Hazardous Waste Disposal Facility (Addo, Eastern Cape): Heritage Assessment.
- Gaigher, S. (G&H Heritage). 2013. Heritage Impact Assessment for the Proposed Upgrading and Stormwater
- Infrastructure in Valencia, Addo, Sundays River Valley Municipality, Eastern Cape Province.
- Kaplan, J.M. (Agency for CRM). 2008. Proposed Exxaro Alloystream Manganese Project in the Coega Industrial Development Zone: Heritage Impact Assessment.
- Nel, J. (Archaic Heritage). 2008. Final Report. Heritage Resources Scoping Survey and Preliminary Assessment. Transnet Freight Line EIA, Eastern Cape and Northern Cape.
- Pelser, A. (APAC). 2013. A Phase 1 HIA Report for the proposed Construction of a Caravan Park and Associated
- Infrastructure at Matholyweni Rest Camp within the Addo Elephant National Park, Eastern Cape Province.
- Rossouw, L. (Paleo Field Services). 2013a. Phase 1 Heritage Impact Assessment of Disco Chicks Farm 2 (Farm 713), Sundays River Valley Municipality.
- Rossouw, L. (Paleo Field services). 2013b. Scoping and Environmental Impact Assessment for the Provision of Maritime Infrastructure, including a General cargo Berth and Liquid Bulk Berths at the Port of Ngqura, Nelson Mandela Bay Municipality. Chapter 12: Heritage Impact assessment.
- Van Ryneveld, K. (ArchaeoMaps). 2010a. Phase 1 Archaeological Impact Assessment – Langbos Rural Housing Project, Sundays River Valley Municipality, Eastern Cape, South Africa.
- Van Ryneveld, K. (ArchaeoMaps). 2010b. Phase 1 Archaeological Impact Assessment – Development of the
- Koedoeskloof Landfill Site, Uitenhage, Eastern Cape, South Africa.
- Van Ryneveld, K. (ArchaeoMaps). 2011. Phase 1 Archaeological Impact Assessment – Proposed Construction of the Balmoral-Florida Collector Sewerage System near Uitenhage and Despatch, Eastern Cape, South Africa.
- Van Ryneveld, K. (ArchaeoMaps). 2012. Phase 1 Archaeological Impact Assessment – Utilization of Existing Gravel Borrow Pits, Cacadu District, Eastern Cape, South Africa.
- Van Schalkwyk, L.O. & Wahl, B. (eThembeni). 2007. Heritage Impact Assessment of Gamma Grassridge Power Line Corridors and Substation, Eastern, Western and Northern Cape Provinces, South Africa.
- Van Ryneveld, K. (ArchaeoMaps). 2007. Phase 1 Archaeological Impact Assessment - The Hopewell Conservation Project, Greenbushes, Port Elizabeth, Eastern Cape, South Africa.
- Webley, L.E. (Albany Museum). 2003a. Addo Elephant National Park: Upgrading of Existing Tourist Road Network and Construction of Southern Access Road near Colchester – Phase 1 Archaeological Impact Assessment.
- Webley, L.E. (Albany Museum). 2003b. Addo Elephant National Park: Construction of the Southern Access Road between Spekboom and Peasland – Phase 1 Archaeological Impact Assessment.
- Webley, L.E. (Albany Museum). 2006a. Heritage Impact Assessment for proposed Housing Development at
- Winterhoek Park, Uitenhage.
- Webley, L.E. (Albany Museum). 2006b. Phase 1 Heritage Impact Assessment of the proposed Biomass Plant in Zone 3, Coega, Port Elizabeth.
- Webley, L.E. (Albany Museum). 2007a. Phase 1 Heritage Impact Assessment of the proposed Asia Steel Recycling Facility at the Coega Industrial Development Area, Port Elizabeth.
- Webley, L.E. (Albany Museum). 2007b. Phase 1 Archaeological Impact Assessment on the

Construction of 50km of Loop Roads on the Farms Addo Heights [209], Lismore [208], Zoute Fontein [210], Nieu Jaars Kop [300] and Oliphants Plaat [214] within the Southern Section of the Addo Elephant National Park.

- Webley, L.E. (Albany Museum). 2007c. Phase 1 Heritage Impact Assessment: Proposed Rezoning of the Farm 655, Portion 196, 197, 199 and 275 of Farm 113 (Stellenhof), Addo, Eastern Cape.
- Webley, L.E. (ACO-UCT). 2008a. Phase 1 Heritage Impact Assessment: Portion 6 of the Farm Florida 321, Despatch, Nelson Mandela Metropole, Eastern Cape.
- Webley, L.E. (ACO-UCT). 2008b. Heritage Impact Assessment for the Farm 294 Amanzi Estate, Portion 4 of the Farm 296 Amanzi Mooi Water, Erf 296, Portion 3 of Rietheuwel and Erf 296 Rietheuvel, in the Nelson Mandela Bay Municipality, Eastern Cape.

Of particular interest to this assessment is the Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) conducted by ArchaeoMaps for the Environmental Impact Assessment (EIA) for the Dassiesridge Wind Energy Facility (WEF) (see Van Ryneveld 2014)[1].

3.1.2 Aerial Survey

Aerial photography is often employed to locate and study archaeological sites, particularly where larger scale area surveys are performed. Site assessment of the Grassridge farm relied on this method to assist the foot and automotive site survey. Here, depressions, variation in vegetation, soil marks and landmarks were examined and specific attention was given to shadow sites (shadows of walls or earthworks which are visible early or late in the day), crop mark sites (crop mark sites are visible because disturbances beneath crops cause variations in their height, vigour and type) and soil marks (e.g. differently coloured or textured soil (soil marks) might indicate ploughed-out burial mounds). Attention was also given to moisture differences, as prolonged dampening of soil as a result of precipitation frequently occurs over walls or embankments. In addition, historical aerial photos obtained during the archival search were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine whether they still exist and in order to assess their current condition and significance. By superimposing high frequency aerial photographs with images generated with Google Earth as well as historical aerial imagery, potential sensitive areas were subsequently identified, geo-referenced and transferred to a handheld GPS device. These areas served as reference points from where further vehicular and pedestrian surveys were carried out.

3.1.3 Mapping of sites

Similar to the aerial survey, the site assessment of the Grassridge farm relied on archive and more recent map renderings of Grassridge to assist the foot and automotive site survey where historical and current maps of the project area were examined. By merging data obtained from the desktop study and the aerial survey, sites and areas of possible heritage potential were plotted on these maps of the larger landscape using GIS software. These maps were then superimposed on high definition aerial representations in order to graphically demonstrate the geographical locations and distribution of potentially sensitive landscapes.

3.1.4 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the Dassiesridge BESS Development Project area was conducted in October 2020. The process encompassed a random field survey in accordance with standard archaeological practice by

[1] Van Ryneveld, K. (ArchaeoMaps). 2014. Phase 1 Archaeological & Cultural Heritage Impact Assessment – The Dassiesridge Wind Energy Facility (WEF), between Kirkwood and Uitenhage, Cacadu District, Eastern Cape, South Africa.

which heritage resources are observed and documented. Particular focus was placed on GPS reference points identified during the aerial and mapping survey. Where possible, random spot checks were made and potentially sensitive heritage areas were investigated. Using a Garmin GPS, the survey was tracked and general surroundings were photographed with a Samsung Digital camera. Real time aerial orientation, by means of a mobile Google Earth application was also employed to investigate possible disturbed areas during the survey.

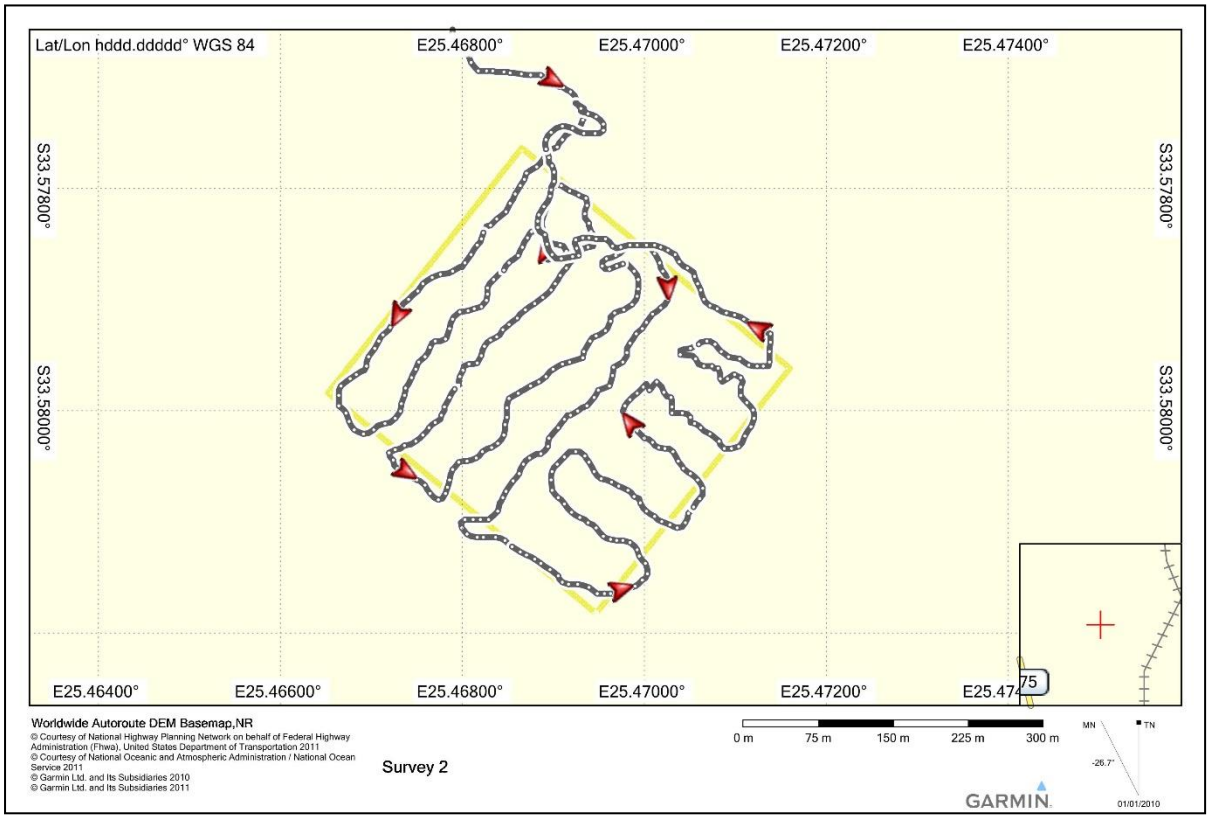

Figure 3-1: GPS track log for the heritage survey on Grassridge, conducted in October 2020.

3.2 Limitations

3.2.1 Access

The study area is accessed via a farm road connecting to the R57 route. Access control was arranged for the site assessment and no access restrictions onto the site were encountered during the site visit.

3.2.2 Visibility

The surrounding vegetation around Uitenhage is mostly comprised out of mixed grasslands and hill slope vegetation. Vegetation around the proposed project footprint remains relatively intact where much of the natural vegetation cover remain. As such, the visibility at the time of the AIA site inspection (October 2020) proved to be somewhat of a constraint (see Figures 3-2 to 3-12). In single cases during the survey sub-surface inspection was possible. Where applied, this revealed no archaeological deposits.

Figure 3-2: View of the project area, looking east.

Figure 3-3: View of a water pipeline in the project area, buried with rocks and soil.

Figure 3-4: View of deep red sands occurring in a northern portion of the project area.

Figure 3-5: Rock outcrops occurring in a southern portion of the project area.

Figure 3-6: A natural stone feature as part of a rock outcrop in the project area.

Figure 3-7: View of Calcrete exposures prevalent in the project area.

Figure 3-8: View of a water pipeline traversing the project site.

Figure 3-9: A pocket of Aloes occurring in the project area.

Figure 3-10: Animal burrowing into deep red sands is prevalent across the project site

Figure 3-11: View of surface vegetation cover in the project area.

Figure 3-12: View of an animal water hole and reservoir in the project area.

3.2.3 Summary: Limitations and Constraints

The site survey for the Dassiesridge BESS Development Project AIA proved to be highly constrained and the investigation primarily focused around areas tentatively identified as sensitive and of high heritage probability (i.e. those noted during the mapping and aerial survey) as well as areas of potential high human settlement catchment. In summary, the following constraints were encountered during the site survey:

- The general visibility at the time of the site inspection proved to be somewhat of a constraint in certain areas in the project area.

Cognisant of the constraints noted above, it should be stated that the possibility exists that individual sites could be missed due to the localised nature of some heritage remains as well as the possible presence of sub-surface archaeology. Therefore, maintaining due cognisance of the integrity and accuracy of the archaeological survey, it should be stated that the heritage resources identified during the study do not necessarily represent all the heritage resources present in the project area. The subterranean nature of some archaeological sites, dense vegetation cover and visibility constraints sometimes distort heritage representations and any additional heritage resources located during consequent development phases must be reported to the Heritage Resources Authority or an archaeological specialist.

3.3 Impact Assessment

For consistency among specialists, impact assessment ratings by Exigo Specialist are generally done using the Plomp[2] impact assessment matrix scale supplied by Exigo. According to this matrix scale, each heritage receptor in the study area is given an impact assessment. The significances of the impacts were determined through a synthesis of the criteria below:

Probability: This describes the likelihood of the impact actually occurring.	
Improbable:	The possibility of the impact occurring is very low, due to the circumstances, design or experience.
Probable:	There is a probability that the impact will occur to the extent that provision must be made therefore.
Highly Probable	It is most likely that the impact will occur at some stage of the development.
Definite:	The impact will take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect.
Duration: The lifetime of the impact	
Short term:	The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
Medium term:	The impact will last up to the end of the phases, where after it will be negated.
Long term:	The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
Permanent:	Impact that will be non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.
Scale: The physical and spatial size of the impact	
Local:	The impacted area extends only as far as the activity, e.g. footprint
Site:	The impact could affect the whole, or a measurable portion of the above mentioned properties.
Regional:	The impact could affect the area including the neighbouring residential areas.
Magnitude/ Severity: Does the impact destroy the environment, or alter its function.	
Low:	The impact alters the affected environment in such a way that natural processes are not affected.
Medium:	The affected environment is altered, but functions and processes continue in a modified way.
High:	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.	
Negligible:	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
Low:	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
Moderate:	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High:	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

[2] Plomp, H.,2004

The following weights were assigned to each attribute:

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	**Sum (Duration, Scale, Magnitude) x Probability**	
	Negligible	<20
	Low	<40
	Moderate	<60
	High	>60

The significance of each activity is rated without mitigation measures and with mitigation measures for both construction and operational phases of the development.

4 ARCHAEO-HISTORICAL CONTEXT

4.1 The archaeology of Southern Africa

Archaeology in Southern Africa is typically divided into two main fields of study, the **Stone Age** and the **Iron Age** or **Farmer Period**. The following table provides a concise outline of the chronological sequence of periods, events, cultural groups and material expressions in Southern African pre-history and history.

Table 1 Chronological Periods across Southern Africa

Period	Epoch	Associated cultural groups	Typical Material Expressions
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominins: *Australopithecines* *Homo habilis* *Homo erectus*	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First *Homo sapiens* species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	*Homo sapiens sapiens* including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period 300 – 900 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	Bantu-speaking groups, ancestors of present-day groups	Typically distinct ceramics, bead ware and iron / gold / copper objects, trade goods and grinding stones.
Late Iron Age / Later Farmer Period 1400 AD -1850 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	Various Bantu-speaking groups including Venda, Thonga, Sotho-Tswana and Zulu	Distinct ceramics, grinding stones, iron objects, trade objects, remains of iron smelting activities including iron smelting furnace, iron slag and residue as well as iron ore.
Historical / Colonial Period ±1850 AD – present	Holocene	Various Bantu-speaking groups as well as European farmers, settlers and explorers	Remains of historical structures e.g. homesteads, missionary schools etc. as well as, glass, porcelain, metal and ceramics.

4.2 Discussion: The Uitenhage Heritage Landscape

The archaeological history of the Eastern Cape Province dates back to about 2 million years and possibly older. Several archaeological sites have been recorded in the landscape around Alice. The Albany Museum database holds limited information of archaeological sites for the north Eastern Cape, however, records are held at several institutions including the University of the Transkei (now Walter Sisulu University), the University of Fort Hare, and the Rock Art Research Institute at the University of the Witwatersrand. Rock art

research, mainly conducted by researchers from the Rock Art Research Institute, University of the Witwatersrand, have been conducted around the Barkly East, Ugie, Maclear, Dordrecht and other areas in the Southern Drakensberg escarpment of the north-eastern Cape. The literature shows evidence of an archaeological heritage that spans from the Early Stone Age, Middle Stone Age to the Later- Stone, as well as evidence of pastoralism and Iron Age farmers. Rock paintings are prolific throughout Southern Drakensberg Mountains. The region is also significant historically as a frontier between hunter-gatherers, pastoralists, Nguni-speaking farming communities and European settlers.

4.2.1 Early History and the Stone Ages

The earliest evidence for humanity in the Eastern Cape comes from a period known archaeologically as the Early Stone Age. The Early Stone Age sites of the Eastern Cape Province are for the most part open air scatters of stone tools with little other remains. A general problem when studying the Early Stone Age is that is usually only these tools which survive the immense periods of time. However, archaeological sites with good deposits dating back to Early Stone Age times are scarce in the Eastern Cape. Stone tools characteristic of the Early Stone Age have been found on the coastal belt around East London, in the Sundays River Valley closer to the coast, and Geelhoutboom and Amanzi Springs near Uitenhage. According to Binneman (Albany Museum, Grahamstown) some Early Stone Age open air sites have been reported in the foothills of the Sneeuberge Mountains. Amanzi Springs has been the only Early Stone Age site in the Eastern Cape systematically investigated by archaeologists. These springs obviously provided an attractive locality around which early man chose to camp. Sediment deposited by the springs sealed his artefacts within well-defined layers. These artefacts are mostly large, bifacially flaked handaxes and cleavers shaped from locally available quartzite cobbles. Archaeologists agree that these tools were probably used in the hand and were not mounted on shafts in any way. They were most probably used to remove meat from and prepare hides from the carcasses they had either hunted themselves or scavenged from other predators. Although plant material is not preserved, bulbs, roots and berries probably provided the bulk of their food. It is not possible to measure directly the age of the Early Stone Age in the Eastern Cape but comparison between dated sites in Gauteng, and the Northern Cape Provinces as well as Eastern Africa suggests that these sites fall somewhere between 200 000 and 1 million years ago. Little technological change is evident during this long period of time. No human remains have been found in the Eastern Cape which would indicate who the makers of the Early Stone Age tools were. Again evidence from elsewhere in Africa, such as at the Cradle of Humankind near Krugersdorp, suggests that they were an upright walking people called *Homo erectus* and *Homo ergaster*. Present archaeological understanding is that an early dispersal of *Homo erectus* out of Africa, around 2 million years ago, led to parts of Eurasia being populated by this hominin. In Western Europe *Homo erectus* eventually developed into *Homo neanderthalensis* whereas this species developed directly into early forms of *Homo sapiens* in Africa.

These archaic *Homo sapiens* eventually developed into *Homo sapiens sapiens (*or anatomically modern humans) somewhere in eastern or Southern Africa. In fact, southern Africa boast some of the earliest evidence in the world for the presence of early *Homo sapiens sapiens* and for early symbolic behaviour and the development of human cognition (Mitchell 2007). The archaeological site industry associated with early *Homo sapiens sapiens* is called the Middle Stone Age. The start of the Middle Stone Age around 200 000 years ago was marked by technological advances relative to the Early Stone Age. Middle Stone Age Tools are smaller and more refined. Whereas Early Stone Age hand axes were shaped by removing flakes, Middle Stone Age tools were made from flakes and the larger stones or cores from which they were struck were discarded. These flakes are often finely pointed and recent research has indicated that some were mounted on wooden or bone hafts in order to make spears, arrows, and knives. The raw material for these tools was mostly quartzite, except for a brief time around 94 000 years ago, when finer grained silcretes were used to manufacture a wider range of tools. An important feature during the later time periods of the Middle Stone

Age, from about 80 000 years ago was the fluctuating but progressive drop in world temperatures. As the ice caps expanded the sea levels dropped and retreated. These cooler conditions would also have brought about changes in the more inland areas such as the project area. During the initial stages of the Middle Stone Age the vegetation would have been similar than today. However, as temperatures dropped the vegetation became more open with large areas been given to grassland. Grazing animals came to dominate the diets of the people located inland from the coastal zones. It was during the Later Stone Age that the full range of material culture which can be readily identified with that made by the Bushmen or San of the historical period, developed. Although skeletal material belonging to the period between 40 000 years and 20 000 years ago are very scarce in South Africa human skulls dated from about 15 000 years ago onwards clearly suggests a Khoisan affinity to the makers of later Stone Age tools. More than 200 Later Stone Age sites are known from the Eastern Cape Province and many more are awaiting discovery. The majority of the known sites have been recorded in the coastal areas, the greater Grahamstown area and the Baviaanskloof by archaeologists from the Albany Museum in Grahamstown. Various caves and rock shelters containing Later Stone Age deposit have been located in the Suurberg and Winterhoekberg extension of the Cape folded mountains around Grahamstown, Alicedale and Uitenhage (Hall 1988). This area has been systematically surveyed by professor Garth Sampson and his team over a period of thirty years. The vast majority of the 16 000 Stone Age sites located here are open air sites. However, Garth Sampson also located a handful of rock shelters that were excavated (1985). These include Driekoppen, Volstruisfontein, Lame Sheep, Leeuhoek, Abbot's Cave, Van Zyl Rus, and Boundary shelter (Close & Sampson 1998). Further south most thoroughly investigated Later Stone Age rock shelters occur at Edgehill and Welgeluk. These sites are situated near Fort Beaufort to the immediate north of the Cape folded mountains. Further north the sites of Fairview and Waterval, situated in the Winterberg, have also been excavated by archaeologists (Hall & Binneman 1985). All the above mentioned sites were inhabited by the San - some as late as the final years of the 19th century. Most archaeological research on the Khoekhoen are focussed on the coastal areas of the Eastern Cape region.

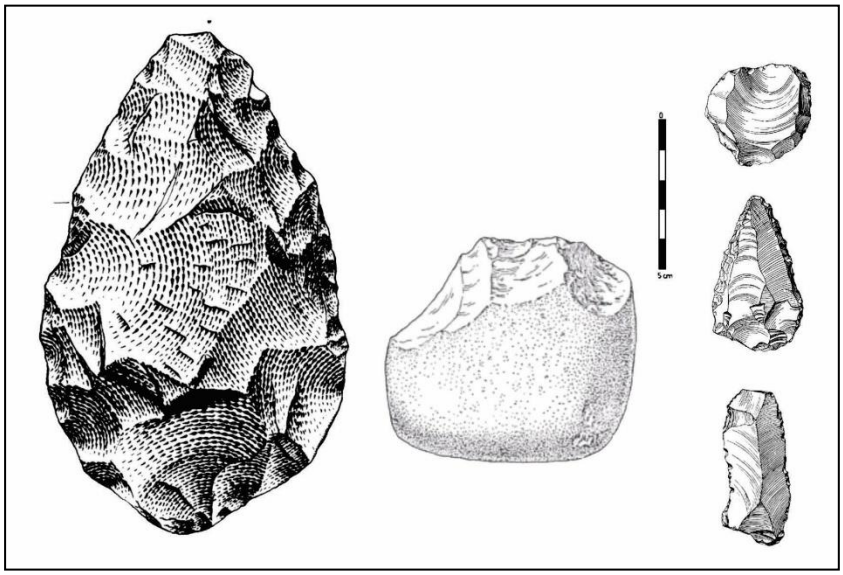

Figure 4-1: Typical ESA handaxe (left) and cleaver (center). To the right is a MSA scraper (right, top), point (right, middle) and blade (right, bottom).

4.2.2 The Later Stone Age (LSA) and Rock Art

Later Stone Age (LSA) sites occur both at the coast and inland as caves deposits, rock shelters, open sites and shell deposits. The majority of LSA archaeological sites in the Eastern Cape area would date from the past 10 000 years where San hunter-gatherers inhabited the landscape living in rock shelters and caves as well as on

the open landscape. These latter sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone. The Southern Drakensberg was occupied by hunter-gatherers before 10 000 BP (Opperman 1987) but was subsequently abandoned in the Holocene after ca. 6 000 BP, only to be re-occupied by 3 000 BP (Tusenius 1989). Ecological evidence suggests that the southern Drakensberg may have been too dry to support the animals and plants needed for the existence of hunter-gatherer people between 6 000 and some time before 3 000 BP (Tusenius 1989). The north-eastern Cape forms a link between the better watered eastern half of South Africa and the drier west. The wettest conditions apparently existed around 2700 BP, probably correlating with an increase in human occupation in the Southern Drakensberg following the possible abandonment of that area during the dry phase(s) of preceding millennia (Rosen et al. 1999). The succession of stone artefact Industries within the LSA of the Drakensberg region of the north-eastern Cape demonstrates that the resources of this area, which is characterized by a steep ecological gradient, were consistently exploited throughout end Pleistocene and Holocene following the amelioration of conditions after the cold maximum of the Late Pleistocene. The culture stratigraphic sequence if very comparable to that recorded in Lesotho, the middle Orange River basin and the southern and Eastern Cape (Opperman 1982).
Bonawe (Opperman 1982) is a rock shelter situated below the escarpment about 7 km west of the town of Elliot. The site has been radiocarbon dated to 8 040 +- 100 B.P. and contained end-Pleistocene and Holocene material. Te Vrede is also a rock shelter situated below the escarpment near Ugie and was dated to 10 000 +- 120 B.P. and 8 100 +-80 Pta-3204, containing end Pleistocene and Holocene material (Opperman 1982). Colwinton Rock Shelter contained end Pleistocene and Holocene material including faunal remains, stone artefacts and pottery (Opperman 1982). The stone tool analysis reveals a sequence of three industries in cultural sequence of the southern and eastern Cape, Lesotho and Middle Orange River.

The renowned San rock paintings of the Drakensberg region also belongs to the LSA period- although the majority were made between 4000 years ago and about 120 years ago. Rock Art can be in the form of rock paintings or rock engravings. Rock paintings occur on the walls of caves and rock shelters across southern Africa and are prolific in the Southern Drakensberg, north-eastern Cape extending the entire Drakensberg range into KwaZulu-Natal and Lesotho. Rock engravings are limited to the Karoo and Northern Cape Regions and do not generally occur within the north Eastern Cape region and former Transkei region. Rock art research within the Southern Drakensberg has been conducted by several researchers and students from the Rock Art Research Institute, University of the Witwatersrand, over a period of 25 years, with a well-established database of site from Maclear, Tsolo, Barkly East, Ugie, Dordrecht and the wider region and extent of the Drakensberg range and Maluti Mountains.

4.2.3 Pastoralism and the last 2000 years

As noted above, Khoekhoe pastoralists or herders entered southern Africa about 2000 years ago, with domestic animals such as fat-tailed sheep and goats, travelling through the south towards the coast. Their economic systems were directed by the accumulation of wealth in domestic stock numbers and their political make-up was more hierarchical than that of the hunter-gatherers. The most significant Khoekhoe pastoralist sites in the Eastern Cape include Scott's Cave near Patensie (Deacon 1967), Goedgeloof shell midden along the St. Francis coast (Binneman 2007) and Oakleigh rock shelter near Queenstown (Derricourt 1977). Often, these archaeological sites are found close to the banks of large streams and rivers. Little detailed pastoralist research has been conducted within the Elliot area, except for the incidences of ceramics recorded during excavations. Coiwinton Rock Shelter situated north towards Barkly East above the escarpment yielded evidence of pre-agriculturalist ceramics within the excavation as well as at Bonawe Rock Shelter west of the town of Elliot (Opperman 1982; Mazel 1992).

4.2.4 Iron Age / Farmer Period

The beginnings of the Iron Age (Farmer Period) in Southern Africa are associated with the arrival of a new Bantu speaking population group at around the third century AD. These newcomers introduced a new way of life into areas that were occupied by Later Stone Age hunter-gatherers and Khoekhoe herders. Distinctive features of the Iron Age are a settled village life, food production (agriculture and animal husbandry), metallurgy (the mining, smelting and working of iron, copper and gold) and the manufacture of pottery. Iron Age people moved into Southern Africa by c. AD 200, entering the area either by moving down the coastal plains, or by using a more central route. From the coast they followed the various rivers inland. Being cultivators, they preferred rich alluvial soils. The Iron Age can be divided into three phases. The Early Iron Age includes the majority of the first millennium A.D. and is characterised by traditions such as Happy Rest and Silver Leaves. The Middle Iron Age spans the 10th to the 13th Centuries A.D. and includes such well known cultures as those at K2 and Mapungubwe. The Late Iron Age is taken to stretch from the 14th Century up to the colonial period and includes traditions such as Icon and Letaba.

Even though much research has been conducted on the Iron Age (IA) across southern Africa, only a small portion has focused on the Eastern Cape. A few important Eastern Cape Early Iron Age Sites (EIA) sites include Kulubele situated in the Kei River Valley near Khomga (Binneman 1996), Ntsitsana situated in the interior Transkei, 70 km west of the coast, along the Mzimvubu River (Prins & Granger 1993), and Canasta Place situated on the west bank of the Buffalo River (Nogwaza 1994). Previous investigations into the EIA in the Transkei and Ciskei include work at Buffalo River Mouth (Wells 1934; Laidler 1935), at Chalumna River Mouth (Derricourt 1977) and additional research by Feely (1987) and Prins (1989). The first EIA farming communities during the first millennium AD preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum. The closest documented and well-researched Early Iron Age site, to Elliot is located within the Great Kei River Valley. The site is situated some 200 m below the plateau and 60 km inland from the coast, within the borders of the Transkei, approximately 100 km up the coast towards Durban. There has in the past been some speculation that Early Iron Age populations may have spread well south of the Transkei into the Ciskei, possibly up to the Great Fish River (Binneman et al. 1992), however, no further research has been undertaken to confirm these statements. A closer Early Iron Age site has been documented to the south of East London (Cronin 1982). Thicker and decorated pottery sherds, kraals, possible remains of domesticated animals, upper and lower grindstones and storage pits are associated for identifying EIA sites. The sites are generally large settlements, but the archaeological visibility may in most cases be difficult owing to the organic nature of the homesteads. Metal and iron implements are also associated with EIA communities.

The Later Iron Age (LIA) is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. LIA sites in the Eastern Cape Province occur adjacent to the major rivers in low lying river valleys but also along ridge crests above the 800m contour. The LIA in the project area can be ascribed to the Mpondomise, Thembu, and Xhosa tribal clusters or their immediate predecessors (Feely 1987). It is also possible that some stone walled sites, especially those incorporating shelters or caves, were constructed by hybrid San/Nguni groups. Trade played a major role in the economy of LIA societies. Goods were traded locally and over long distances. The main trade goods included metal, salt, grain, cattle and thatch. This led to the establishment of economically driven centres and the growth of trade wealth. Keeping of domestic animals, metal work and the cultivation of crops continued with a change in the organisation of economic activities (Maggs, 1989; Huffman 2007). Hilltop settlements are mainly associated with LIA settlement patterns that occurred during the second millennium AD. Later Iron Age settlements have been formally recorded by the Albany Museum and cover a relatively extended area in comparison with the Early Iron Age settlement patterns. With the exception of the Tembu, stone buildings

which characterizes the Iron Age sites of Sotho areas, is absent in the Transkei and Ciskei, and a pattern of some mobility without, it is presumed, a stone working technology of significance, makes the allocation of sites a major problem (Derricourt 1973).

4.2.5 Later History: The Frontier Wars

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

The southern and eastern parts of the Eastern Cape Provinces bears testimony to a series of clashes historically known as, Frontier Wars date back to 1779 when Xhosa people, Boers, Khoikhoi, San and the British clashed intermittently for nearly a hundred years. This was largely due to colonial expansion which in turn dispossessed Xhosa and Khoikhoi people of their land and cattle among other things. Although periods between the wars were relatively calm, there were incidents of minor skirmishes sparked by stock theft. In addition, alleged violations of signed or verbal agreements played a vital role in sparking the incidents of armed confrontations. Colonists also sought to consolidate their gains through the presence of military force as witnessed in the building of forts, garrisons, military posts and signal towers. Resistance from particularly the Xhosa was a cohesive one; other Xhosa ethnic groups cooperated with the colonial government when they felt doing so would advance their own interests.

During the early years before Dutch occupation of the region, the Xhosa, Khoikhoi and San people focused primarily on hunting, agriculture and stock farming. In the 1700s, the lack of sufficient space for proper stock farming forced the farmers to pack their possessions into their ox wagons and move deeper into the interior of the Cape Colony. These farmers were called a "Trek boers" (Migrant farmers). Until 1750 (29 years before the First Frontier War), migrant farmers rapidly advanced rapidly into the interior using force. For instance, the use of superior weapons such as guns quickly subdued resistance from local people. Those people who were subdued and those submitted to Trek Boers as an attempt to protect their livestock and land were employed to tend to the cattle and provide other labour needs of the white famers. However, the Dutch East India Company (V.O.C.) became worried about the migrant farmers moving so far because it became increasingly difficult to exercise any authority over them. In order to maintain its authority, the V.O.C. was forced to follow in their tracks. This constant moving also resulted in the V.O.C. having to continually change the boundaries of the eastern part of the Cape Colony. Eventually, in 1778 less than a year into the First Frontier War, the Great Fish River became the eastern frontier. It was also here that the migrant farmers first experienced problems with the Xhosa. Until that time, the migrant farmers had only experienced serious clashes with the San people when the San attacked them with poisoned arrows and hunted their cattle. The migrant farmers frequently organized hunting parties in reprisal for the San attacks. When the frontier farmers, as they were now called, met with the Xhosa, serious clashes broke out. Each group felt that the other was intruding on their territory and disrupting their livelihood, and both wanted to protected themselves at all costs. The V.O.C. established new districts such as Swellendam and Graaff- Reinet in order to maintain authority over the frontier and to quell the ongoing violence, but to no avail. The frontier farmers kept on moving across the border and the Xhosa vigorously resisted this incursion. A number of wars followed as both groups fought each other over territory and resources.

- **First Frontier War (1779-1781)**

It is widely believed that the First Frontier War which broke out in 1779-1781 was really a series of clashes between the Xhosas and Boers. Around 1779, allegations of cattle theft by Xhosas had become so common on the south-eastern border, forcing the Boers to abandon their farms along the Bushmans River. Subsequently, in December 1779 an armed clash between Boers and Xhosas ensued, apparently sparked by irregularities committed against the Xhosa by certain white frontiersmen. In October 1780 the Government appointed Adriaan van Jaarsveld, a highly experienced commando leader, to be field commandant of the whole eastern frontier, and a commando led by him captured a very large number of cattle from the Xhosa and claimed to have driven all of them out of the Zuurveld by July 1781.

- **Second Frontier War (1789-1793)**

This led to considerable bitterness among the eastern frontiersmen, particularly since war among the Xhosas in 1790 increased Xhosa penetration into the Zuurveld, and friction mounted. In 1793 a large-scale war was precipitated when some frontiersmen under Barend Lindeque, including the lawless Coenraad de Buys who had previously been involved in outrages against the Xhosa, decided to join Ndlambe, the regent of the Western Xhosas, in his war against the Gunukwebe clans who had penetrated into the Zuurveld. But panic and desertion of farms followed Ndlambe's invasion, and after he left the Colony his enemies remained in the Zuurveld. In spite of the fact that two Government commandos under the landdrosts of Graaff-Reinet and Swellendam penetrated into Xhosa territory as far as the Buffalo River and captured many cattle, they were unable to clear the Zuurveld, peace was made in 1793. Frontier discontent over Government policy precipitated revolts in Graaff-Reinet and Swellendam in 1795. Although the northern part of the Zuurveld was re-occupied by Boer farmers by 1798, many Xhosa clans remained in the southern Zuurveld area, some even penetrating into Swellendam, partly as a result of a civil war between the followers of Ndlambe, the acting regent of the Western Xhosas, and his nephew Gaika, the legitimate heir. The Government found it impossible to persuade the Xhosa clans in the Colony to go back across the Fish River. Stock theft and employment of Xhosa servants increased tensions, and in January 1799 a second rebellion occurred in Graaff-Reinet. This precipitated the Third Frontier War (1799-1803).

- **Third Frontier War (1799-1803)**

In January 1799 a second rebellion occurred in Graaff-Reinet necessitating the Third Frontier War. In March of the same year, Government of the First British Occupation sent some British soldiers under Gen T P Vandeleur to crush the Graaff-Reinet revolt. No sooner was this done (April 1799) than some discontented Khoikhoi revolted, joined with the Xhosa in the Zuurveld and began attacking white farms, reaching as far as Oudtshoorn by July 1799. Vandeleur's force on its way back to Algoa Bay was attacked by a Gqunukwebe clan, fearing expulsion from the Zuurveld. Commandos from Graaff-Reinet and Swellendam were mustered, and a string of clashes ensued. The Government dreaded a general Khoi rising, and so made peace and allowed the Xhosas to remain in the Zuurveld. In 1801, another Graaff-Reinet rebellion began, forcing further Khoi desertions. Farms were abandoned en masse, and the Khoi bands under Klaas Stuurman, Hans Trompetter and Boesak carried out widespread raids. Although several commandos took the field, including a Swellendam commando under Comdt Tjaart van der Walt, who was killed in action in June 1802, they achieved no permanent result. Even a 'great commando' assembled from Graaff-Reinet, Swellendam and Stellenbosch could not make any real headway. In February 1803, just before the British government handed over the Cape Administration to the Batavian Republic, and an inconclusive peace was arranged. The Batavian authorities propitiated the resentment of the eastern-frontier Khoi-khoi but could not persuade the Xhosas to leave the Zuurveld (1803-1806).

- **Fourth Frontier War (1811-1812)**

The Fourth Frontier War was neither the direct or indirect consequence of the anger emanated from the three previous frontier wars and the violation of the agreements that declared the Zuurveld region a 'neutral ground'. Ignoring the agreement, the Xhosas occupied the 'neutral ground', an act that prompted the Cape government in 1809 to send Lt-Col Richard Collins to tour the frontier areas. After touring the areas he recommended that the Xhosa be expelled from the Zuurveld, which should be secured by dense white settlement, and that the area between the Fish and the Keiskamma Rivers be unoccupied by black or white. Many historians believe that the Fourth Frontier War came as a surprise to the Xhosa as the opposition troops were well prepared, unlike in three previous encounters. In 1811, Colonel John Graham took the area with a mixed-race army. Subsequently, in January and February 1812, 20 000 Gqunukwebes and Ndlambes were driven across the Fish River by British troops in conjunction with commandos from Swellendam, George, Uitenhage and Graaff-Reinet under the overall command of Lt-Col John Graham. On the site of Colonel Graham's headquarters arose a town bearing his name Grahamstown. [7] It is one of the first towns to be established by British in South Africa. Post the war, a line of frontier forts was built to hold the frontier, but an attempt to establish a dense Boer settlement behind them botched. Consequently the Governor, Sir Charles Somerset, made a verbal treaty with Gaika, the supposed paramount chief of the Western Xhosas. Unfortunately this agreement between Sir Charles Somerset and Gaika helped provoke a quasi-nationalist movement among the Western Xhosas, led by the 'prophet' Makana, which led to a renewal of the civil war between Gaika and Ndlambe. During the Fifth Frontier War [8] (1818-1819), Lt-Col John Graham never had a direct role as he was at Simonstown where he was a commando. During the dying phase of the Fourth Frontier War, Piet Retief [9] and three commandants of the new Stellenbosch commando went to relieve serving burghers on the eastern frontier. At the end of 1813 Retief moved to the eastern districts, where he married the widow Magdalena Johanna Greyling.

- **Fifth Frontier War (1818-1819)**

Following Gaika's defeat at Debe Nek in 1818, he asked the Cape for help. Subsequently, colonial forces invaded Xhosa territory in December 1818 and triumphed over Ndlambe's warriors. When they left, however, Ndlambe was again able to defeat Gaika, and then continued into the Colony and attacked Grahamstown in April 1819. The attack was repulsed, and Cape forces defeated Ndlambe and marched as far as the Kei River. In October 1819 the Xhosa chiefs were obliged to recognise Gaika as paramount chief of the Western Xhosas, and he and Somerset made a verbal treaty that provided that the whole area between the Fish and the Keiskamma Rivers, except for the Tyume Valley, which remained Xhosa territory, should be a neutral zone closed to both black and white occupation. Behind the Fish River, the 1820 Settlers were established in the Zuurveld in an attempt to provide the dense white settlement that alone could make a frontier line viable.

- **Sixth Frontier War (1834-1835)**

By early 1830s the line of clashes had spread to the Keiskamma River, now regarded as the Cape's eastern frontier. Segregation had broken down. Whites, Khoikhoi and Xhosas lived in the 'neutral', now significantly called the 'ceded', territory, and trade and employment were permitted. Insecurity persisted. The effective extension of the Cape frontier to the Keiskamma River increased overcrowding among the Xhosas beyond, already subject to considerable pressure from other tribes displaced by the Zulu empire. The Government pursued a vacillating policy towards allowing Gaika's sons to occupy land in the Tyume Valley. In 1829 Maqoma and his tribe were expelled from the Kat River area (where Khoikhoi were settled) and settled on inferior land farther east, but were allowed to return to the Tyume Valley in 1833, to be expelled again

almost immediately. Tyali and Botumane ('Botma'), other Gaika chiefs, were treated in a similar fashion. In 1834 the British government instructed Sir Benjamin D'Urban to institute a civil defence system supplemented by treaties with chiefs paid to keep order and advised by Government agents. Before this could be done, the bitterness aroused by the renewed expulsion of Maqoma and Tyali from their Tyume lands in 1833 was exacerbated by drastic reprisals by colonial patrols as a result of increased cattle theft by Xhosas during a period of drought. On 31 December 1834 a large force of some 12 000 Western Xhosas - led by Maqoma, the regent of the Gaika Xhosa tribe, Tyali, other Gaika chiefs, as well as some clans belonging to the Ndlambe branch - swept into the Colony. Raiding parties devastated the country between the Winterberg and the sea. Piet Retief managed to defeat them in the Winterberg, and Lt-Col Harry Smith was immediately sent on his historic six-day ride from Cape Town to Grahamstown to take command of the frontier. Reinforcements were sent by sea to Algoa Bay and burgher and Khoi troops were called out. After a series of engagements, including that of Trompetter's Drift on the Fish River, the chiefs fighting between the Sundays and Bushmans Rivers were defeated, while the others (Maqoma, Tyali and Umhala) retreated to the fastnesses of the Amatole Mountains. D'Urban arrived at the frontier on 14 December 1834. He believed Hintsa, the chief of the Eastern Xhosa (Galekas) and presumed paramount over the whole Xhosa nation, to be responsible for the attack on the Colony, and held him responsible for the theft of colonial stock captured during the invasion. Therefore D'Urban led a force of colonial troops across the Kei to Butterworth, Hintsa's residence, and dictated terms to him. They comprised the annexation of the area between the Keiskamma and Kei Rivers as British territory (to be called Queen Adelaide province) and the expulsion across the Kei of all tribes involved in the war. Queen Adelaide would be settled by loyal tribes, by rebel tribes who disowned their chiefs and by Fingos, remnants of tribes who had been destroyed by the rise of the Zulu empire and who had hitherto been living in Hintsa's territory under Xhosa subjection. However, expulsion of the undefeated Xhosa from Queen Adelaide proved impossible, so in September 1835 D'Urban made treaties with the 'rebel' chiefs, allowing them to remain in locations there on condition of good behaviour as British subjects under the control of magistrates who, it was hoped, would rapidly undermine tribalism with missionary help. But territorial expansion contradicted British desires for economy, and the British government, doubtful of the justice of the war and ignorant of the details of D'Urban's actions because of his long delays in sending explanations, disannexed Queen Adelaide. New treaties made the chiefs responsible for order beyond the Fish River (December 1836).

- **Seventh Frontier War (1846-1847)**

The Seventh Frontier War ('War of the Axe') began in March 1846 with the defeat at Burnshill of a colonial force under Col John Hare. The Colonial force invaded Xhosa territory following the ambush of a patrol sent to arrest a Xhosa accused of stealing an axe. The Xhosas retaliated by invading the Colony and carrying off large numbers of cattle. Although the Mfengus (Fingos) cooperated with the colonial forces, who were able to defeat the Xhosas at the Gwanga (June 1846), drought hampered the movement of troops, and the attempt to defeat the tribes in the Amatole Mountains (July/August 1846) proved unsuccessful. However, burgher forces under Sir Andries Stockenström pushed into the Transkei forced Kreli, the Gcaleka chief, to acknowledge responsibility for the attacks of the Gaikas, restore the stock captured in the war and surrender all land west of the Kei. But the war was not yet over. Its end was delayed by drought, which hampered the movement of colonial forces, by quarrels between the burgher forces and the regular troops, and by the fact that several tribes remained undefeated and able to conduct guerrilla operations, despite the 'scorched earth' tactics of the Cape forces. Only in December 1847 did the last chief submit.

- **Eighth Frontier War (1850-1853)**

In October 1850 Sandile, the principal Gaika chief, was deposed for refusing to attend a meeting of chiefs

called by the Governor, subsequently, on 24 December the Gaikas attacked a colonial patrol at Boomah Pass and destroyed three military villages. The Gaikas received support from the Thembus and some Gcalekas. They were later joined by some rebellious 'black police' and some Khoikhoi from the Kat River settlement under Hermanus Matroos and Willem Uithaalder. The Khoi revolt undoubtedly helped to keep the momentum of the war, since the Khoikhoi were experienced in white fighting methods. Military camps such as Fort Beaufort (January 1852) were attacked and caused the Government constant anxiety as to the loyalty of its Khoi auxiliaries. The Kat River revolt also meant that the burghers of the eastern districts did not respond to the call to commando duty, while only 150 burghers from the western areas had gone to the front by February 1851. Towards the end of February 1851, The Kat River rebellion was crushed. Meanwhile Comdt Gideon Joubert began the attack on the rebel Thembus, and a combined force of Thembus and Gcalekas was defeated on the Imvani River by Captain V Tylden in April 1851. Although the Government enjoyed the support of the Mfengus, most of the Ndlambe tribes and a large number of Khoikhoi, its operations were hampered by the paucity of regular troops. For the first time the Gaikas and their allies were using firearms. In addition, fighting was also going on against the Basuto in the Orange River Sovereignty. All these factors contributed to delay the end of the war. By early 1852, Sir George Cathcart arrived at the Cape to replace Sir Harry Smith. Under his command the war was vigorously pursued to its close. A combined force of regular troops, under Generals H Somerset and V Yorke, continued a previous operation started in December 1851 and defeated Kreli. In September 1852 the Amatole region had been cleared of Gaikas, and by November the last Khoi rebels had been defeated. In the new settlement, the rebellious tribes were moved out of the Amatole Mountains to locations in British Kaffraria and their lands given to white settlers. Shortly after, Sir George Grey's vigorous attempt to break down tribalism in British Kaffraria aroused the 'cattle-killing movement' among the Xhosa ethnic groups on both sides of the Kei (1857) and left the Kaffrarian Xhosas destroyed. British Kaffraria was incorporated into the Cape in 1866. In 1858 Sir George Grey, convinced of Kreli's complicity in the cattle-killing episode, sent an expedition to drive the Gcalekas beyond the Bashee River into Bomvanaland. The vacated Transkeian territory was at first administered as a dependency of British Kaffraria, and annexed to it in March 1862. Locations were established there, for Mfengus at Butterworth, and for some Ndlambes at Idutywa. But the British government felt it would be too expensive to hold this new frontier, so disannexation back to the Kei occurred in 1864.

- **Ninth Frontier War (1877-1878)**

Kreli was allowed to return to the Transkei, but the Gcalekas were forced to share their old lands with the Mfengus, whom they despised. In August 1877, when tensions were high between the two tribes, a quarrel arising at a Mfengu wedding party provoked the Ninth (and last) Frontier War. The Cape Frontier Police under Col Charles Griffith crossed the Kei with a volunteer force to protect the Mfengus, and with the aid of the Thembus and Mfengus pushed the Gcalekas beyond the Mbashe River (September 1877). But Sir Bartle Frere, the High Commissioner, overthrown Kreli, and decided that Galekaland should be settled by whites and the Gcalekas disarmed once and for all. One minor Gcaleka clan was chased into the location of Sandile, the Gaika chief. The Gaikas fired on the police, were joined by the Gcalekas in an attack on the Colony and gained support from the Thembus. The war provoked a constitutional crisis at the Cape, which had received responsible government in 1872. The Cape ministry under Molteno insisted that the combined force of regular troops, colonial police and volunteers be under the full command of Comdt Gen Griffith. Sir Bartle Frere insisted that he, as Imperial Commander-in-Chief, take charge of the conduct of the war, subsequently; he dismissed the Molteno cabinet, appointing a new ministry under Gordon Sprigg in its place. The ninth war was soon over. In February 1878 Kreli's forces were defeated at Kentani, and Kreli surrendered in June. By then Sandile had died and an amnesty was granted to his followers. In 1879 Mfenguland and the Idutywa district were annexed to the Cape, and Gcalekaland, though not formally annexed, was administered by the Cape under the chief magistrate of the Transkei. By 1894 the boundaries of the Cape had been peacefully

extended to the Mtamvuna River by the piecemeal annexation of the remaining nominally independent tribal areasry.

4.2.6 Later History: Uitenhage and Surroundings

Colonial Period resources are ample in the Uitenhage landscape with a complex of historical buildings reported on by Binneman (2010a) and further Colonial Period structures recorded by Van Ryneveld (2011, 2012a). However, it is Webley's (2008b) assessment of the Amanzi Estate that most prominently highlights the significance of the Colonial Period heritage. Included in the record is a homestead build in 1909, the ruins of a 19th Century Victorian Spa, which became the home of Sir Percy Fitzpatrick, author of 'Jock of the Bushveld' (1913), the 19th Century Nixon Citrus packing shed, key in the early establishment and development of the citrus industry (1920's), the miniature Balmoral Castle and 2 cemeteries. Three additional cemeteries and an informal graveyard were also reported on by Bennie (2010). During the early 19th Century the Sundays River demarcated the eastern boundary of the Cape Colony, with the general area around Kirkwood consequently the scene of many an armed conflict: Khoe against Xhosa, Khoe and Xhosa against the Boers and Boers and British against each other. It was Sir John Francis Cradock, Governor of the Cape Colony, who awarded the 1st farms in the Sundays River Valley to the successful leaders of his commandos (Border Wars: 1811 and 1812). District Magistrate Jacob Glen Cuyler was awarded the farm Geelhoutboom (Dunbrody), near Uitenhage. Commandant Ignatius Muller was awarded the farm Klaaskraal, just outside Kirkwood and Field Cornet J.S. Van Niekerk received Gouwernements Belooning, the property on which Kirkwood was to be established many years later. In 1877 James Somers Kirkwood arrived in the area and soon thereafter purchased Gouwernements Belooning with the vision to transform the land into irrigated citrus orchards, with produce delivered via river barges to Port Elizabeth. With this in mind he established the 'Sundays River Land and Irrigation Company', but with no financial interest in his venture, probably the result of the Diamond Rush in Kimberley, the company was soon declared bankrupt. Kirkwood's vision was however realized in the next century when the 'Sundays River Irrigation Project' was built. The town of Kirkwood was founded in 1912, and suitably so on Gouwernements Belooning. The small hamlet of Addo was founded in 1931 after 680ha of land were enclosed to form the Addo Elephant National Park,

Uitenhage is the second oldest town in the Eastern Districts of the Cape Colony. Its founding was only surpassed by that of Graaff-Reinet 18 years earlier. Many events led to the founding of the district and town of Uitenhage in 1804. The 5 main reasons for this included the extensive size of the Graaff Reinet district of almost 30 000 square miles of which Uitenhage up to now formed part which made a new administrative border district a necessity. The continuous unrest on the eastern border also underlined the importance of a new centre for maintenance of law and order. Other reasons included Uitenhage's location so close to the strategic Algoa Bay, the social and moral decay in the district of Graaff Reinet caused by the lack of sufficient numbers of religious leaders and teachers as well as the requests of the inhabitants for the formation of another border district.

On 7 February 1804 Commissioner General J. A. Uitenhage de Mist after whom the town was named founded the district of Uitenhage, splitting the district of Graaff-Reinet into 2 parts. Captain Lodewyk Alberti - the commander at Ford Frederick was instructed to find a location for the establishment of a drostdy and town, and chose the farm of Widow Scheepers in the Zwartkops River valley at the foot of the Winterhoek Mountains. The size of the farm was 3 000 morgen. Uitenhage was, after 1823, repeatedly named as the capital of the Eastern Districts by some of the organisers of the Separation Movement (1823 - 1878). When Alberti laid out the town, his military background clearly showed in the army camp pattern of the plan - static, symmetrical and lacking in inspiration.

After many of their farming activities failed and especially after the devastating floods of 1823, the 1820 Settlers drifted back to towns in the Eastern Cape, mainly to Grahamstown, but also to Uitenhage. The Settlers brought with them the English ideas about architecture which differed markedly from the local Cape Dutch style, and after their arrival their Georgian tastes became more and more visible in the town's buildings. By 1828 new districts were formed, reducing the size of the Uitenhage district. Albany and Somerset now formed the Eastern border. In 1829 another important development for the town took place when the springs on the farm Sandfontein, situated above the town and 8 km from it, were bought by the government and added to the commonage of Uitenhage. By the year 1841 Uitenhage had thus developed into a small town, with a population of 1 900 whites and a total population of 2 050. It possessed the necessary buildings for the administration of the district, all lined up in one street, a variety of houses in the Cape Dutch and Georgian styles of architecture and fulfilled the function of a town servicing an agricultural community. Uitenhage was proclaimed as a municipality on 5 June 1841. The town was divided into 5 wards and governed by 5 elected commissioners. Uitenhage railway line was commissioned on 21 September 1875 and during the same year temporary workshops for the Midland Railway System were built in the town followed by permanent ones in 1876. In 1875 the population totalled 3 693 which almost doubled in the next 15 years to 6 188 in 1891 (whites 3 183 and coloureds 2 905). During the following 10 years the population again doubled to 12 197 in 1901 (whites) 6 679 and coloureds 5 518). The census returns for 1911 however showed that the town's population dropped to 11 573 as people left the town as a result of the Depression experienced after 1904. In 1876 there were 429 houses in Uitenhage, which increased to 938 in 1889 and to 1486 in 1908. In 1908 the town also possessed 217 shops.

5 RESULTS: ARCHAEOLOGICAL SURVEY

5.1 The Off-Site Desktop Survey

In terms of heritage resources, the general landscape around the project area is primarily well known for its Stone Age Farmer and Colonial / Historical Period archaeology related to farming and rural expansion of the past centuries. In the initial HIA Report for the Dassiesridge WEF study site, Van Ryneveld (2014) identified Stone Age lithic artefacts, primarily of Middle Stone Age (MSA) assignation, but including probable macrolithic Later Stone Age (LSA) tools, scattered in notably low densities across large open surface areas. In addition, the study noted two Colonial Period sites, both comprising farmstead remains which support documentary evidence that farms in the general area were being registered from the early-mid 1800's. It was noted that continuing cultural tradition is evidenced by ongoing farming, primarily cattle and game farming, resulting in re-use of resources and farming infrastructure across the landscape.

An analysis of historical aerial imagery and archive maps reveals the following (see Figures 5-1 to Figure 5-3):

- The farm Grassridge was surveyed in 1868.
- Besides for a farm access road, no man-made features are indicated on topographic maps of the project area.
- Aerial imagery of the project area dating to 1932 and 1960 indicate the same access road but no other prominent distinguishable landscape or man-made features are visible.

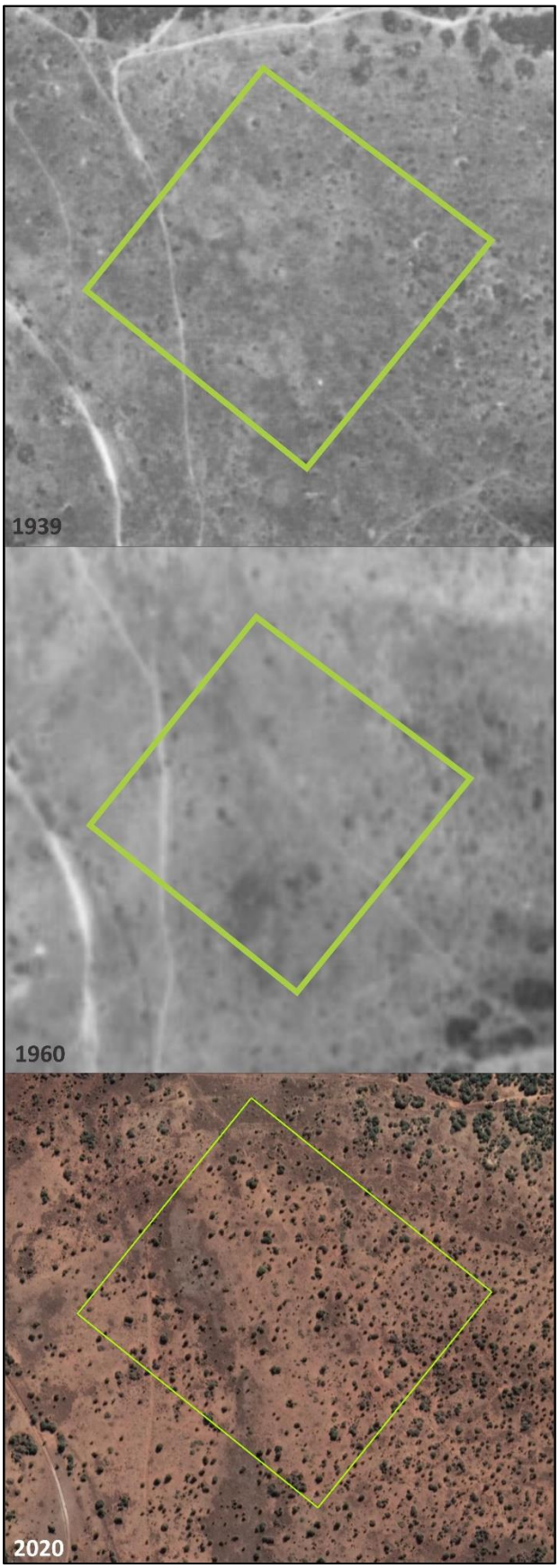

Figure 5-1: A series of aerial images of the project area on Grassridge (green outline). Besides for an access road, the project area seems devoid of man-made structures or features.

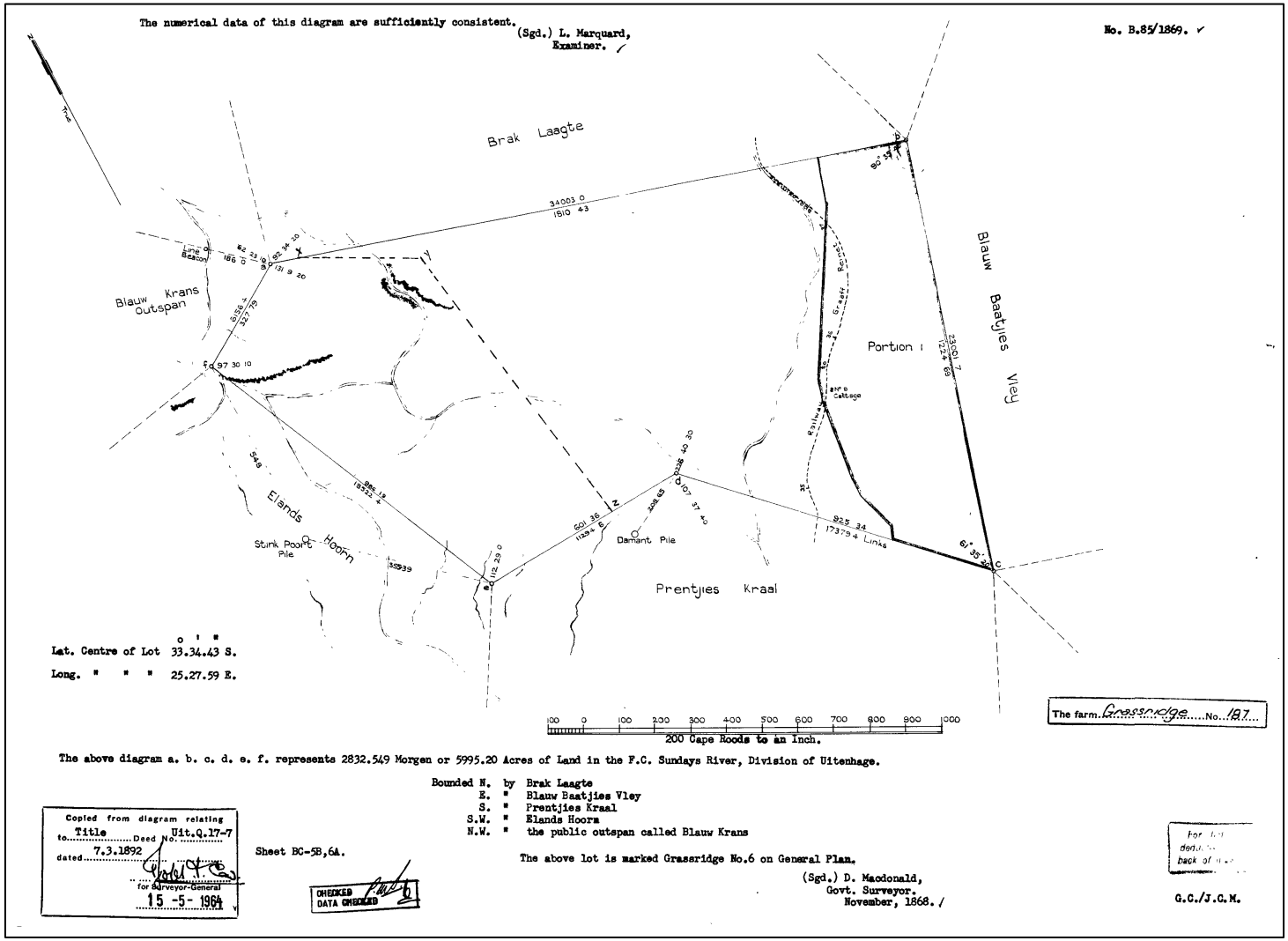

Figure 5-2: The original title deed for Grassridge dating to 1968.

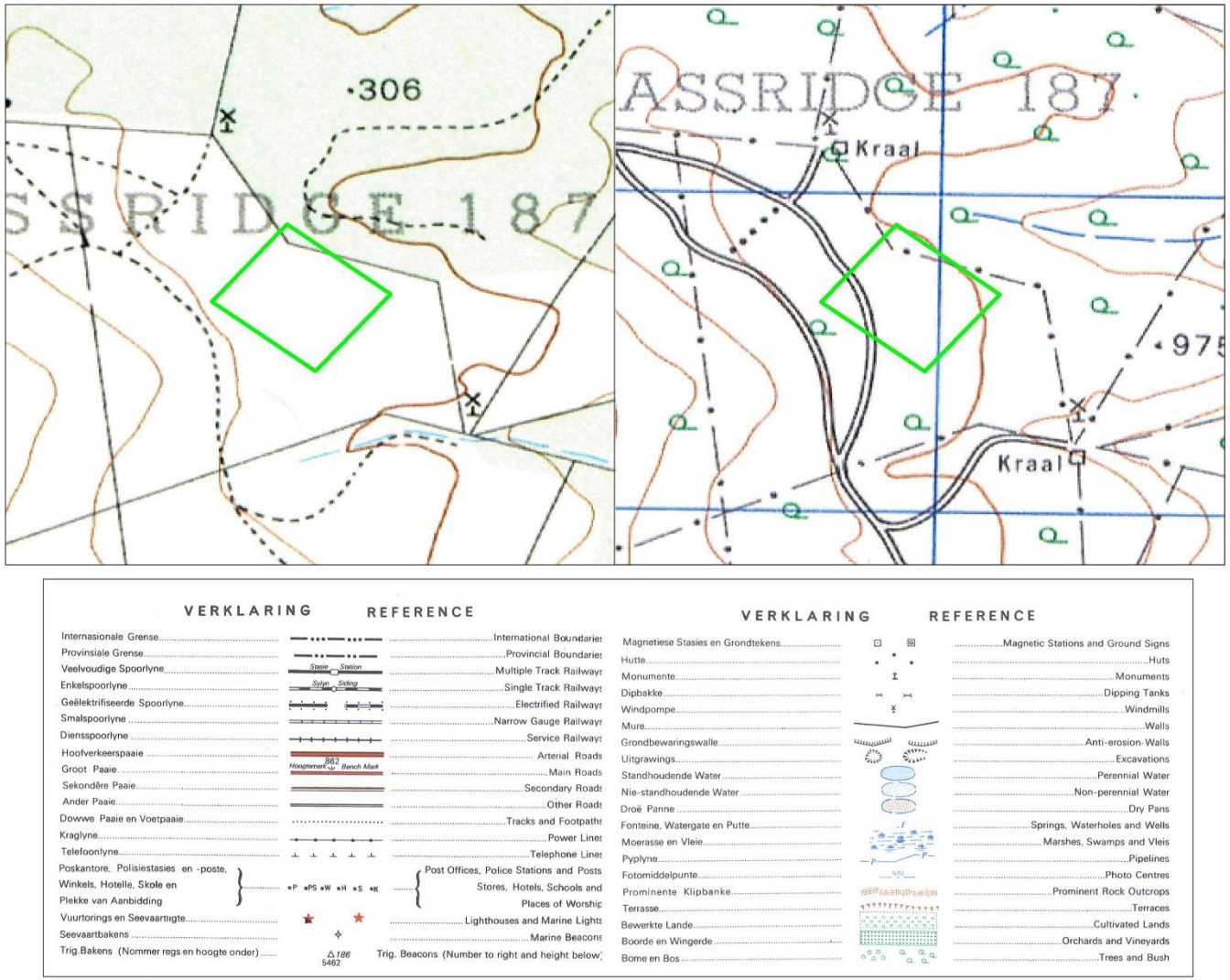

Figure 5-3: Historical topographic maps dating to 1970 (left) and 1986 (right) indicating the location of the project t area (green outline) in the past decades. Besides for an access road, no man-made structures or features are indicated on these maps.

5.2 The Archaeological Site Survey

An analysis of historical aerial imagery and archive maps of areas subject to this assessment suggests a landscape that seems to have remained relatively pristine during the last century. This inference was confirmed during an archaeological site assessment where no heritage remains were encountered within the project area. The following observations were made during the site survey.

5.2.1 The Stone Age

Stone Age remains associated with geo-morphological exposures, rock outcrops and drainage lines are known to exist in the larger Uitenhage area. However, no Stone Age scatters or occurrences were observed in the project footprint area.

5.2.2 The Iron Age Farmer Period

A frontier zone between the north and the south, this part of the Eastern Cape contains traces of precolonial Iron Age Farmer Period remnants. However, the site inspection produced no Iron Age farmer sites or remains.

5.2.3 The Historical / Colonial Period

Uitenhage and its surroundings have a long and extensive Colonial Period settlement history. From around the first half of the 19th century, the area was frequented by explorers, missionaries and farmers who all contributed to a recent history of contact and conflict. Still, no features or structures dating to Historical Period farming occurs in the project footprint and no features relating to the built environment of the early Historical Period were observed in the project area.

5.2.4 Graves

No human burial sites were observed within the project area.

6 RESULTS: STATEMENT OF SIGNIFICANCE AND IMPACT RATING

6.1 Potential Impacts and Significance Ratings[3]

The following section provides a background to the identification and assessment of possible impacts and alternatives, as well as a range of risk situations and scenarios commonly associated with heritage resources management. A guideline for the rating of impacts and recommendation of management actions for areas of heritage potential within the study area is supplied in Section 10.2 of Addendum 3.

6.1.1 General assessment of impacts on resources

Generally, the value and significance of archaeological and other heritage sites might be impacted on by any activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, of any archaeological material or object (as indicated in the National Heritage Resources Act (No 25 of 1999)). Thus, the destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. However, in the long run, the proximity of operations in any given area could result in secondary indirect impacts. The EIA process therefore specifies impact assessment criteria which can be utilised from the perspective of a heritage specialist study which elucidates the overall extent of impacts.

6.1.2 Direct impact rating

Direct or primary effects on heritage resources occur at the same time and in the same space as the activity, e.g. loss of historical fabric through demolition work. **Indirect effects or secondary effects** on heritage resources occur later in time or at a different place from the causal activity, or as a result of a complex pathway, e.g. restriction of access to a heritage resource resulting in the gradual erosion of its significance, which is dependent on ritual patterns of access (refer to Section 10.3 in the Addendum for an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected).

No sensitive heritage receptors were found in the project area and no potential impact to heritage resources is foreseen.

6.2 Evaluation Impacts

A number of archaeological and historical studies have been conducted in the Uitenhage area which points to a rich and diverse archaeological landscape. The heritage legacy of this area is mostly dominated by Stone Age and Colonial / Historical Period archaeology primarily related to farming, rural expansion and warfare of the past century.

6.2.1 Archaeology

The study did not identify any archaeological receptors which will be directly impacted by the proposed project and no impact on archaeological sites or features is anticipated.

6.2.2 Built Environment

Farmstead compounds are known to exist on farms around Grassridge but no buildings or man-made structures were noted in the project area. As such, impact on significant built environment receptors is not anticipated. As for the rest of the project area, the general landscape holds varied significance in terms of

[3] Based on: W inter, S. & Baumann, N. 2005. *Guideline for involving heritage specialists in EIA processes: Edition 1.*

the built environment as the area comprises historical farming remnants and relatively newly established agricultural townlands.

6.2.3 Cultural Landscape

Generally, the proposed project area and its surrounds are characterized by rural farmlands and developed crop fields with riparian vegetation to the north. Further away from the project area, the landscape displays undulating foothills with flatter plains in-between. This landscape stretches over many kilometres and the proposed project is unlikely to result in a significant impact on the or the landscape sense of place.

6.2.4 Graves / Human Burials Sites

No human burial sites were located within the project area. In the rural areas of the Eastern Cape Province, graves and cemeteries often occur around farmsteads in family burial grounds but they are also randomly scattered around archaeological and historical settlements. The probability of informal human burials encountered during development should thus not be excluded. In addition, human remains and burials are commonly found close to archaeological sites; they may be found in "lost" graveyards, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials.

6.3 Management actions

Recommendations for relevant heritage resource management actions are vital to the conservation of heritage resources. A general guideline for recommended management actions is included in Section 10.4 of Addendum 3.

OBJECTIVE: ensure conservation of heritage resources of significance, prevent unnecessary disturbance and/or destruction of previously undetected heritage receptors.

No specific action in terms of mitigation is required for the Dassiesridge BESS Development Project. However, the following general procedure is required for the site:

PROJECT COMPONENT/S	All phases of construction and operation.		
POTENTIAL IMPACT	Damage/destruction of sites.		
ACTIVITY RISK/SOURCE	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
MITIGATION: TARGET/OBJECTIVE	To locate previously undetected heritage remains / graves as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.		
MITIGATION: ACTION/CONTROL		**RESPONSIBILITY**	**TIMEFRAME**
Fixed Mitigation Procedure (**required**)			
Site Monitoring: Regular examination of trenches and excavations and particularly stone features identified in the project area.		ECO	Monitor as frequently as practically possible.
PERFORMANCE INDICATOR	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
MONITORING	Successful location of sites by person/s monitoring.		

7 RECOMMENDATIONS

The larger landscape around the project area indicate a rich heritage horizon encompassing particularly Stone Age and Colonial / Historical Period archaeology related to farming, rural expansion and warfare of the past century. No heritage receptors were noted in the project footprint but cognisance should nonetheless be taken of potential buried heritage remains that might be present in surface and sub-surface deposits. The following recommendations are made based on general observations in the proposed Dassiesridge BESS Development Project area:

- Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO is recommended for all stages of the project. It is particularly important that any activities that might involve the alteration or destruction of the irregular stone features in the project area are monitored as these structures might indicate burials sites. Should any subsurface palaeontological, archaeological or historical material, or be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500). Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that it is likely that further undetected archaeological remains might occur elsewhere in the landscape along water sources and drainage lines, fountains and pans, which would often have attracted human activity in the past. Also, since Stone Age material seems to originate from below present soil surfaces in eroded areas, the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits. Burials and historically significant structures dating to the Colonial Period occur on farms in the area and these resources should be avoided during all phases of construction and development, including the operational phases of the development.

In addition to these site-specific recommendations, careful cognizance should be taken of the following:

- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

8 GENERAL COMMENTS AND CONDITIONS

This AIA report serves to confirm the extent and significance of the heritage landscape of the proposed Dassiesridge BESS Development Project area. The larger heritage horizon encompasses rich and diverse archaeological landscapes and cognisance should be taken of heritage resources and archaeological material that might be present in surface and sub-surface deposits. If, during construction, any possible archaeological material culture discoveries are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find. Such material culture might include:

- Formal Earlier Stone Age stone tools.
- Formal MSA stone tools.
- Formal LSA stone tools.
- Potsherds
- Iron objects.
- Beads made from ostrich eggshell and glass.
- Ash middens and cattle dung deposits and accumulations.
- Faunal remains.
- Human remains/graves.
- Stone walling or any sub-surface structures.
- Historical glass, tin or ceramics.
- Fossils.

If such sites were to be encountered or impacted by any proposed developments, recommendations contained in this report, as well as endorsement of mitigation measures as set out by AMAFA, SAHRA, the National Resources Act and the CRM section of ASAPA will be required. It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, represent the area's complete archaeological legacy. Many sites/features may be covered by soil and vegetation and might only be located during sub-surface investigations. If subsurface archaeological deposits, artefacts or skeletal material were to be recovered in the area during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)). It must also be clear that Archaeological Specialist Reports will be assessed by the relevant heritage resources authority (SAHRA).

9 BIBLIOGRAPHY

Acocks, J. P. H. 1975. Veld Types of South Africa. Botanical Survey of South AfricaMemoir 28: 1-128.

Anderson, G. 2007. The Archaeological Survey of the Elitheni Mine, Indwe, Eastern Cape. Umlando

Binneman, J., Webley, L & Biggs, V. 1992. Preliminary notes on an Early Iron Age site in the Great Kei River Valley, Eastern Cape. Southern African Field Archaeology 1: 108-109.

Binneman, J. 1996. Preliminary report on the investigations at Kuluhele, and Early Iron Age Farming settlement in the Great Kei River Valley, Eastern Cape. Southern African Field Archaeology 5: 28-35.

Binneman, J. (Albany Museum). 2008. A Phase 1 Archaeological Heritage Impact Assessment of the proposed Amanzi Country Estate, Uitenhage District, Nelson Mandela Bay Municipality, Eastern Cape.

Blundell, G. 2004. Nqabayo's Nomansland: San Rock Art and the Somatic Past. Studies in Global Archaeology 2. Uppsala University, Uppsala.

Booth, C. 2012. An archaeogocal desktop study foe the proposed Elliot Wind Energy Facility west of Elliot, Eastern Cape Province. Savannah Environmental.

Booth, C. (Albany Museum). 2012. A Phase 1 Archaeological Impact Assessment: Proposed InnoWind Wind Energy Facility (WEF) on Portions 1, 2 and 3 of the Grassridge as well as Portion 1 of the Farm Oliphantskop 201, Coega, Nelson Mandela Bay Municipality, Eastern Cape Province.

Brink, E. & Krige, S. 1998, "Remapping and Remembering the South African War in Johannesburg and Pretoria", paper for the UNISA Library Conference, Rethinking the South African War, 1899-1902, 3-5 August 1998.

Carter, P.L. 1976. 'The Effect of Climatic Change on Settlement in Eastern Lesotho during the Middle and Later Stone Age.' World Archaeology, 8, 198 – 206.

Cronin, M. 1982. Radiocarbon dates for the Early Iron Age in the Transkei. South African Journal of Science 78 (1): 38.

Deacon, H.]. 1970. The Acheulian occupation at Amanzi Springs, Uitenhage District, Cape Province. Annals of the Cape Provincial Museums. 8:89-189.

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

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

Derricourt, R. 1977. Prehistoric Man in the Ciskei and Transkei. Struik Publishers. Cape Town

Esterhuysen, A., 2007. The Earlier Stone Age. In Bonner, P., Esterhuysen, A., Jenkins, T. (eds.): A Search for Origins: Science, History and South Africa's 'Cradle of Humankind'. Johannesburg: Wits University Press. Pg 110 -121.

Fairley, K. & Hemming, M. 2007. Environmental Impact Assessment and Environmental Management Plan for the Exploration for Coal Bed Methane, Elliot Project, Eastern Cape Province.

Feely, J. M. 1987. Final Report for the Ecology of the Iron Age Project: March 1983 to March 1987. Unpublished report. University of Transkei, Botany Department

Gilliomee, H. 2005, Rediscovering and Re-imagining the Afrikaners in a New South Africa: Autobiographical notes on writing an uncommon biography, Paper presented at WISER, University of the Witwatersrand [First presented at the University of Port Elizabeth: Langenhoven Memorial Lecture, September, 2003].

Gilliomee, H. 2003, The Afrikaners: Biography of a People, Tafelberg: Cape Town.

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

Hall, M. 1996. Archaeology Africa. Cape Town, Johannesburg: David Philip

Hamilton, C. (Ed.) 1995. The Mfecane Aftermath. Johannesburg: Wits U.P.

Henry, L. 2010. Rock art and the contested landscape of the North Eastern Cape. Unpublished MA thesis. University of the Witwatersrand.

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

Maggs, T. The Iron Age farming communities. In Duminy, A. and Guest, B. 1989. Natal and Zululand: from Earliest Times to 1910. A New History. Pg. 28-46. University of Natal Press. Pietermaritzburg

Mallen, L. 2008. Rock art and identity in the North Eastern Cape. Unpublished MA thesis. University of the Witwatersrand.

Nortje, K. 2006. Land as a Site of Remembrance: An Ethnographic Study in Barkly East. Unpublished MA thesis. University of the Witwatersrand.

Opperman, H. 1987. The Later Stone Age of the Drakensberg Range and its Foothills. Cambridge Monographs in African Archaeology 19. BAR International Series 339.

Peires, J. 1981. The House of Phalo. A History of the Xhosa People in the days of their Independence. Ravan Press: Johannesburg

Prins, F. 2010. A cultural heritage survey of the proposed SAPPI to Elliot and Ugie substations 132kV powerline in the Eastern Cape Province. Active Heritage

Raper, P.E. 2004. South African place names. Johannesburg: Jonathan Ball Publishers

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

Taylor, M.O.V. 1979a. Late Iron Age settlements on the northern edge of the Vredefort Dome. MA Dissertation. University of Johannesburg. Johannesburg

Van Warmelo, N.J. 1935. A Preliminary Survey of the Bantu Tribes of South Africa. Department of Native Affairs, Ethnological Publications Vol. V. Pretoria: Government Printer.

Wright, J. and Hamilton, C. 1989. Tradition and transformations – The Phongolo- Mzimkhulu region in the late eighteenth and early nineteenth centuries.

Van Ryneveld, K. (ArchaeoMaps). 2014. Phase 1 Archaeological & Cultural Heritage Impact Assessment – The Dassiesridge Wind Energy Facility (WEF), between Kirkwood and Uitenhage, Cacadu District, Eastern Cape, South Africa.

Van Warmelo, N.J. 1935. A Preliminary Survey of the Bantu Tribes of South Africa. Ethnographic Publications No. 5. Pretoria: Government Printer.

9.1 Web Sources and Legislation

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

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

SAHRA, 2005. Minimum Standards for the Archaeological and the Palaeontological Components of Impact Assessment Reports, Draft version 1.4.

www.sahra.org.za/sahris
Accessed 2019-12-01

http://csg.dla.gov.za/index.html
Accessed 2019-12-01.

http://www.theheritageportal.co.za/article/uitenhages-evolution-1804-1910
Accessed 2019-12-01.

10 ADDENDUM 1: HERITAGE LEGISLATION BACKGROUND

10.1 CRM: Legislation, Conservation and Heritage Management

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

10.1.1 Legislation regarding archaeology and heritage sites

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

d. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act of 1999 a historical site is any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years. This clause is commonly known as the "60-years clause". Buildings are amongst the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Iron Age settlements. "Tell" refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts).

The Act identifies heritage objects as:

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

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

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

and

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

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

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

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

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

and

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

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

(i) 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 a formal cemetery administered by a local authority;

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

e. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925

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

10.1.2 Background to HIA and AIA Studies

South Africa's unique and non-renewable archaeological and palaeontological heritage sites are 'generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

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

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

development categorised as:

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

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

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

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

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

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

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

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

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

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

And:

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

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

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

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

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

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

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

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

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

years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects. Heritage resources management and conservation.

10.2 Assessing the Significance of Heritage Resources

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people have lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable.* Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

- Categories of significance

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

- *Aesthetic value:*

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

- *Historic value:*

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

- *Scientific value:*

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

- *Social value:*

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

It is important for heritage specialist input in the EIA process to take into account the heritage management structure set up by the NHR Act. It makes provision for a 3-tier system of management including the South Africa Heritage Resources Agency (SAHRA) at a national level, Provincial Heritage Resources Authorities (PHRAs) at a provincial and the local authority. The Act makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

Formally protected sites:

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the provincial HRA (MP-PHRA).
- Grade 3 or local heritage sites.

Generally protected sites:

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 60 years.
- Structures older than 60 years.

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

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

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

11 ADDENDUM 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE

11.1 Site Significance Matrix

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. 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. The following matrix is used for assessing the significance of each identified site/feature.

2. SITE EVALUATION			
2.1 Heritage Value (NHRA, section 2 [3])	High	Medium	Low
It has importance to the community or pattern of South Africa's history or pre-colonial history.			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			
It is of importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.			
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.			
It has marked or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).			
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.			
It has significance through contributing towards the promotion of a local sociocultural identity and can be developed as a tourist destination.			
It has significance relating to the history of slavery in South Africa.			
It has importance to the wider understanding of temporal changes within cultural landscapes, settlement patterns and human occupation.			
2.2 Field Register Rating			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
2.3 Sphere of Significance	High	Medium	Low
International			
National			
Provincial			
Local			
Specific community			

11.2 Impact Assessment Criteria

The following table provides a guideline for the rating of impacts and recommendation of management actions for sites of heritage potential.

Significance of the heritage resource

This is a statement of the nature and degree of significance of the heritage resource being affected by the activity. From a heritage management perspective, it is useful to distinguish between whether the significance is embedded in the physical fabric or in associations with events or persons or in the experience of a place; i.e. its visual and non-visual qualities. This statement is a primary informant to the nature and degree of significance of an impact and thus needs to be thoroughly considered. Consideration needs to be given to the significance of a heritage resource at different scales (i.e. site-specific, local, regional, national or international) and the relationship between the heritage resource, its setting and its associations.

Nature of the impact

This is an assessment of the nature of the impact of the activity on a heritage resource, with some indication of its positive and/or negative effect/s. It is strongly informed by the statement of resource significance. In other words, the nature of the impact may be historical, aesthetic, social, scientific, linguistic or architectural, intrinsic, associational or contextual (visual or non-visual). In many cases, the nature of the impact will include more than one value.

Extent

Here it should be indicated whether the impact will be experienced:

- On a site scale, i.e. extend only as far as the activity;
- Within the immediate context of a heritage resource;
- On a local scale, e.g. town or suburb
- On a metropolitan or regional scale; or
- On a national/international scale.

Duration

Here it should be indicated whether the lifespan of the impact will be:

- Short term, (needs to be defined in context)
- Medium term, (needs to be defined in context)
- Long term where the impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or by human intervention; or
- Permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

Of relevance to the duration of an impact are the following considerations:

- Reversibility of the impact; and
- Renewability of the heritage resource.

Intensity

Here it should be established whether the impact should be indicated as:

- Low, where the impact affects the resource in such a way that its heritage value is not affected;
- Medium, where the affected resource is altered but its heritage value continues to exist albeit in a modified way; and
- High, where heritage value is altered to the extent that it will temporarily or permanently be damaged or destroyed.

Probability

This should describe the likelihood of the impact actually occurring indicated as:

- Improbable, where the possibility of the impact to materialize is very low either because of design or historic experience;
- Probable, where there is a distinct possibility that the impact will occur;
- Highly probable, where it is most likely that the impact will occur; or
- Definite, where the impact will definitely occur regardless of any mitigation measures

Confidence

This should relate to the level of confidence that the specialist has in establishing the nature and degree of impacts. It relates to the level and reliability of information, the nature and degree of consultation with I&AP's and the dynamic of the broader socio-political context.

- High, where the information is comprehensive and accurate, where there has been a high degree of consultation and the socio-political context is relatively stable.
- Medium, where the information is sufficient but is based mainly on secondary sources, where there has been a limited targeted consultation and socio-political context is fluid.
- Low, where the information is poor, a high degree of contestation is evident and there is a state of socio-political flux.

Impact Significance

The significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature and degree of heritage significance and the nature, duration, intensity, extent, probability and confidence of impacts and can be described as:

- Low; where it would have a negligible effect on heritage and on the decision
- Medium, where it would have a moderate effect on heritage and should influence the decision.
- High, where it would have, or there would be a high risk of, a big effect on heritage. Impacts of high significance should have a major influence on the decision;
- Very high, where it would have, or there would be high risk of, an irreversible and possibly irreplaceable negative impact on heritage. Impacts of very high significance should be a central factor in decision-making.

11.3 Direct Impact Assessment Criteria

The following table provides an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected

	TYPE OF DEVELOPMENT			
HERITAGE CONTEXT	**CATEGORY A**	**CATEGORY B**	**CATEGORY C**	**CATEGORY D**
CONTEXT 1 High heritage Value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
CONTEXT 2 Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
CONTEXT 3 Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
CONTEXT 4 Low to no heritage value	Little or no heritage impact expected	Little or no heritage impact expected	Minimal heritage value expected	Moderate heritage impact expected

NOTE: A DEFAULT "LITTLE OR NO HERITAGE IMPACT EXPECTED" VALUE APPLIES WHERE A HERITAGE RESOURCE OCCURS OUTSIDE THE IMPACT ZONE OF THE DEVELOPMENT.

HERITAGE CONTEXTS	CATEGORIES OF DEVELOPMENT
Context 1: Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources **Context 2:** Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources. **Context 3:**	**Category A: Minimal intensity development** - No rezoning involved; within existing use rights. - No subdivision involved. - Upgrading of existing infrastructure within existing envelopes - Minor internal changes to existing structures - New building footprints limited to less than 1000m2. **Category B: Low-key intensity development** - Spot rezoning with no change to overall zoning of a site. - Linear development less than 100m

Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources **Context 4:** Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage.	- Building footprints between 1000m2-2000m2 - Minor changes to external envelop of existing structures (less than 25%) - Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%). **Category C: Moderate intensity development** - Rezoning of a site between 5000m2-10 000m2. - Linear development between 100m and 300m. - Building footprints between 2000m2 and 5000m2 - Substantial changes to external envelop of existing structures (more than 50%) - Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%) **Category D: High intensity development** - Rezoning of a site in excess of 10 000m2 - Linear development in excess of 300m. - Any development changing the character of a site exceeding 5000m2 or involving the subdivision of a site into three or more erven. - Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%)

11.4 Management and Mitigation Actions

The following table provides a guideline of relevant heritage resources management actions is vital to the conservation of heritage resources.

No further action / Monitoring

Where no heritage resources have been documented, heritage resources occur well outside the impact zone of any development or the primary context of the surroundings at a development footprint has been largely destroyed or altered, no further immediate action is required. Site monitoring during development, by an ECO or the heritage specialist are often added to this recommendation in order to ensure that no undetected heritage\ remains are destroyed.

Avoidance

This is appropriate where any type of development occurs within a formally protected or significant or sensitive heritage context and is likely to have a high negative impact. Mitigation is not acceptable or not possible. This measure often includes the change / alteration of development planning and therefore impact zones in order not to impact on resources.

Mitigation

This is appropriate where development occurs in a context of heritage significance and where the impact is such that it can be mitigated to a degree of medium to low significance, e.g. the high to medium impact of a development on an archaeological site could be mitigated through sampling/excavation of the remains. Not all negative impacts can be mitigated.

Compensation

Compensation is generally not an appropriate heritage management action. The main function of management actions should be to conserve the resource for the benefit of future generations. Once lost it cannot be renewed. The circumstances around the potential public or heritage benefits would need to be exceptional to warrant this type of action, especially in the case of where the impact was high.

Rehabilitation

Rehabilitation is considered in heritage management terms as a intervention typically involving the adding of a new heritage layer to enable a new sustainable use. It is not appropriate when the process necessitates the removal of previous historical layers, i.e. restoration of a building or place to the previous state/period. It is an appropriate heritage management action in the following cases:

- The heritage resource is degraded or in the process of degradation and would benefit from rehabilitation.
- Where rehabilitation implies appropriate conservation interventions, i.e. adaptive reuse, repair and maintenance, consolidation and minimal loss of historical fabric.
- Where the rehabilitation process will not result in a negative impact on the intrinsic value of the resource.

Enhancement