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AGES OMEGA: PROPOSED CLUSTER 2 RS5-3 WATER SUPPLY UPGRADE DEVELOPMENT, LUBISI, CHRIS HANI DISTRICT MUNICIPALITY EASTERN CAPE PROVINCE

Archaeological Impact Assessment

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ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF AREAS DEMARACTED FOR THE CLUSTER 2 RS5-3 WATER SUPPLY UPGRADE PROJECT, LUBISI, CHRIS HANI DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE

August 2016

Conducted on behalf of:

AGES Omega
Exigo Sustainability

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Document History

Document Version 1 (Draft) – 22 August 2016

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Exigo Sustainability promotes the conservation of sensitive archaeological and heritage resources and therefore uncompromisingly adheres to 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). In order to ensure best practices and ethics in the examination, conservation and mitigation of archaeological and heritage resources, Exigo Sustainability follows the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment as set out by the South African Heritage Resources Agency (SAHRA) and the CRM section of the Association for South African Professional Archaeologists (ASAPA).

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 Cluster 2 RS5-3 Water Supply Upgrade 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: Neels Kruger
Company: Exigo Sustainability
Date: 22 August 2016

EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study in the Lubisi area, subject to an Environmental Impact Assessment (EIA) process for the proposed upgrade of bulk water supply infrastructure of approximately 40km. The AIA was conducted subject to requirements as set out by the National Environmental Management Act (Act 107 of 1998), the National Heritage Resources Act (NHRA - Act 25 of 1999). 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 provincial heritage agency (EC-PHRA) and recommendations contained in this document will be reviewed.

A number of archaeological and historical studies have been conducted in the Eastern Cape. Here, the Drakensberg and its fertile surroundings have provided resources for humans and their predecessors for more than 1,7million years. As such, the history of the Eastern Cape is reflected in a rich archaeological landscape. Sites, documenting Earlier, Middle and Later Stone Age habitation occur across the province, mostly in open air locales or in sediments alongside rivers or pans. In addition, a wealth of Later Stone Age rock art sites is to be found in the larger landscape. These sites occur on hilltops, slopes, rock outcrops and occasionally in river beds. Later, Bantu-speaking tribes moved into this area from the northern parts of Southern Africa and settled here. This later occupation depicts the interaction between the Iron Age farming societies and their adaptation and utilization to the environment, the migration of people, technological advances, warfare and contact and conflict. Contained in the archaeology and history of the Eastern Cape are traces of conquests by Bantu-speakers, Europeans and British imperialism encompassing the struggle for land, resources and political power. The study area has been altered extensively by recent and historical activities largely sterilising the area of heritage remains. A large number of heritage resources were nonetheless identified in the Cluster 2 RS5-3 Water Supply Upgrade Project study areas.

- A number of contemporary livestock stone enclosures (**Site EXIGO-CL2-FT01 - Site EXIGO-CL2-FT05**) of low significance were document in various locations in the project area. The features are located in close proximity of the project area and it is recommended that the sites and any activities in its surrounds be monitored in order to avoid the destruction of previously undetected heritage remains.
- The remains of three Historical Period sites (**Site EXIGO-CL2-HP03, Site EXIGO-CL2-HP04, Site EXIGO-CL2-HP08**), occurring throughout the project area are of medium-low significance due to the poor preservation of the sites. The sites are located in close proximity of the proposed pipeline alignments and it is recommended that the sites and any activities in its surrounds be monitored in order to avoid the destruction of previously undetected heritage remains. The necessary destruction permits should be obtained from the relevant Heritage Resources Authorities prior to the possible destruction of the features.
- Two large Historical Period settlement areas with stone wall enclosures (**Site EXIGO-CL2-HP01 - Site EXIGO-CL2-HP02**) were documented near the villages of Nyongwana and Guse. In addition, a number of Historical Period buildings (**Site EXIGO-CL2-HP05 - Site EXIGO-CL2-HP07**) occur along the main gravel road in Southeyville. The sites are of medium significance and they are located in close proximity of the proposed pipeline alignments. It is primarily recommended that the proposed footprint be adjusted to avoid these resources and that a conservation buffer of at least 20m around the site be implemented. However, should impact on the sites prove inevitable, the occurrences should be adequately documented by means of Phase 2 Specialist Studies. Such studies should

minimally include the mapping, documentation and possible sampling of the sites in order to conserve the historical fabric of the heritage resources. The necessary excavation and destruction permits should be obtained from the relevant Heritage Resources Authorities prior to site sampling and destruction. Generally, the sites should be monitored by an informed ECO in order to avoid the destruction of previously undetected heritage remains.

- Graves and burials were identified in various locations within close proximity of the proposed pipeline project alignments (**Site EXIGO-CL2-BP01 - Site EXIGO-CL2-BP20**). The sites are of high significance and these sites might be impacted on by the proposed project. In most of these cases, the graves and cemeteries are situated within settlements, often around or very close to homesteads and homestead buildings, roads and other infrastructure. These locations of human burials along the proposed alignment present challenges in terms of the conservation and management of these sensitive heritage receptors. As a primary measure, Heritage Authority (SAHRA) guidelines require a 100m conservation buffer for all burials but the implementation of this guideline will prove problematic and impractical in a number of instances considering the locations of many of the burials, as noted above. It is recommended that human burials occurring in close vicinity of the proposed pipeline alignment be fenced off and conserved and a conservation buffer of at least 20m be maintained around the heritage receptors. Note that this recommended relaxation of the standard 50m buffer for burials in closed proximity of the alignment is subject to approval by SAHRA. It is recommended that all burials, irrespective of their placement along the alignment be fenced off, conserved and that access control be applied during construction. The developer should carefully liaise with the heritage specialist and SAHRA with regards to the management and monitoring of any human grave or cemetery in order to detect and manage negative impact on the sites.

  Should impact on any human burial prove inevitable, full grave relocations are recommended for these burial grounds. This measure should be undertaken by a qualified archaeologist, and in accordance with relevant legislation, permitting, statutory permissions and subject to any local and regional provisions and laws and by-laws pertaining to human remains. A full social consultation process should occur in conjunction with the mitigation of cemeteries and burials.
- A careful watching brief monitoring process is recommended whereby an informed ECO inspect the construction sites on regular basis in order to monitor possible impact on heritage resources. Should any subsurface paleontological, archaeological or historical material or heritage resources be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately

A Palaeontological Impact Assessment and / or Desktop Study is recommended for the study area and, should fossil remains such as fossil fish, reptiles or petrified wood be exposed during construction, these objects should carefully safeguarded and the relevant heritage resources authority (EC-PHRA) should be notified immediately so that the appropriate action can be taken by a professional palaeontologist.

Heritage resources occur inside and in close proximity of alignments proposed for water pipelines areas proposed for the Cluster 2 RS5-3 Water Supply Upgrade Project and potential peripheral impact on these heritage receptors is foreseen. However, this impact can be mitigated by means of avoidance and site monitoring during development. In the opinion of the author of this Archaeological Impact Assessment Report, the proposed Cluster 2 RS5-3 Water Supply Upgrade Project may proceed from a culture resources

management perspective, provided that mitigation measures are implemented where applicable, and provided that no subsurface heritage remains are encountered during construction

Cluster 2 RS5-3 Water Supply Upgrade Project Heritage Sites Locations

Site Code	Coordinate S	Coordinate E	Short Description
EXIGO-CL2-BP01	-31.8002	27.44781	Burial Site
EXIGO-CL2-BP02	-31.8059	27.45388	Burial Site
EXIGO-CL2-BP03	-31.81	27.45842	Burial Site
EXIGO-CL2-BP04	-31.8106	27.45905	Burial Site
EXIGO-CL2-BP05	-31.8111	27.4596	Burial Site
EXIGO-CL2-BP06	-31.8125	27.461	Burial Site
EXIGO-CL2-BP07	-31.813	27.46143	Burial Site
EXIGO-CL2-BP08	-31.7961	27.4564	Burial Site
EXIGO-CL2-BP09	-31.7984	27.4628	Burial Site
EXIGO-CL2-BP10	-31.8115	27.47213	Burial Site
EXIGO-CL2-BP11	-31.8261	27.45794	Burial Site
EXIGO-CL2-BP12	-31.8272	27.46205	Burial Site
EXIGO-CL2-BP13	-31.8281	27.47027	Burial Site
EXIGO-CL2-BP14	-31.8287	27.47311	Burial Site
EXIGO-CL2-BP15	-31.8357	27.47642	Burial Site
EXIGO-CL2-BP16	-31.8369	27.47975	Burial Site
EXIGO-CL2-BP17	-31.8375	27.47998	Burial Site
EXIGO-CL2-BP18	-31.8709	27.44786	Burial Site
EXIGO-CL2-BP19	-31.8696	27.43843	Burial Site
EXIGO-CL2-BP20	-31.869	27.43566	Burial Site
EXIGO-CL2-FT01	-31.796	27.43991	Contemporary Feature
EXIGO-CL2-FT02	-31.8029	27.44743	Contemporary Feature
EXIGO-CL2-FT03	-31.8041	27.45132	Contemporary Feature
EXIGO-CL2-FT04	-31.8059	27.45376	Contemporary Feature
EXIGO-CL2-FT05	-31.8072	27.45524	Contemporary Feature
EXIGO-CL2-HP01	-31.82265	27.45864	Historical Period Site
EXIGO-CL2-HP02	-31.81184	27.45835	Historical Period Site
EXIGO-CL2-HP03	-31.79932	27.44802	Historical Period Site
EXIGO-CL2-HP04	-31.7965	27.4441	Historical Period Site
EXIGO-CL2-HP05	-31.7933	27.45484	Historical Period Site
EXIGO-CL2-HP06	-31.7961	27.4568	Historical Period Site
EXIGO-CL2-HP07	-31.7987	27.45884	Historical Period Site
EXIGO-CL2-HP08	-31.838	27.48031	Historical Period Site

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It is essential that cognisance be taken of the larger archaeological landscape of the Eastern Cape Province and the Lubisi region in order to avoid the destruction of previously undetected heritage sites. Should any previously undetected heritage resources be exposed or uncovered during construction phases of the proposed project, these should immediately be reported to the EC-PHRA. Since the intrinsic heritage and social value of graves and cemeteries are highly significant, these resources require special management measures. Should human remains be discovered at any stage, these should be reported to the Heritage Specialist and relevant authorities (EC-PHRA, SAHRA) and development activities should be suspended until the site has been inspected by the Specialist. The Specialist will advise on further management actions and possible relocation of human remains in accordance with the Human Tissue Act (Act 65 of 1983 as amended), the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), the National Heritage Resources Act (Act no. 25 of 1999) and any local and regional provisions, laws and by-laws pertaining to human remains. A full social consultation process should occur in conjunction with the mitigation of cemeteries and burials.

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

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

Archaeology:
The study of the human past through its material remains.

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.

Ceramic Facies:
In terms of the cultural representation of ceramics, a facies is denoted by a specific branch of a larger ceramic tradition. A number of ceramic facies thus constitute a ceramic tradition.

Ceramic Tradition:
In terms of the cultural representation of ceramics, a series of ceramic units constitutes as ceramic tradition.

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.

Culture:
A contested term, "culture" could minimally be defined as the learned and shared things that people have, do and think.

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.

Ecofact:
Non artefactual material remains that has cultural relevance which provides information about past human activities. Examples would include remains or evidence of domesticated animals or plant species.

Excavation:
The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and the other material covering and accompanying it.

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

GIS:
Geographic Information Systems are computer software that allows layering of various types of data to produce complex maps; useful for predicting site location and for representing the analysis of collected data within sites and across regions.

Historical / Colonial archaeology:
Primarily that aspect of archaeology which is complementary to history based on the study of written sources. In the South African context it concerns the recovery and interpretation of relics left in the ground in the course of Europe's discovery of South Africa, as well as the movements of the indigenous groups during, and after the "Great Scattering" of Bantu-speaking groups – known as the *mfecane* or *difaqane*.

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.

Iron Age:
Also known as "Farmer Period", the "Iron Age" is an archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture.

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

Management / Management Actions:

Actions – including planning and design changes - that enhance benefits associated with a proposed development, or that avoid, mitigate, restore, rehabilitate or compensate for the negative impacts.

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.

Oral Histories:

The historical narratives, stories and traditions passed from generation to generation by word of mouth.

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.

Relative dating:

The process whereby the relative antiquity of sites and objects are determined by putting them in sequential order but not assigning specific dates.

Rock Art Research:

Rock art can be "decoded" in order to inform about cultural attributes of prehistoric societies, such as dress-code, hunting and food gathering, social behaviour, religious practice, gender issues and political issues.

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.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

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,

Slag:

The material residue of smelting processes from metalworking.

Stone Age:
An archaeological term used to define a period of stone tool use and manufacture.

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.

Tradition:

Artefact types, assemblages of tools, architectural styles, economic practices or art styles that last longer than a phase and even a horizon are describe by the term *tradition*. A common example of this is the early Iron Age tradition of Southern Africa that originated ± 200 AD and came to an end at about 900 AD.

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.

Tuyère:

A ceramic blow-tube used in the process of iron smelting / reduction.

LIST OF ABBREVIATIONS

Abbreviation	Description
ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
BCE	Before Common Era
CRM	Culture Resources Management
EC-PHRA	Eastern Cape Provincial Heritage Resources Agency
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
KZNHA	KwaZulu-Natal Heritage Act of 2008
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
EC - PHRA	Eastern Cape Provincial Heritage Resources Authorities
SAFA	Society for Africanist Archaeologists
SAHRA	South African Heritage Resources Association
YCE	Years before Common Era (Present)

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1 BACKGROUND

1.1 Scope and Motivation

Exigo Sustainability was commissioned by AGES Omega for an Archaeological Impact Assessment (AIA) study subject to an Environmental Impact Assessment (EIA) process for the proposed Cluster 2 RS5-3 Water Supply Upgrade Project in the Lubisi area of 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 Sustainability'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

The Cluster 2 RS5-3 Water Supply Upgrade Project entails the upgrade and installation of bulk water pipelines and reticulation lines of approximately 40km for the following villages in the Lubisi area (see Figure 1-1):

- Nyongwana
- Southeyville
- Diamond
- Guse
- Manumeni
- KwaGzina

Figure 1-1: Aerial image indicating infrastructure components subject to the Cluster 2 RS5-3 Water Supply Upgrade Project.

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. Heritage specialist input in EIA processes can play a positive role in the development process by enriching an understanding of the past and its contribution to the present. It is also a legal requirement for certain development categories which may have an impact on heritage resources (Refer to Section 2.5.2).

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)** and the **KwaZulu-Natal Heritage Act (KZNHRA - Act of 2008)**. In addition, the NHRA and the KZNHRA 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 detailed updated description of all additional 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 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.*
- *Obtain a comment from the EC-PHRA.*

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 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.

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 A.

2 REGIONAL CONTEXT

2.1 Area Location

The Cluster 2 RS5-3 Water Supply Upgrade Project study area is located in the Lubisi area in the Chris Hani District Municipality of the Eastern Cape Province. The R61 route passes approximately 15km south of the project area. The area is located below the Southern Drakensberg escarpment in the Drakensberg Foothill Moist Grassland lowlands, comprising mainly of agricultural lands. The small town of Covimvaba lies 20km south and Queenstown is situated 50km west of the project area. The study areas appear on 1:50000 map sheet 3127CD (see Figure 2-1) and coordinates for the proposed project are as follows :

S31.822663° E27.464888°

2.2 Area Description: Receiving Environment

The Lubishi Dam is consists predominantly of mountainous areas with flatter parcels of developable land one the plateaus, terraces and areas adjacent to the rivers. The vegetation mainly consists of grassland, with pockets of natural bush thicket 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. The area represents communal land.

2.3 Site Description

The project area is located in a rolling to mountainous terrain. The study area is located in a valley surrounded by highs to the east and west. The Lubisi dam occurs directly north of the study area and the Indwe River as outflow from the dam flows west of the site. A number of small villages such as Nyongwana, Southeyville, Diamond, Guse, Manumeni, KwaGzina occur in the study area. Generally, vegetation in the landscape is scattered and scant where overgrazing, erosion and agricultural activities have altered much of the area.

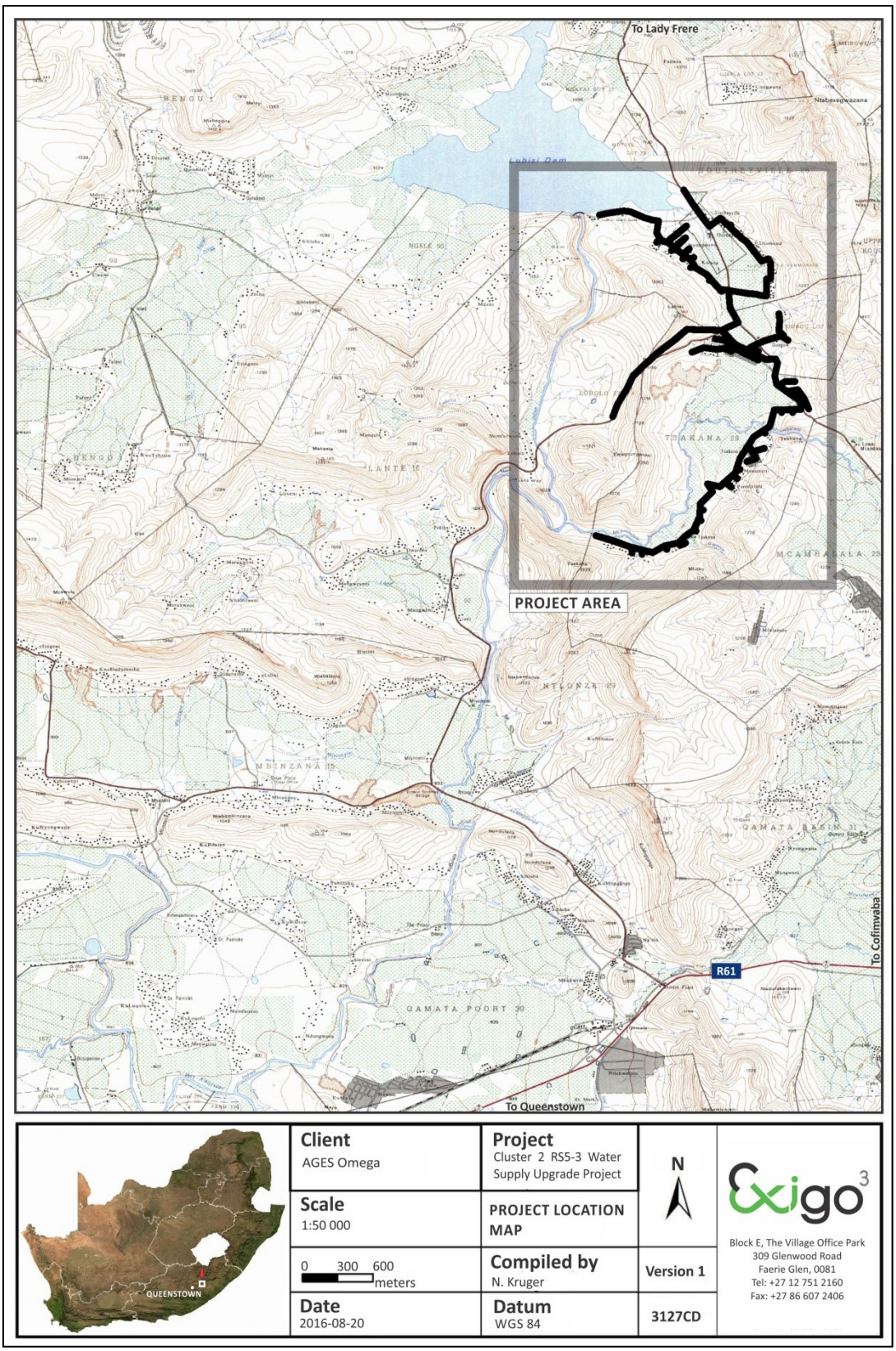

Figure 2-1: 1:50 00 Map representation of the location of the Cluster 2 RS5-3 Water Supply Upgrade Project Area (sheet 3127CD).

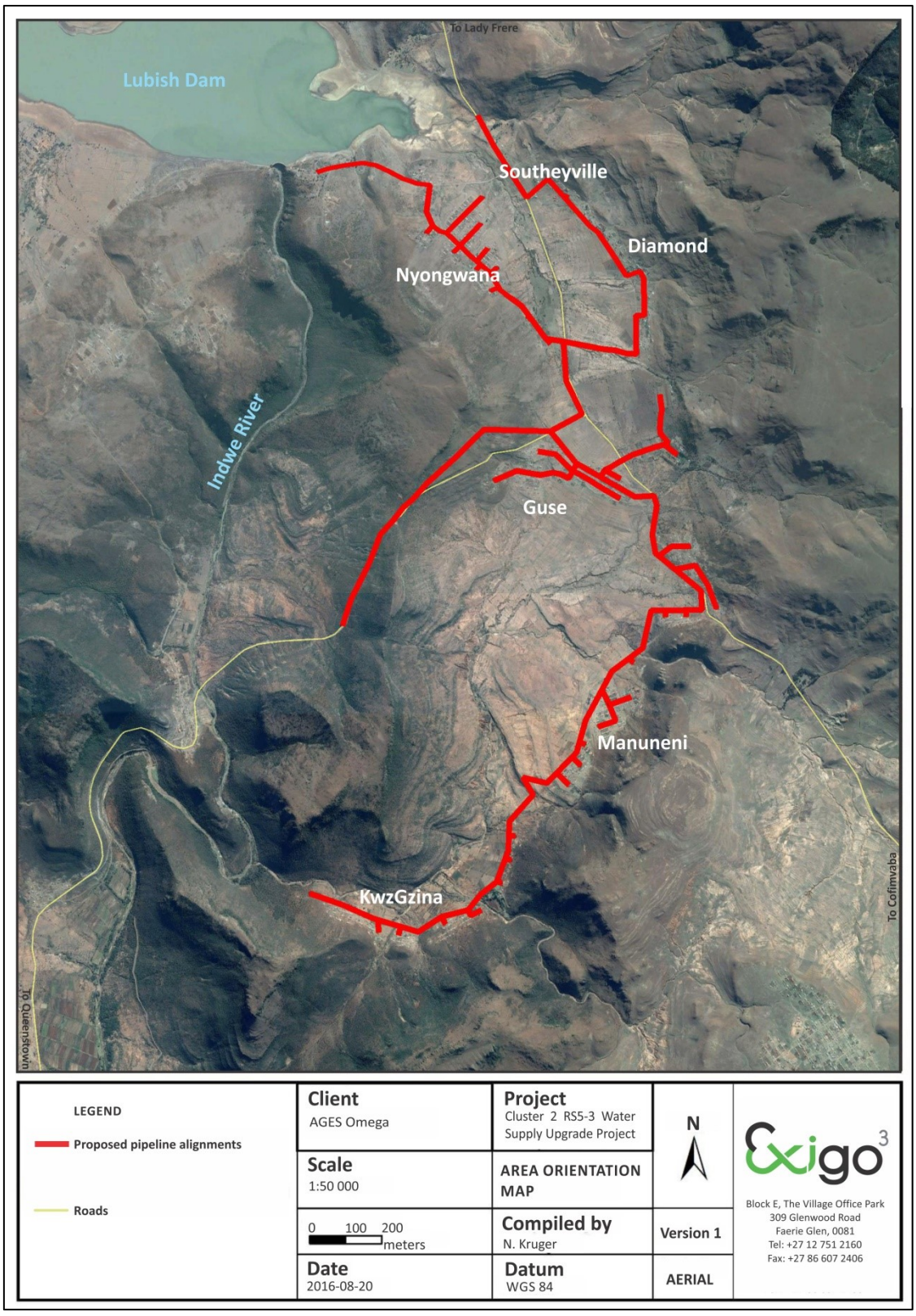

Figure 2-2: Aerial representation of the regional setting for the Cluster 2 RS5-3 Water Supply Upgrade Project area.

Figure 2-3: Panorama view of the larger Lubisi area at the time of the field survey (August 2016).

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 Queenstown has been relatively well documented in terms of its archaeology and history. A desktop study was prepared in order to contextualize the proposed project within a larger historical milieu. The study focused on relevant previous studies, archaeological and archival sources, aerial photographs, historical maps and local histories, all pertaining to the Lubisi area and the larger landscape of this section of the Eastern Cape Province.

3.1.2 Aerial Representations and Survey

Aerial photography is often employed to locate and study archaeological sites, particularly where larger scale area surveys are performed. This method was applied to assist the pedestrian and automotive site surveys where depressions, variation in vegetation, soil marks and landmarks were examined. 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. By superimposing high frequency aerial photographs with images generated with Google Earth, potential sensitive areas were subsequently identified, geo-referenced and transferred to a handheld GPS device. These areas served as referenced points from where further vehicular and pedestrian surveys were carried out. From the aerial survey it is evident that surface areas subject to the Cluster 2 RS5-3 Water Supply Upgrade Project have been subjected to major historical and more recent disturbances and impacts as a result of natural agents as well as agriculture and urbanisation.

3.1.3 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the alignments proposed for the Cluster 2 RS5-3 Water Supply Upgrade Project was conducted in August 2016. The process encompassed a systematic field survey in accordance with standard archaeological practice by which heritage resources are observed and documented. In order to sample surface areas systematically and to ensure a high probability of site recording alignments identified for water pipes were systematically surveyed on foot and by motor vehicle, GPS reference points were visited and random spot checks were made (see detail in previous section). Using a Garmin E-trex Legend GPS objects and structures of archaeological / heritage value were recorded and photographed with a Canon 450D 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. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion.

3.2 Limitations

3.2.1 Access

The Lubisi area and all areas subject to this assessment are accessed via a dirt road connecting to the R61 route. Access control is not applied to the areas relevant to this assessment and no restrictions were encountered during the site visit.

3.2.2 Visibility

The surrounding vegetation in the project area mostly comprised out of mixed grasslands and riverine bush. The general visibility at the time of the AIA survey (Augusts 2016) was moderate to high due to surface disturbances in places where the study area has been adversely altered by overgrazing and erosion (see Figures 3-1 to 3-14). In single cases during the survey sub-surface inspection was possible. Where applied, this revealed no archaeological deposits.

Figure 3-1: View of the southern banks of the Lubisi dam.

Figure 3-2: A drainage line feeding into the Lubisi Dam visible in the distance.

Figure 3-3: View of general surroundings looking towards Nyongwana.

Figure 3-4: View of an access road into the village of Nyongwana.

Figure 3-5: View of general surroundings south of the village of Nyongwana.

Figure 3-6: General surroundings south of View of Nyongwana, looking towards Diamond.

Figure 3-7: View of Nyongwana and the Lubisi Dam to the right.

Figure 3-8: View to the south of the study area with Manuneni visible in the distance.

Figure 3-9: General surroundings on a valley near KwaGzina.

Figure 3-10: An open field near KwaGzina and Manuneni.

Figure 3-11: Stone enclosures currently in use in a small settlement near Guse.

Figure 3-12: Deep erosion gullies in the Guse area.

Figure 3-13: View on the project area from a high ridge west of Guse.

Figure 3-14: View on the project area and the access dirt road on a high ridge west of Guse.

3.2.3 Limitations and Constraints

The foot and vehicular site survey for the Cluster 2 RS5-3 Water Supply Upgrade Project AIA primarily focused around areas tentatively identified as sensitive and of high heritage probability (i.e. those noted during the aerial survey) as well as areas of high human settlement catchment.

- **Visibility** proved to be a minor constraint in more pristine areas where surface cover obscured features and surface occurrences.

However, even though it might be assumed that survey findings are representative of the heritage landscape of the project area, 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 AGES Specialist are generally done using the Plomp[1] impact assessment matrix scale supplied by AGES. According to this matrix scale, each heritage receptor in the study area is given an impact assessment. A cumulative assessment for the proposed project is also included.

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	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.

[1] Plomp, H.,2004

Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD	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	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.

4.1.1 The Stone Ages

- **The Earlier Stone Age (ESA)**

The Earlier Stone Age from between 1.5 million and 250 000 years ago refers to the earliest that *Homo sapiens sapiens* predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduwan Industry originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant southern African Early Stone Age Industry, replaced the Olduwan Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. Bifaces emerged in East Africa more than 1.5 million years ago but have been reported from a wide range of areas, from South Africa to northern Europe and from India to the Iberian coast. Earlier Stone Age deposits typically occur on the flood-plains of perennial rivers. These ESA open sites sometimes contain stone tool scatters and manufacturing debris ranging from pebble tool choppers to core tools such as handaxes and cleavers. These groups seldom actively hunted and relied heavily on the opportunistic scavenging of meat from carnivore fill sites. The most well-known Early Stone Age site in southern Africa is Amanzi Springs, situated about 10km north-east of Uitenhage, near Port Elizabeth (Deacon 1970). In a series of spring deposits a large number of stone tools were found in situ to a depth of 3-4m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old.

- **The Middle Stone Age (MSA)**

The Middle Stone Age (MSA) spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art and symbolism. Various stone artefact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean 2008). The large handaxes and cleavers were replaced by smaller stone artefactscalled the MSA flake and blade industries. Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artefacts to be found between the surface and approximately 50-80cm below ground. Fossil bone may in rare cases be associated with MSA occurrences (Gess 1969). These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material. The MSA is distinguished from the ESA by the smaller-sized and distinctly different stone artefacts and chaine operatoire (method) used in manufacture, the introduction of other types of artefacts and evidence of symbolic behaviour. The prepared core technique was used for the manufacture of the stone artefacts

which display a characteristic facetted striking platform and includes mainly unifacial and bifacial flake bladesand points. The Howiesons Poort Industry (80 000-55 000 years ago) is distinguished from the other MSA stone artefacts: the size of tools are generally smaller, the range of raw materials include finer-grained rocks such as silcrete, chalcedony, cJartz and hornfels, and include segments, backed blades and trapezoids in thestone toolkit which were sometimes hafted (set or glued) onto handles. In addition to stone artefacts, bone was worked into points, possibly hafted, and used as tools for hunting (Deacon & Deacon 1999). Other types of artefacts that have been encountered in archaeological excavations include tick shell beads, the rim pieces of ostrich eggshell (OES) water flasks, ochre-stained pieces of ostrich eggshell and engraved and scratched ochre pieces, as well as the collection of materials for purely aesthetic reasons. The majority of MSA sites occur on flood plains and sometimes in caves and rock shelters. Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom remain preserved in the archaeological record. Limited drive-hunting activities are associated with the MSA.

- **The Later Stone Age (LSA)**

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the MSA to LSA; although there is a lack of crucial sites and evidence that represent this change. By the time of the Later Stone Age the genus Homo, in southern Africa, had developed into *Homo sapiens sapiens*, and in Europe, had already replaced *Homo neanderthalensis*. The LSA is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg, Wilton Industries and in between, the larger Albany/Oakhurst and the Kabeljous Industries. Bored stones used as part of digging sticks, grooved stones for sharpening and grinding and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Polished bone tools such as eyed needles, awls, linkshafts and arrowheads also become a more common occurrence. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2000 years that earthenware pottery was introduced, before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Decorative items like ostrich eggshell and marine/fresh water shell beads and pendants were made. Hunting and gathering made up the economic way of life of these communities; therefore, they are normally referred to as hunter-gatherers. Hunter-gatherers hunted both small and large game and gathered edible plant foods from the veld. For those that lived at or close the coast, marine shellfish and seals and other edible marine resources were available for the gathering. The political system was mainly egalitarian, and socially, hunter-gatherers lived in bands of up to twenty people during the scarce resource availability dispersal seasons and aggregated according to kinship relations during the abundant resource availability seasons. Symbolic beliefs and rituals are evidenced by the deliberate burial of the dead and in the rock art paintings and engravings scattered across the southern African landscape. Sites dating to the LSA are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

4.1.2 The Iron Age Farmer Period

- **Early Iron Age (Early Farming Communities)**

The Early Iron Age (also Early Farmer Period) marks the movement of Bantu speaking farming communities into South Africa at around 200 A.D. These groups were agro-pastoralists that settled in the vicinity of

water in order to provide subsistence for their cattle and crops. Artefact evidence from Early Farmer Period sites is mostly found in the form of ceramic assemblages and the origins and archaeological identities of this period are largely based upon ceramic typologies and sequences, where diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. Early Farmer Period ceramic traditions are classified by some scholars into different "streams" or trends in pot types and decoration that, over time emerged in southern Africa. These "streams" are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). More specifically, in the northern regions of South Africa at least three settlement phases have been distinguished for prehistoric Bantu-speaking agropastoralists. The first phase of the Early Iron Age, known as Happy Rest (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of Diamant is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the Eiland tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. Early Farmer Period ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. The Early Iron Age continued up to the end of the first millennium AD.

- **Middle Iron Age / K2 Mapungubwe Period (early Later Farming Communities)**

The onset of the middle Iron Age dates back to ±900 AD, a period more commonly known as the Mapungubwe / K2 phase. These names refer to the well known archaeological sites that are today the pinnacle of South Africa's Iron Age heritage. The inhabitants of K2 and Mapungubwe, situated on the banks of the Limpopo, were agriculturalists and pastoralists and were engaged in extensive trade activities with local and foreign traders. Although the identity of this Bantu-speaking group remains a point of contestation, the Mapungubwe people were the first state-organized society southern Africa has known. A considerable amount of golden objects, ivory, beads (glass and gold), trade goods and clay figurines as well as large amounts of potsherds were found at these sites and also appear in sites dating back to this phase of the Iron Age. Ceramics of this tradition take the form of beakers with upright sides and decorations around the base (K2) and shallow-shouldered bowls with decorations as well as globular pots with long necks. (Mapungubwe). The site of Mapungubwe was deserted at around 1250 AD and this also marks the relative conclusion of this phase of the Iron Age.

- **Later Iron Age (Later Farming Communities)**

The late Iron Age of southern Africa marks the grouping of Bantu speaking groups into different cultural units. It also signals one of the most influential events of the second millennium AD in southern Africa, the difaqane. The difaqane (also known as "the scattering") brought about a dramatic and sudden ending to centuries of stable society in southern Africa. Reasons for this change was essentially the first penetration of the southern African interior by Portuguese traders, military conquests by various Bantu speaking groups primarily the ambitious Zulu King Shaka and the beginning of industrial developments in South Africa. Different cultural groups were scattered over large areas of the interior. These groups conveyed with them their customs that in the archaeological record manifest in ceramics, beads and other artefacts. This means that distinct pottery typologies can be found in the different late Iron Age groups of South Africa.

- **Bantu Speaking Groups in the South African interior**

It should be noted that terms such as "Nguni", "Sotho", "Venda" and others refer to broad and comprehensive language groups that demonstrated similarities in their origins and language. It does not imply that these Nguni / Sotho groups were homogeneous and static; they rather moved through the landscape and influenced each other in continuous processes marked by cultural fluidity.

Ethnographers generally divide major Bantu-speaking groups of southern Africa into two broad linguistic

groups, the Nguni and the Sotho with smaller subdivisions under these two main groups. Nguni groups were found in the eastern parts of the interior of South Africa and can be divided into the northern Nguni and the southern Nguni. The various Zulu and Swazi groups were generally associated with the northern Nguni whereas the southern Nguni comprised the Xhosa, Mpondo, Thembu and Mpondomise groups. The same geographically based divisions exist among Sotho groups where, under the western Sotho (or Tswana), groups such as the Rolong, Hurutshe, Kwena, Fokeng and Kgatla are found. The northern Sotho included the Pedi and amalgamation of smaller groups united to become the southern Sotho group or the Basutho. Other smaller language groups such as the Venda, Lemba and Tshonga Shangana transpired outside these major entities but as time progressed they were, however to lesser or greater extend influenced and absorbed by neighbouring groups.

4.1.3 Pastoralism and the last 2000 years

Until 2000 years ago, hunter-gatherer communities traded, exchanged goods, encountered and interacted with other hunter-gatherer communities. From about 2000 years ago the social dynamics of the southern African landscape started changing with the immigration of two 'other' groups of people, different in physique, political, economic and social systems, beliefs and rituals. One of these groups, the Khoekhoe pastoralists or herders entered southern Africa with domestic animals, namely fat-tailed sheep and goats, travelling through the south towards the coast. They also introduced thin-walled pottery common in the interior and along the coastal regions of southern Africa. 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.

4.1.4 Historical and Colonial Times and Recent History

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.

4.2 The Lubisi Area: Specific Themes.

In the Eastern Cape, the Drakensberg and its fertile surroundings has provided resources for humans and their predecessors for more than 1,7million years. As such, the history of the Eastern Cape is reflected in a rich archaeological landscape. Sites, documenting Earlier, Middle and Later Stone Age habitation occur across the province, mostly in open air locales or in sediments alongside rivers or pans. In addition, a wealth of Later Stone Age rock art sites is to be found in the larger landscape. These sites occur on hilltops, slopes, rock outcrops and occasionally in river beds. Later, Bantu-speaking tribes moved into this area from the northern parts of Southern Africa and settled here. This later occupation depicts the interaction between the Iron Age farming societies and their adaptation and utilization to the environment, the migration of people, technological advances, warfare and contact and conflict. Contained in the archaeology and history of the Eastern Cape are traces of conquests by Bantu-speakers, Europeans and British imperialism encompassing the struggle for land, resources and political power.

4.2.1 The Early and Middle Stone Ages

Most Early Stone Age (ESA) sites (1.5 million years ago-250 000 years ago) in South Africa can probably be connected with the hominin species known as Homo erectus. Simply modified stones, hand axes, scraping tools, and other bifacial artifacts had a wide variety of purposes, including butchering animal carcasses,

scraping hides, and digging for plant foods. Most South African archaeological sites from this period are the remains of open camps, often by the sides of rivers and lakes, although some are rock shelters, such as Montagu Cave in the Cape region. ESA sites are relatively rare in the Eastern Cape, occurring mostly in major river valleys. Generally EIA artefacts are not found *in situ* and are likely to be out of their primary context. ESA handaxes, cleavers and other stone tools have been documented mainly in inland areas such as in the districts of Middledrift, Kentani, Butterworth, Idutywa and Lusikiki to name a few.

The Middle Stone Age (MSA) (250 000-30 000 years ago) is characterised by stone tools typically made from quartzite, dolerite, or hornfels. Such sites occur as surface scatters at sites throughout the Eastern Cape Highlands along minor and major river courses. Specifically, these sites occur in exposed and disturbed areas such as quarries, erosion dongas, gravel farm roads and 'manmade' dams (Binneman *et al.* 2010). Data obtained from the MSA deposits in the Eastern, Western, and Southern Cape have provided detailed palaeoenvironmental records with long occupation sequences providing evidence of occupation for much of the Late Pleistocene. Open camps and rock overhangs were used for shelter. Day-to-day debris has survived to provide some evidence of early ways of life, although plant foods have rarely been preserved. MSA bands hunted medium-sized and large prey, including antelope and zebra, although they tended to avoid the largest and most dangerous animals, such as the elephant and the rhinoceros. They also ate seabirds and marine mammals that could be found along the shore and sometimes collected tortoises and ostrich eggs in large quantities.

4.2.2 The Later Stone Age (LSA) and Rock Art

The Later Stone Age (LSA) (40 000 years ago – present) is abundantly represented with LSA material found across the Eastern Cape. Basic toolmaking techniques began to undergo additional change about 40 000 years ago. Small finely worked stone implements known as microliths became more common, while the heavier scrapers and points of the Middle Stone Age appeared less frequently and archaeologists refer to this technological stage as the Late Stone Age. The numerous collections of stone tools from South African archaeological sites show a great degree of variation through time and across the subcontinent. Bands moved with the seasons as they followed game into higher lands in the spring and early summer months, when plant foods could also be found. When available, rock overhangs became shelters; otherwise, windbreaks were built. Shellfish, crayfish, seals, and seabirds were also important sources of food, as were fish caught on lines, with spears, in traps, and possibly with nets. Dating from this period are numerous engravings on rock surfaces, mostly on the interior plateau, and paintings on the walls of rock shelters in the mountainous regions, such as the Drakensberg and Cederberg ranges. The images were made over a period of at least 25 000 years and the paintings are closely associated with the work of medicine men, shamans who were involved in the well-being of the band and often worked in a state of trance. Specific representations include depictions of trance dances, metaphors for trance such as death and flight, rainmaking, and control of the movement of antelope herds.

The Eastern Cape and Lesotho regions are renowned for their rich rock art heritage. The majority of these rock markings can be associated with Later Stone Age hunter-gatherers, more specifically a group known locally as the Maloti San. This group was probably widespread in Lesotho and adjacent areas over the last few thousand years, but they may have retreated into mountainous areas year-round when farmers moved into the region. The rock art is found in different densities in various parts of Lesotho and the Eastern Cape, mostly in areas with appropriate rock shelters. This rock art images are composed of very finely drawn polychromatic images with narrow lines, small dots and gradated colouring. The images usually depict eland, rhebok, or humans in various states, activities, or postures. Occasionally, lions, other carnivores, other antelope, baboons, cattle, horses, horseback riders, snakes, and extraordinary creatures

with human and animal features (known as therianthropes) are depicted. This imagery is associated with the religious, spiritual and healing activities of the Maloti San groups.

Some examples of non-hunter-gatherer rock art also occur in the area. Historical “farmer rock art” for example, is characterized by large figures in a single colour made with broad blocky lines and are uniformly filled with colour. This tradition is characterized by large geometric designs, usually in either red or white, or both. “Farmer” and “herder” rock art traditions are not as common as hunter-gatherer rock art but they are equally important as they are probably records of the historical period of the larger region during which many social and political transformations occurred.

4.2.3 Pastoralism in the Eastern Cape

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.

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 farming communities generally 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. According to Huffman (2007) an eastern migration stream, known as the Chifumbaze Complex spread southwards from East Africa south into southern Africa during the period of about AD 200—300 where several KwaZulu-Natal and north-Eastern Cape sites were occupied. Evidence of numerous Early Iron Age (EIA) sites or material occurs in the area surrounding Mtatha and the Eastern Cape (Feely & Bell-Cross 2011.

Evidence in the form of thick-walled well-decorated pot sherds are present along other parts of the Transkei coast as is evident from sites that were excavated at Mpame River Mouth (Cronin 1982) and just west of East London (Nongwaza 1994). Research in the adjacent Kei River Valley area indicates that the first mixed farmers were already settled in the Eastern Cape region between A.D. 600 -700 (Binneman 1994, Feely & Bell-Cross 2011). Thus far the closest documented and well-researched Early Iron Age site 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 is the past been some speculation that EIA 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. Two closer EIA sites have been documented, one to the south of East London (Cronin 1982) and the other is situated 12 km west of East London on the west bank of the Buffalo River (Nogwaza 1994). Thicker and decorated pottery sherds, kraals, possible remains of domesticated animals, upper and lower grindstones and storage pits are associated for identifying Early Iron Age sites. The sites are generally large settlements, but the archaeological visibility may in most cases be difficult owing to theorganic nature of the homesteads. Metal and iron implements

are also associated with Early Iron Age communities.Relatively little research has been conducted on the archaeology of later farmer communities of the Eastern Cape and adjacent areas. According to research in adjacent parts of South Africa, there was little or no settlement in the dry high-altitude grasslands of the north-western parts of the Eastern Cape and Lesotho until after AD 1600 (e.g. Walton 1956; Maggs 1976; Hall 1990; Mitchell 2002). In many instances, Later Iron Age farmer communities moved from river valleys to the hilltops, such settlements have been formally recorded by the Albany Museum and cover a relatively extended area in comparison to the Early Iron Age settlement patterns (Binneman et al. 2010). As such, Later Iron Age communities gradually expanded into the grasslands of the KwaZulu-Natal and north Eastern Cape interior. An early phase of the Late Iron Age has been uncovered in KwaZulu-Natal which transpired in a ceramic style known as “Blackburn”. This ceramic style represents a break with that of the Early Iron Age. Since there is a resemblance between Blackburn pottery and Nguni pottery, Huffman (1989) postulates that Blackburn reflects the migration of the Nguni to KwaZulu-Natal and later to the Transkei. Consequently, sites belonging to the final phase of the Late Iron Age can often be linked with historically known Nguni groups. The most southern Iron Age site, Kulubele, excavated by archaeologists from the Albany Museum during the 1990’s, is situated along the banks of the Kei River in the Kei River Valley. The earliest date for the site is 1250 BP yielded numerous settlement areas, thick-walled pottery, animal bones, and most importantly chicken bones that illustrates contact between the first farming communities and European seafarers. Contact with the Cape Colony initially stimulated an already flexible and dynamic characteristic of the Cape Nguni political economy. When trade opportunities developed in the late 18th century, the Xhosa would exchange cattle (and permission for and guidance in hunting elephants) in return for copper, iron, beads (Peires 1981:95); they would then exchange these goods at a profit for cattle with their African neighbours to the east, bringing about a kind of speculation in cattle.

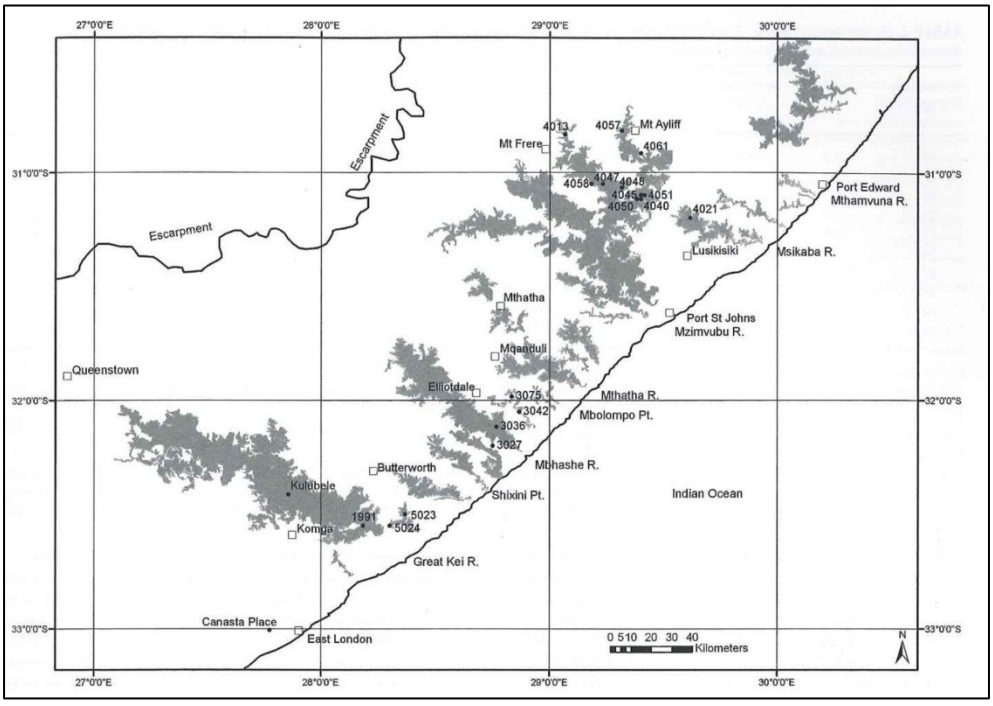

Figure 4-1: Early Iron Age farmer period sites in the Eastern Cape around Mthahta (after Feely & Bell-Cross 2011).

4.2.5 Later History: Colonial Period

The oral and written history of the Eastern Cape pertaining to the last centuries is relatively abundant resulting from an assimilation of local folklore and Historical sources such as missionary accounts. The

Historical period for this area can be divided into three periods of settlement, as described in oral traditions and local histories. First in the area were the pioneers, arriving between the nineteenth century and early twentieth century, depending on the region. They may have lived in caves at first (sometimes in association with San), or had compounds in places not occupied today. Second, the main population established villages on the high shoulders of the mountains and hills when areas were formally allocated to chiefs. This period lasted until the 1940s or 1950 when the chieftaincies were transformed by the paramount chief. The older villages in many areas were abandoned, were combined and/or moved to more accessible locations at lower elevations. Villages of this final phase are often still occupied today (Cain 2005).

At the time of white settlement of the Cape, Xhosa groups were living far inland, into the area between Bushman's River and the Kei River. Since around 1770, they had been confronted with the Afrikaner Trek Boers who approached from the west. Both the Boers and the Xhosa were stock-farmers. The competition for grazing land led first to quarrels between the two groups, and eventually it came to a number of wars known as the Grensoorlöe ("border wars" in Afrikaans). The politics of the colonial government attempted to enforce the separation of white and black settlement areas with the Fish River as the border. But the more the colony developed into a modern state with a strong military organization, the more the whites tended towards a policy of land annexing and the subjugation of the black population. In the middle of the 19th century, all the land formerly inhabited by Xhosa was in the hands of white settlers. With the founding of the South African Union in 1910, the British colony and the independent Boer Republics were united. Other types of Historical sites found in the Eastern Cape include early schools and Missions which are part of the cultural transformations between the mid-19th and mid-20th centuries. These sites are often valuable sources of oral histories and written documents and they present a later regional social development in the area where European expansion brought about dramatic changes in social and cultural land tenure on the Eastern Cape frontier.

The region was given nominal autonomy in 1963, under the “Separate Development” act and “full independence” followed in 1976 where after the area became known as Transkei (meaning: the land beyond the Kei River). The newly-formed Transkei state was not recognized internationally and remained diplomatically isolated and politically unstable. The area was reincorporated into South Africa's after 1994 when it became part of the Eastern Cape Province.

By the closing decades of the 18th century, South Africa had fallen into two broad regions: west and east. Colonial settlement dominated the west, including the winter rainfall region around the Cape of Good Hope, the coastal hinterland northward toward the present-day border with Namibia, and the dry lands of the interior. Trekboers took increasingly more land from the Khoekhoe and from remnant hunter-gatherer communities, who were killed, were forced into marginal areas, or became labourers tied to the farms of their new overlords. Indigenous farmers controlled both the coastal and valley lowlands and the Highveld of the interior in the east, where summer rainfall and good grazing made mixed farming economies possible. A large group of British settlers arrived in the Eastern Cape in 1820; this, together with a high European birth rate and wasteful land usage, produced an acute land shortage, which was alleviated only when the British acquired more land through massive military intervention against Africans on the eastern frontier. Until the 1840s the British vision of the colony did not include African citizens (referred to pejoratively by the British as “Kaffirs”), so, as Africans lost their land, they were expelled across the Great Fish River, the unilaterally proclaimed eastern border of the colony. The first step in this process included attacks in 1811–12 by the British army on the Xhosa groups, the Gqunukhwebe and Ndlambe. An attack by the Rharhabe-Xhosa on Graham’s Town in 1819 provided the pretext for the annexation of more African

territory, to the Keiskamma River. Various Rharhabe-Xhosa groups were driven from their lands throughout the early 1830s. They counterattacked in December 1834, and Governor Benjamin D'Urban ordered a major invasion the following year, during which thousands of Rharhabe-Xhosa died. The British crossed the Great Kei River and ravaged territory of the Gcaleka-Xhosa as well; the Gcaleka chief, Hintsa, invited to hold discussions with British military officials, was held hostage and died trying to escape. The British colonial secretary, Lord Glenelg, who disapproved of D'Urban's policy, halted the seizure of all African land east of the Great Kei. D'Urban's initial attempt to rule conquered Africans with European magistrates and soldiers was overturned by Glenelg; instead, for a time, Africans east of the Keiskamma retained their autonomy and dealt with the colony through diplomatic agents.

However, after further fighting with the Rharhabe-Xhosa on the eastern frontier in 1846, Governor Colonel Harry Smith finally annexed, over the next two years, not only the region between the Great Fish and the Great Kei rivers (establishing British Kaffraria) but also a large area between the Orange and Vaal rivers, thus establishing the Orange River Sovereignty. These moves provoked further warfare in 1851–53 with the Xhosa (joined once more by many Khoe), with a few British politicians ineffectively trying to influence events. The Pondo people, under Faku (and west of the Kei), had never clashed with the British and the British treated the amaPondo as an independent nation8. However, the Boers who trekked into Natal (now KwaZulu-Natal) to escape British rule in first the Western and then the Eastern Cape, found themselves under British sovereignty again. They sought new farms in Pondo territory and Faku turned to the British to help him resist the Boer invasion. As the first of the amaPondo kings to rule a united nation, he was deemed by his own people and the British to have the authority to sign the Maitland Treaty of 1844. The treaty confirmed his claim to the land of the amaPondo (from the Drakensberg mountains in the west to the coast in the east, and from Mthatha in the south to the Umzimkhulu River in the north). It also guaranteed him protection from annexation of that land by the British. In addition, the colonial government promised to stand by him should he need to defend his own territory and gave him cattle valued at seventy-five pounds. In return, he committed the amaPondo to avoiding conflict with the Cape Colony, handing over any criminal elements who tried to hide on his land, returning any stolen cattle to their rightful owners, protecting the whites living legitimately on his land as well as traders passing through his territory, maintaining peace amongst the various clans under his sovereignty, and supporting the Cape government with his forces if requested.

Between 1811 and 1858 colonial aggression deprived Africans of most of their land between the Sundays and Great Kei rivers and produced poverty and despair. From the mid-1850s British magistrates held political power in British Kaffraria, destroying the power of the Xhosa chiefs. Following a severe lung sickness epidemic among their cattle in 1854–56, the Xhosa killed many of their remaining cattle and in 1857–58 grew few crops in response to a millenarian prophecy that this would cause their ancestors to rise from the dead and destroy the whites. Many thousands of Xhosa starved to death, and large numbers of survivors were driven into the Cape Colony to work. British Kaffraria fused with the Cape Colony in 1865, and thousands of Africans newly defined as Fingo resettled east of the Great Kei, thereby creating Fingoland. After Faku died in 1867, Mqikela refused to co-operate with the government. Accordingly, the Cape government curtailed his powers, dividing Pondoland, as it had become known, into two and threatening to elevate Nqwiliso, the son and successor to Ndamase, to paramountcy. In 1878, in order to ensure that he did indeed get the paramount, Nqwiliso sold land at Port St. Johns to the British for one thousand pounds. The British wanted the land to secure the port for their ships. On his accession to power Nqwiliso made it clear that, while recognising Mqikela's house as the Great House of the amaPondo, he intended to follow in Ndamase's footsteps and owe allegiance to no one, and maintain his position as an independent chief. That meant he would suffer no interference from Mqikela. In this declaration he was supported by the Government. Once again, dissent among the amaPondo gave the colonial power an

opportunity to further erode traditional leadership. Colonial officialdom either ignored traditional authorities completely or allowed them to, at best, play a marginal role in governing their communities.

4.2.6 The Landscape around Queenstown

The town of Queenstown was founded in 1853 as a military outpost designed to protect the British subjects from attack during the time of the Frontier wars. The town was laid out around a central hexagon, which was to be the lager to which the citizens would flee in time of trouble. Although still a distinguishing feature of the town today, the hexagon was never used for its intended purpose. Queenstown became a service town for farmers in the district. It was known for the quality of its wagon building and for the general quality of its imported merchandise. In the late 19th century, Queenstown prospered, and number noteworthy local sand stone buildings were built, some of which remain today e.g. the Town Hall façade, the Methodist Church, the Anglican Church and the Dutch Reformed Church. After the world wide depression in the 1920's, Queenstown once again entered a period of prosperity while still acting as a supply and educational centre for surrounding farmers and smaller towns. After 1948, and the beginning of the Apartheid era, the district changed character as white owned farms were bought out and the land incorporated in the Transkei and Ciskei and settled with people. Queenstown has since then been a service centre for these communities. Mlungisi, the traditionally African settlement has been incorporated into Queenstown since 1984. Mlungisi was perhaps best known as a training ground for political activists, and also for the dedication of its school teachers. Many of the leaders of the present government have had links with the town through its political connections over the years. The political clout of Mlungisi was demonstrated by the resident's participation in a consumer boycott in 1985 resulting from conditions in the township. Ezibeleni was a town established near Queenstown in the 1960's as part of a master plan to move all Black people to the homelands. It was incorporated into Queenstown after 1984.

4.2.7 Burial Sites / Human Remains

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. 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).

5 RESULTS: ARCHAEOLOGICAL SURVEY

In terms of heritage resources, the project area is primarily well known for the occurrence of Stone Age artefact, Colonial remnants and rock paintings – especially in the foothills of the Drakensberg. However, large sections of the proposed Cluster 2 RS5-3 Water Supply Upgrade Project alignments occur along areas that have been altered extensively by recent ad historical ruralisation and development largely sterilising the area of heritage remains. A large number of heritage receptors were nonetheless identified in the Cluster 2 RS5-3 Water Supply Upgrade Project study areas were uniquely coded **EXIGO-CL2-SA01** (Exigo Cluster 2 Stone Age xx), **EXIGO-CL2-HP01** (Exigo Cluster 2 Historical Period xx), **EXIGO-CL2-BP01** (Exigo Cluster 2 Burial Place xx) and **EXIGO-CL2-FT01** (Exigo Cluster 2 Feature xx).

5.1 The Stone Age

Stone Age scatters and quarries occur frequently in low lying areas on exposed surfaces in the Queenstown region. This presence of Stone Age people in the landscape can probably be attributed to the abundance of locally available raw material for the manufacture of stone tools. During the site inspection, Middle Stone Age (MSA) and Earlier Stone Age (ESA) material were documented in the survey area, specifically in erosions gullies and in association with decomposing surface soil deposits. The density of the scatters were arbitrarily estimated by placing a one-meter drawing frame, sub-divided into quadrants, on a randomly-selected area displaying higher amounts of surface lithics. By plotting the counts of all lithic elements present in the 1x1 metre square relative density per m^2 was established and rated on a scale of low (<10), medium (10-20) and high (>20). This method has been adapted as expedient and non-invasive sampling technique that is particularly useful in value assessment of lithic occurrences during Phase 1 AIA's (see Van Der Ryst 2012).

- **Site EXIGO-CL2-SA01 (S31.80152° E27.44819°)**

A medium density scatter of MSA material was documented along the north-western periphery of Nyongwana where the lithic scatter occurs mainly as a single horizon on the surface on a rock bank. Formal tools such as points, broken blades and scrapers as well as a number of cores, produced on fine grained specularite and jaspilite were noted at the site which measures approximately 50m x 20m. A number of tools show signs of secondary retouch and in some instances cores display peripheral preparation. In addition, a number of flakes display facetted platforms, characteristic of the MSA. Here, prepared cores show evidence of the use of the Levallois technique, where surfaces on the core are shaped in order to generate a specific formal tool when flaked from the core. Use wear and marks are clearly visible on formal tools. The surface collection shows a predominant MSA signature even though it is not possible to assign an age estimate without an in-depth analysis of a more representative sample. The site is of medium scientific value and potential and a specialist analysis of lithics from the sites will provide an understanding of the development and spread of the MSA in the Eastern Cape area. The site occurs within the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site is expected.

Figure 5-1: View of a rock bank at Site EXIGO-CL2-SA01.

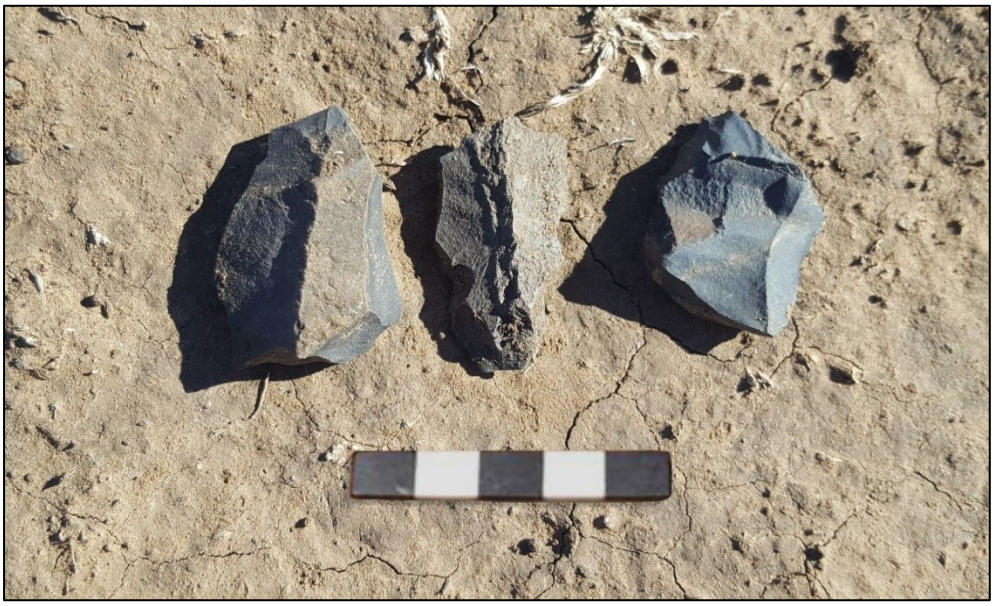

Figure 5-2: Debris flakes (left and right) and a crude point (centre) from Site EXIGO-CL2-SA01.

Figure 5-3: Use wear visible on a scraper (left) and weathered cores from Site EXIGO-CL2-SA01.

Figure 5-4: Use wear visible on a scraper (left) and a weathered scraper (right) from Site EXIGO-CL2-SA01.

- **Site EXIGO-CL2-SA02 (Eastern Periphery S31.81574° E27.47240°, Relative Centre S31.81485° E27.46997°, Western Periphery S31.81428° E27.46767°)**

A medium density lithic scatter was identified south of Diamond along a deep erosion gully where precipitation and groundwater have exposed stone tools and associated material. The site extends for approximately 200m x 100m along the rim of the dongha from east to west. At the site, there may be some mixing of single Earlier Stone Age artefacts but the surface collection shows a predominant MSA signature. The surface collection, which includes formal tools such as scrapers, blades and points show a clear MSA signature. Some of the flakes displayed facetted platforms and secondary retouch of edges, characteristic of the MSA. The raw material used in the production of the lithics is mostly hornfels but fine-grained lithologies such as jasper and chalcedonies were also used. It is not possible to assign an absolute age estimate without an in-depth analysis of a more representative sample but it could be inferred that this open-air collection probably represent a palimpsest of visits by prehistoric groups up to the MSA. In addition, the presence of formal tools, cores and debitage implies knapping activity which in turn suggests that the site acted as a regional factory site for prehistoric groups up to the MSA. The occurrence holds scientific research potential and it can inform on the development of MSA technologies and movement of Stone Age people in the Eastern Cape Province. The site occurs within the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site is expected.

Figure 5-5: A deep erosion gully demarcating the location of lithic deposits at Site EXIGO-CL2-SA02.

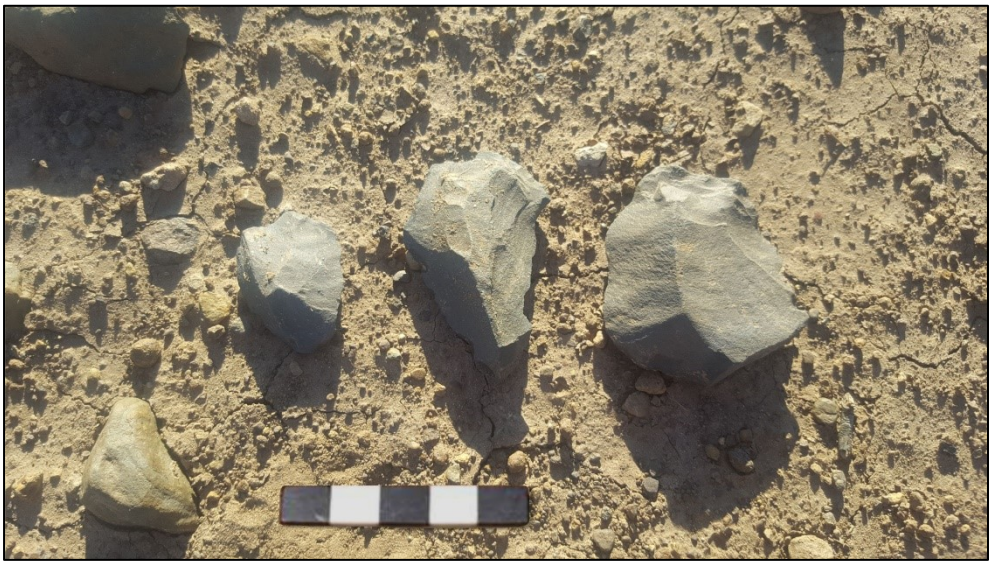

Figure 5-6: Side scrapers (left and right) and a point (centre) from Site EXIGO-CL2-SA02.

Figure 5-7: Debitage from Site EXIGO-CL2-SA02. Note use wear on scraper right.

5.2 The Iron Age Farmer Period

A frontier zone between in the later Iron Age and Colonial times, the Eastern Province landscape holds remnants of precolonial Iron Age Farmer Period remnants. However, the site inspection produced no Iron Age farmer sites, probably since the proposed project pipeline alignments occur in areas where traces of human occupation and / or activity have been lost as a result of the general transformation of the landscape as a result of development and ruralisation.

5.3 Historical / Colonial Period

A number of features, structures and buildings dating to different phases of the Historical Period were identified in close proximity or within of the pipeline routes in the study areas. Even though temporal contexts for the structures could not be ascertained, it might be assumed that, generally the features probably date to the late 19th and early 20th century.

These inferences are based on the following observations:

- Even though of low quality and resolution, aerial imagery dating to the first part of the 20th century suggests that some of the structures were present in the landscape in the early 1900's.
- As a general rule, southern African Iron Age farming communities constructed irregular circular stock enclosures. Squarely built enclosures only appear consequent to Colonial contact, which implies that cattle kraals identified in the villages did not belong to Iron Age stock farmers, but rather later more recent family units.

The close proximity of many of the features to other similar homesteads currently in use, might suggest that these sites were occupied during early phases of the same occupational period of current homesteads in the area. In addition, the northern section of the proposed pipeline runs along the main gravel road to Covimvaba where a number of house and buildings, presumably from the Colonial period, occurs directly north of the proposed pipe alignments.

- **Site EXIGO-CL2-HP01 (S31.82265° E27.45864°)**
- **Site EXIGO-CL2-HP02 (S31.81184° E27.45835°)**

Two large stone walled sites were documented in the study area along the slopes of a large hill between the villages of Nyongwana and Guse. The first (**Site EXIGO-CL2-HP01)** consists out of a series of partially-collapsed stone enclosures across an area of approximately 200m. The fairly well-preserved rectangular and circular structures which are in places overgrown with aloe, were built up with round stones to a probable height of 1.5m. Clear entrances are demarcated in places in the structure which was probably used as livestock kraal. Single round house / hut foundations were noted at the site but no material culture was observed in association with the remains and the structures are not well preserved. The second site (**Site EXIGO-CL2-HP02)** occurs along an open sloped field with Aloes in places. Here, a large number of collapsed stone walls and terraces were roughly constructed out of round stones across a surface area of approximately 450m. Single round house / hut foundations were also noted at the site but no material culture was observed in association with the remains and the structures are not well preserved. The enclosures were probably large a stock kraals for nearby settlements.

A clear temporal context for the structures is not known but the sites probably date to the Colonial Period in the area, and the remains might be older than 60 years. The sites, which are of medium heritage significance due to their probable significant historical context, occur within the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and peripheral impact on the site is anticipated.

Figure 5-8: Square and circular structures at Site EXIGO-CL2-HP01 clearly visible on aerial imagery.

Figure 5-9: View of stone wall enclosures at Site EXIGO-CL2-HP01.

Figure 5-10: Stone walling and enclosures at Site EXIGO-CL2-HP02 visible on aerial imagery.

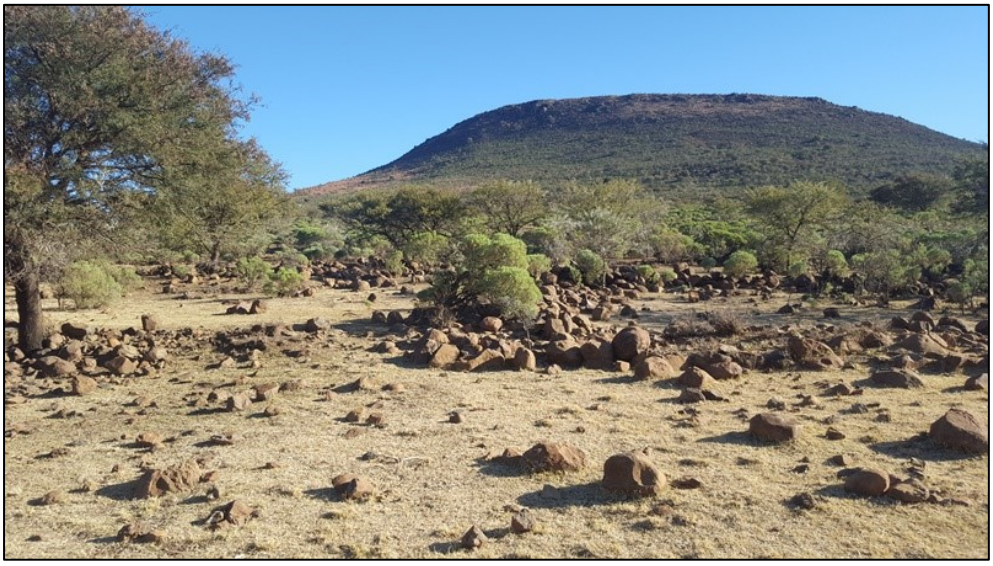

Figure 5-11: Collapsed stone wall enclosures and features at Site EXIGO-CL2-HP02.

- **Site EXIGO-CL2-HP03 (S31.79932° E27.44802°)**

A midden deposit containing Colonial period artefacts occurs northwest of Nyongwana nar a large cemetery. Material in the midden such as glass, metal, and porcelain indicate a Historical Period context for the site. The general preservation of the integrity of midden seems to be poor due to site disturbances as a result of farming and general development in the area. The site, which is of medium to low heritage significance due to its poor preservation, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site is expected.

Figure 5-12: A dated medicine bottle, glass fragments and metal at Site EXIGO-CL2-HP03.

- **Site EXIGO-CL2-HP04 (S31.79646° E27.44410°)**

An occupation site demarked by stone wall remains and hut foundations were documented along the southern banks of the Lubisi Dam northwest of Nyongwana. At the site, measuring approximately 90m, rectangular and circular structures which are in places overgrown with aloe, were built up with round stones to a probable height of 1.5m. Clear entrances are demarcated in places in the structure which was probably used as livestock kraal. Single round house / hut foundations were noted at the site with metal

and glass noted on the surface. The site, which is of medium to low heritage significance due to its poor preservation, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site is expected.

Figure 5-13: The remains of a crude square stone wall structure at View of stone wall enclosures at Site EXIGO-CL2-HP04.

Figure 5-14: A round hut foundation structure at site EXIGO-CL2-HP04.

- **Site EXIGO-CL2-HP05 (S31.79332° E27.45484°)**

An old barn, constructed out of raw mud brick and corrugated iron sheets, as well as a square stone enclosure occurs along the main dirt road bisecting the study area in Southeyville. The building structures are currently in use but their preservation is fair. The site generally resembles the later Historical Period architecture of rural surroundings of Queenstown and they presumably formed part of farming infrastructure during the early 20th century. The structures are possibly older than 60 years (considering the architectural style similarities with similar historical buildings in the area) and the site is thus a protected heritage resource. As such the site is rated as of medium heritage significance. The buildings occur in proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact might occur.

Figure 5-15: View of a shed structure and a stone enclosure probably dating to Colonial Times at Site EXIGO-CL2-HP05.

- **Site EXIGO-CL2-HP06 (S31.79609° E27.45680°)**

A well maintained stone house number of possible Historical origin occurs along the main dirt road bisecting the study area in Southeyville. The multi-room structure with a pitched roof is currently in use and it is well preserved with clear signs of more recent maintenance to the building. A clear temporal context for the structure is not known but considering its architectural style, the house most probably dates to the Colonial farming period in rural Southeyville. They building is most probably older than 60 years and thus protected heritage resources. The feature might add to a better understanding of architectural, settlement and social developments in Southeyville and it is of medium heritage significance. The building occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-16: A stone house probably dating to Colonial Times at Site EXIGO-CL2-HP06.

- **Site EXIGO-CL2-HP07 (S31.79871° E27.45884°)**

An old multi room building, currently used as the Southeyville Post Office, occurs along the main dirt road bisecting the study area in Southeyville .The building was constructed out of plastered up mud brick with a

pitched corrugated iron roof and wooden window frames and doors. The building is typical of Historical Period architecture of the rural areas in the Eastern Cape. The historical function of the building is not known but it might be assumed building was constructed around the turn of the 20th century and it is older than 60 years (considering the distinct architectural style). The site is a protected heritage resource but it is not maintained and exists in a fair state of preservation. The site affords a better understanding of architectural, settlement and social developments in Southeyville and it is of medium heritage significance. The building occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-17: A Colonial period building currently used as Post Office at Site EXIGO-CL2-HP07.

- **Site EXIGO-CL2-HP08 (S31.83802° E27.48031°)**

A number of stone terraces occur along a slope next to the main dirt road bisecting the study area southeast of Guse. The structures were built up with round stones in lines measuring up to 50m. The terraces probably acted as barrier for Historical Period agricultural fields along settlement areas. The terraces are not well preserved and no material culture was noted in association with the features. The site is of medium to low heritage significance due to its poor preservation and it occurs in proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments. Impact on the site might be expected.

Figure 5-18: Stone terracing visible at Site EXIGO-CL2-HP08 .

5.4 Recent Period / Other Features

- **Site EXIGO-CL2-FT01 (S31.79597° E27.43991°)**
- **Site EXIGO-CL2-FT02 (S31.80290° E27.44743°)**
- **Site EXIGO-CL2-FT03 (S31.80414° E27.45132°)**
- **Site EXIGO-CL2-FT04 (S31.80594° E27.45376°)**
- **Site EXIGO-CL2-FT05 (S31.80722° E27.45524°)**

A number of well-preserved square stone wall livestock enclosures occur within settlements in the study area, in association with homesteads. In most cases, the features are currently in use and as such, they probably date to contemporary times. It is highly probable that stones used in construction of the enclosures were soured from nearby Historical Period ruins (discussed above). The remains are probably not older than 60 years and they do not bear heritage significance but they do carry meaning in terms of the built environment in the landscape. The features are of low heritage significance due their more recent age and in most cases they occur in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments. Impact on such sites might occur.

Figure 5-19: A contemporary period livestock enclosure at Site EXIGO-CL2-FT01.

Figure 5-20: A contemporary period livestock enclosure at Site EXIGO-CL2-FT02.

Figure 5-21: The remains of a contemporary period livestock enclosure at Site EXIGO-CL2-FT04.

5.5 Graves / Human Burials

At least 20 burial sites were documented in the study area around the villages subject to this assessment. The burial places hold various numbers of graves, a number of which are older than 60 years or unmarked. In the rural areas of the Eastern Cape Province graves and cemeteries often occur within settlements or around homesteads but they are also randomly scattered around archaeological and historical settlements. The probability of additional and 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.

- **Site EXIGO-CL2-BP01 (S31.80019° E27.44781°)**

A community cemetery containing large number of burials occurs northwest of Nyongwana. The graveyard is fenced off and well maintained. The majority of graves bear marble headstones and graves are placed in an east-west orientation. The burial site, which is of high heritage significance, occurs in the general vicinity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and unmitigated impact on the site might occur.

Figure 5-22: View of a large cemetery at Site EXIGO-CL2-BP01.

- **Site EXIGO-CL2-BP02 (S31.80591° E27.45388°)**

A small informal cemetery containing 2 graves occurs in Nyongwana next to a homestead. One of the burials is marked by an elongated soil and stone mound and the other grave is dressed with brick structure with an iron fence enclosing the burial. No material culture associated with the graves was observed but it seems to be well maintained. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-23: Two graves at Site EXIGO-CL2-BP02.

- **Site EXIGO-CL2-BP03 (S31.81002° E27.45842°)**

An informal cemetery containing a large number of graves occurs along a mountain slope south of Nyongwana. Many of the burials, which are not placed to a defined orientation, are dressed with marked marble headstones. Other graves are demarcated by spoil and stone mounds. Older graves dating to the 1960's occur at the site and material culture such as glass, enamel and porcelain containers was observed in association with some of the burials. The graveyard is not maintained, and preservation of burials range from fair to poor. The site, which is of high heritage significance, occurs within the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site is expected to occur.

Figure 5-24: A large informal graveyard at Site EXIGO-CL2-BP03.

- **Site EXIGO-CL2-BP04 (S31.81056° E27.45905°)**

Two graves occur in an open field south of Nyongwana. The graves are marked with rough elongated stone structure filled-in in with soil and rocks. No material culture associated with the graves was observed, they is not maintained and preservation thereof is poor. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-25: Two poorly preserved burials at Site EXIGO-CL2-BP04.

- **Site EXIGO-CL2-BP05 (S31.81111° E27.45960°)**

Similarly, two further graves occur in an open field south of Nyongwana. The graves are marked with rough elongated stone structure filled-in in with soil. No material culture associated with the graves was observed, they is not maintained and preservation thereof is poor. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-26: Two poorly preserved burials at Site EXIGO-CL2-BP05.

- **Site EXIGO-CL2-BP06 (S31.81246° E27.46100°)**

At least two graves structures of larger size occur in an open field south of Nyongwana. The graves are marked with rectangular elongated stone structure filled-in in with soil. No material culture associated with the graves was observed. Even though the burials are not maintained, preservation thereof is fair. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-27: View of two graves at Site EXIGO-CL2-BP06.

- **Site EXIGO-CL2-BP07 (S31.81302° E27.46143°)**

An informal cemetery of the Ngweba family containing at least 11 graves occurs south of Nyongwana next to a crop field. The burials, which are not placed to a defined orientation, are dressed with marked marble headstones and gravestones. No material culture associated with the graves was observed but preservation thereof is good. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-28: A small family cemetery at Site EXIGO-CL2-BP07.

- **Site EXIGO-CL2-BP08 (S31.79615° E27.45640°)**

Another informal cemetery of the Matoti family containing at least 8 graves occurs north of Southeyville next to the grave road. Most of the burials, which are placed to an east-west orientation, are dressed with marked marble headstones and gravestones. One grave is demarcated with a stone cairn. No material culture associated with the graves was observed but preservation thereof is good. The fenced site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-29: A small family cemetery at Site EXIGO-CL2-BP08.

- **Site EXIGO-CL2-BP09 (S31.79836° E27.46280°)**

A double grave with a cast iron fence occurs south of Southeyville on a high ridge next to a Sisal tree meadow. The burial is not placed to a defined orientation and is dressed with a marble gravestone. No material culture associated with the graves was observed but preservation thereof is good. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-30: A double grave at Site EXIGO-CL2-BP09.

- **Site EXIGO-CL2-BP10 (S31.81147° E27.47213°)**

Two graves occur in a homestead yard south of Southeyville. The graves are marked with rectangular elongated stone structure filled-in in with soil. No material culture associated with the graves was observed. Even though the burials are not maintained, preservation thereof is fair. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-31: Two graves at a homestead at Site EXIGO-CL2-BP10.

- **Site EXIGO-CL2-BP11 (S31.82606° E27.45794°)**

In addition, three graves occur in an open area next to homesteads in Guse. The graves are marked with rectangular elongated stone structure filled-in in with soil and one grave bears a roach headstone. No material culture associated with the graves was observed. Even though the burials are not maintained, preservation thereof is fair. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-32: Three graves in an open area near homesteads at Site EXIGO-CL2-BP11.

- **Site EXIGO-CL2-BP12 (S31.82720° E27.46205°)**

An informal village cemetery containing a large number of graves occurs in an open area along the southern outskirts of Guse. All the graves are marked with elongates stone cairns. Preservation of the burials is generally fair. The burial site, which is of high heritage significance, occurs in the general vicinity of proximity of the proposed Tlapeng Sub-Scheme Pipeline alignment and on the site might occur.

Figure 5-33: A large informal cemetery at Site EXIGO-CL2-BP12.

- **Site EXIGO-CL2-BP13 (S31.82806° E27.47027°)**

Three graves occur in a homestead yard in Guse. The graves are marked with rectangular elongated stone structure filled-in in with soil. No material culture associated with the graves was observed. Even though the burials are not maintained, preservation thereof is fair. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-34: Three graves within a homestead yard at Site EXIGO-CL2-BP13.

- **Site EXIGO-CL2-BP14 (S31.82870° E27.47311°)**

Two possible graves occurs in an open area next to the gravel road south-east of Guse. The graves are marked with rough elongated and circular stone structures which are filled-in in with rocks. No material culture associated with the possible burials was observed. The structures are not maintained and preservation thereof is poor. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-35: Two possible human burials at Site EXIGO-CL2-BP14.

- **Site EXIGO-CL2-BP15 (S31.83571° E27.47642°)**

An informal cemetery of the Ncapai family containing at least 6 graves south of Guse next to the gravel road. Three of the burials, which are placed to an east-west orientation, are dressed with marked marble headstones and gravestones. On grave bears a concrete dressing and the remaining burials are demarcated with stone cairns. No material culture associated with the graves was observed but preservation thereof is good. The fenced site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-36: A small family cemetery at Site EXIGO-CL2-BP15.

- **Site EXIGO-CL2-BP16 (S31.83688° E27.47975°)**

A possible burial occurs on a high ridge in an open area south-east of Guse. The presumed grave is marked with a rough circular stone structure which is filled-in in with rocks. No material culture associated with the possible burial was observed. The structure is not maintained and preservation thereof is poor. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-37: A possible human burial at Site EXIGO-CL2-BP16.

- **Site EXIGO-CL2-BP17 (S31.83747° E27.47998°)**

An informal cemetery containing at least 3 graves occurs on a high ridge southeast of Guse. One of the burials is dressed with a concrete gravestone and the remaining burials are demarcated with stone cairns. No material culture associated with the graves was observed but preservation thereof is good. The fenced site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-38: A small informal cemetery at Site EXIGO-CL2-BP17.

- **Site EXIGO-CL2-BP18 (S31.87092° E27.44786°)**

Another possible burial was documented in an open field in KwaGzina. The presumed grave is marked with a large rough circular stone structure which is filled-in in with rocks. No material culture associated with the possible burial was observed. The structure is not maintained and preservation thereof is poor. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply

Upgrade Project alignments and impact on the site might occur.

Figure 5-39: A possible human burial at Site EXIGO-CL2-BP18.

- **Site EXIGO-CL2-BP19 (S31.86963° E27.43843°)**

A small informal cemetery containing at least 7 graves occurs in a valley in KwaGzina. The majority of burials are dressed with marked marble headstones and gravestones. Other graves are demarcated with stone cairns. No material culture associated with the graves was observed but preservation thereof is good. The fenced site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-40: A small family cemetery at Site EXIGO-CL2-BP19.

- **Site EXIGO-CL2-BP20 (S31.86896° E27.43566°)**

Two graves occur in front of a homestead yard in KwaGzina. The graves are marked with rectangular elongated stone structure filled-in in with soil and they bare rough headstones. No material culture associated with the graves was observed. Even though the burials are not maintained, preservation thereof

is fair. The site, which is of high heritage significance, occurs in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade Project alignments and impact on the site might occur.

Figure 5-41: Two graves in front of a homestead at Site EXIGO-CL2-BP20.

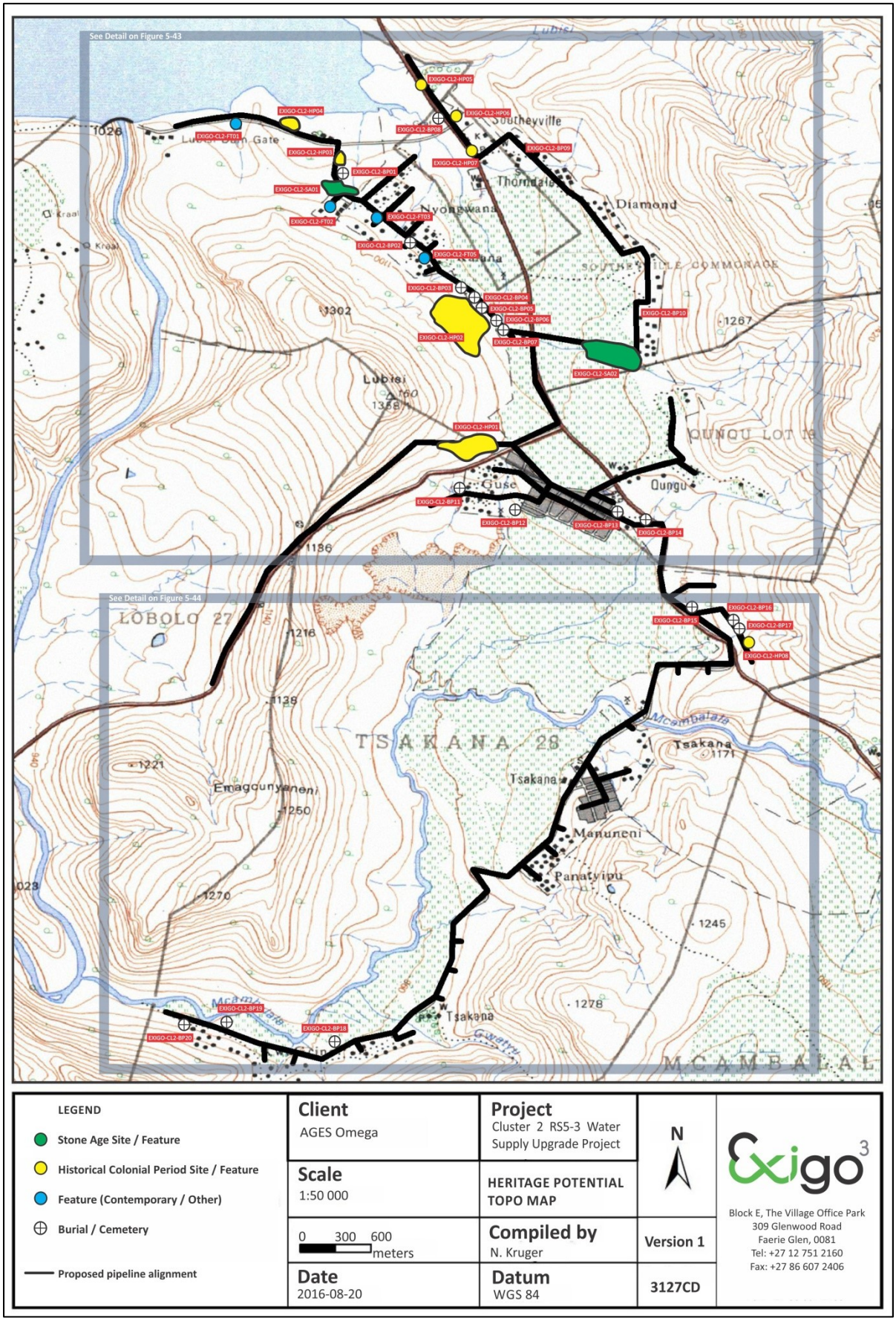

Figure 5-42: Topographic map of the locations of all heritage occurrences discussed in the text.

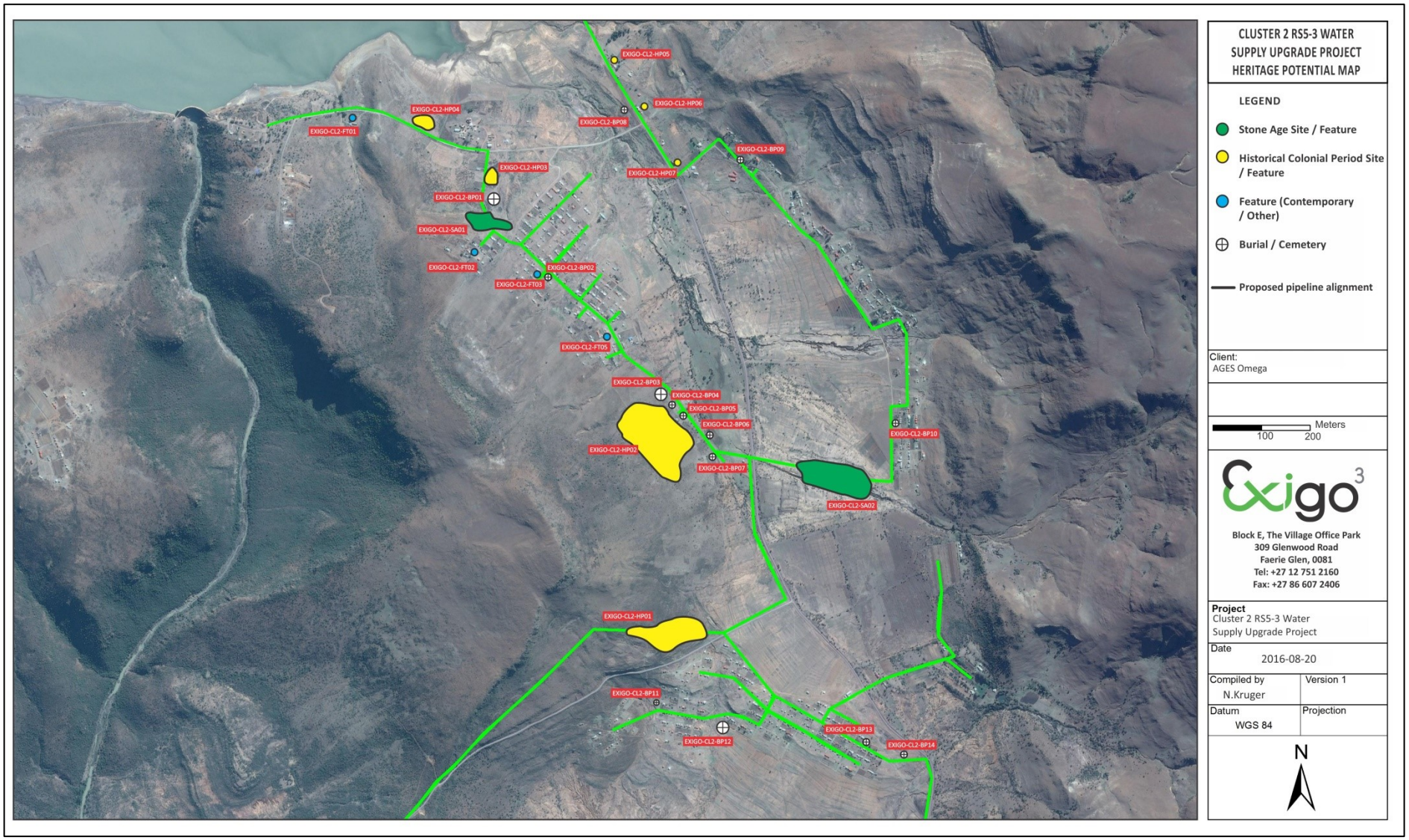

Figure 5-43: Aerial representation of the locations of heritage occurrences discussed in the text.

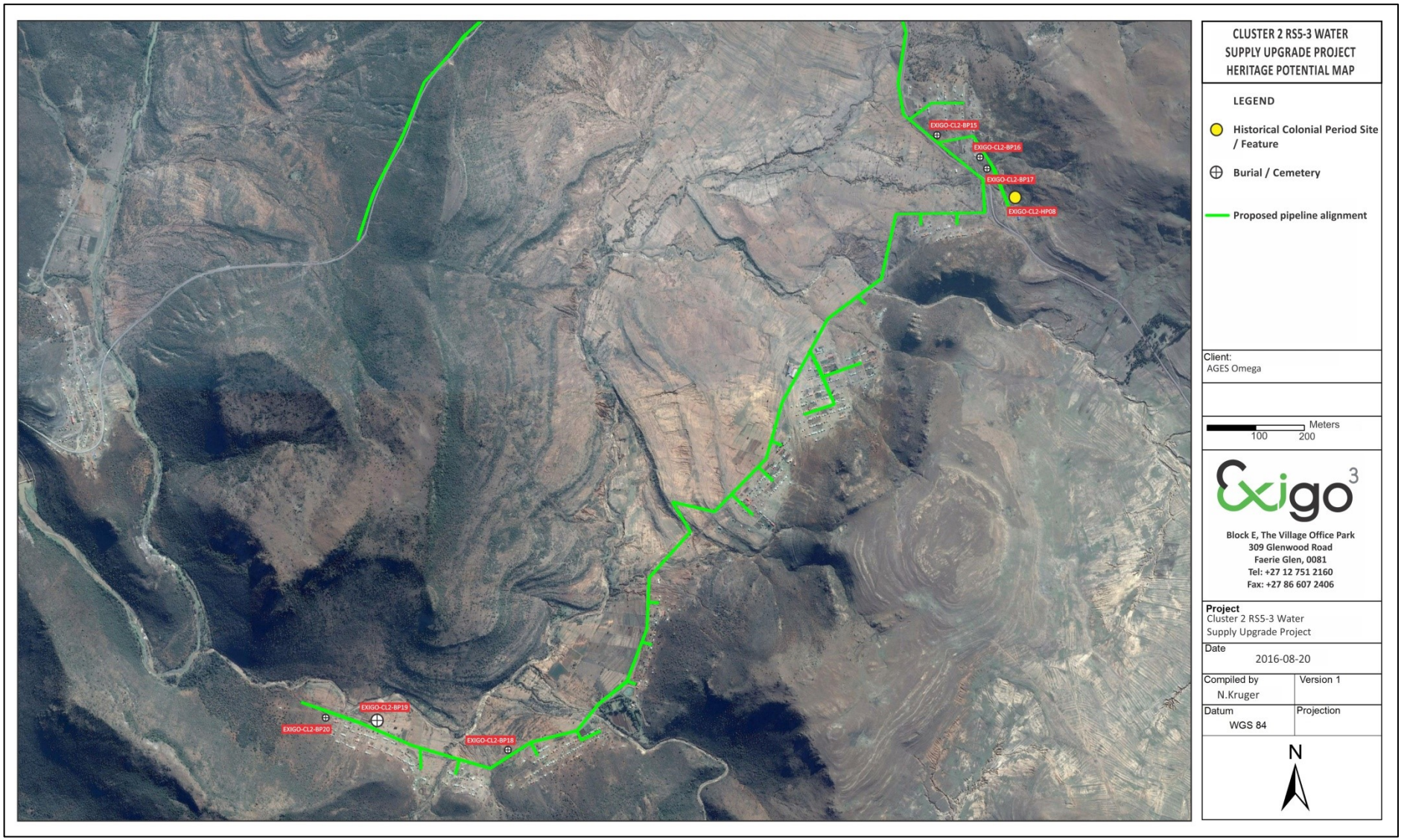

Figure 5-44: Aerial representation of the locations of heritage occurrences discussed in the text.

6 RESULTS: STATEMENT OF SIGNIFICANCE AND IMPACT RATING

6.1 Potential Impacts and Significance Ratings[2]

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 Addendum B.

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, 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). Heritage receptors were found in the project zones and potential impacts to heritage resources is foreseen.

The following table summarizes impacts to heritage resources at **Site EXIGO-CL2-HP03, Site EXIGO-CL2-HP04, Site EXIGO-CL2-HP08** and **Site EXIGO-CL2-FT01 - Site EXIGO-CL2-FT05** of **medium-low** and **low** significance located within the project area.

NATURE OF IMPACT: Impacts could involve displacement or destruction of structures or features in the proposed Project area.		
	Without mitigation	**With mitigation**
EXTENT	Local	Local
DURATION	Permanent	Permanent
MAGINITUDE	Minor	Minor
PROBABILITY	Probable	Negligible
SIGNIFICANCE	Low	Low
STATUS	Negative	Neutral
REVERSIBILITY	Non-reversible	Non-reversible

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

IRREPLACEABLE LOSS OF RESOURCES?	Yes	No
CAN IMPACTS BE MITIGATED?	N.A	
MITIGATION: Site monitoring by ECO.		
CUMULATIVE IMPACTS: No cumulative impact is anticipated.		
RESIDUAL IMPACTS: n/a		

The following table summarizes impacts to various heritage structures at **Site EXIGO-CL2-HP01 - Site EXIGO-CL2-HP07** of **medium** significance located in close proximity of the project area.

NATURE OF IMPACT: Impacts could involve displacement or destruction of heritage structures or features in the project area.		
	Without mitigation	**With mitigation**
EXTENT	Local	Local
DURATION	Permanent	Permanent
MAGINITUDE	Major	Minor
PROBABILITY	Improbable	Negligible
SIGNIFICANCE	Medium	Low
STATUS	Negative	Neutral
REVERSIBILITY	Non-reversible	Non-reversible
IRREPLACEABLE LOSS OF RESOURCES?	Yes	No
CAN IMPACTS BE MITIGATED?	N.A	
MITIGATION: Avoidance, site monitoring by ECO. Phase 2 Assessment.		
CUMULATIVE IMPACTS: No cumulative impact is anticipated.		
RESIDUAL IMPACTS: n/a		

The following table summarizes impacts to various heritage structures at **Site EXIGO-CL2-BP01 - Site EXIGO-CL2-BP20** of **high** significance located in close proximity of the project area.

NATURE OF IMPACT: Impacts could involve displacement or destruction of burials in the project area.		
	Without mitigation	**With mitigation**
EXTENT	Local	Local
DURATION	Permanent	Permanent
MAGINITUDE	Major	Minor
PROBABILITY	Improbable	Negligible
SIGNIFICANCE	High	Low
STATUS	Negative	Neutral

REVERSIBILITY	Non-reversible	Non-reversible
IRREPLACEABLE LOSS OF RESOURCES?	Yes	No
CAN IMPACTS BE MITIGATED?	N.A	
MITIGATION: Avoidance, site management (fencing, access control), strict site monitoring by ECO, grave relocation.		
CUMULATIVE IMPACTS: No cumulative impact is anticipated.		
RESIDUAL IMPACTS: n/a		

6.2 Evaluation Impacts

Previous studies conducted in the larger Lubishi area suggest a rich and diverse archaeological landscape. However, the proposed Cluster 2 RS5-3 Water Supply Upgrade Project alignments are situated in rural settlement areas. As such, the project site has largely been sterilised of potential heritage resources, especially those dating to pre-Colonial and prehistoric times. Cognisance should nonetheless be taken of archaeological material that might be present in surface and sub-surface deposits.

6.2.1 Archaeology

Two Stone Age localities, a number of Historical Period sites with stone wall enclosures, middens, stone terraces and stone wall foundations occur in close proximity of the proposed Cluster 2 RS5-3 Water Supply Upgrade alignments. The sites are generally of medium significance and unmitigated impact on the site is expected to be peripheral. The potential impact on the resources is considered to be MODERATE but this impact rating can be limited to a NEGLIBLE impact by the implementation of mitigation measures for the sites, if / when required**.**

6.2.2 Built Environment

A number of Historical Period buildings and contemporary livestock enclosures occur in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade alignments. For the rest of the project area, the general landscape has limited significance in terms of the built environment as there are only few apparent old buildings, structures, or features in the landscape. The potential impact on the built environment the resources is considered to be MODERATE but this impact rating can be limited to a NEGLIBLE impact by the implementation of mitigation measures for the sites, if / when required**.**

6.2.3 Cultural Landscape

Even though the larger Queenstown area comprises a rich cultural landscape, the landscape surrounding the proposed project area has been transformed by ruralisation, human settlement and agriculture. Further away from the project area, the landscape is typical of the Eastern Cape, with large areas of undulating hills, large mountains to the south and north and flatter plains in-between. This landscape stretches over many kilometres and the proposed project is unlikely to result in a significant impact on the landscape.

6.2.4 Graves / Human Burials Sites

At least 20 burial sites were located in the study area around Lubisi, ether in close proximity of the Cluster 2 RS5-3 Water Supply Upgrade alignments. These receptors are of high significance for their social and

cultural value. The potential impact on the resources is anticipated to be HIGH but this impact rating can be limited to a NEGLIBLE impact by the implementation of mitigation measures (avoidance, site management, site monitoring / grave relocation) for the sites, if / when required**.**

In the rural areas of the Eastern Cape Province graves and cemeteries often occur within settlements or around homesteads but they are also randomly scattered around archaeological and historical settlements. The probability of additional and 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. 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

Heritage resources occur inside and in close proximity of alignments proposed for water pipelines areas proposed for the Cluster 2 RS5-3 Water Supply Upgrade Project and potential peripheral impact on these heritage receptors is foreseen. However, this impact can be mitigated by means of avoidance and site monitoring during development. In the opinion of the author of this Archaeological Impact Assessment Report, the proposed Cluster 2 RS5-3 Water Supply Upgrade Project may proceed from a culture resources management perspective, provided that mitigation measures are implemented where applicable, and provided that no subsurface heritage remains are encountered during construction.

6.3 Management actions

Recommendations for relevant heritage resources management actions are vital to the conservation of heritage resources. A general guideline for recommended management actions is included in Section 10.4 of the Addendum. The following management measures would be required during implementation of the proposed Cluster 2 RS5-3 Water Supply Upgrade Project.

OBJECTIVE: prevent unnecessary disturbance and/or destruction of previously undetected heritage receptors.

No site specific action in terms of mitigation is required for recent features (Site EXIGO-CL2-FT01 - Site EXIGO-CL2-FT05) of low significance located in close proximity of the within the project area. However, the general and frequent monitoring of construction in this area is recommended in order to detect possible marginal impact on the cemetery.

For the remains of two Historical Period sites (Site EXIGO-CL2-HP03, Site EXIGO-CL2-HP04, Site EXIGO-CL2-HP08) of medium-low significance within the project area the following are required in terms of heritage management and mitigation:

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 in order to detect and preserve previously undocumented heritage receptors. **Permitting:** Destruction permitting if and when required.		ECO, HERITAGE ASSESSMENT PRACTITIONER	Monitor as frequently as practically possible. Prior to the commencement of construction and earth-moving.
PERFORMANCE INDICATOR	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
MONITORING	Successful location of sites by person/s monitoring.		

For the various Historical Period heritage structures (Site EXIGO-CL2-HP01 - Site EXIGO-CL2-HP07) of medium significance within the project area the following are required in terms of heritage management and mitigation:

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 conserve the historical fabric of the sites and to locate undetected heritage remains 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.		ECO, HERITAGE ASSESSMENT PRACTITIONER	Monitor as frequently as practically possible.
Preferred Mitigation Procedure			
Avoidance: Implement a heritage conservation buffer of at least 20m around the heritage resource, redesign the proposed footprint to avoid the heritage resource and the proposed conservation buffer.		DEVELOPER	All phases of construction and operation.
Alterative Mitigation Procedure (**if preferred mitigation procedure is not feasible**)			
Documentation of sites if features are to be impacted on by development (mapping, desktop study Phase 2 site sampling). Permitting if and when required.		HERITAGE ASSESSMENT PRACTITIONER	Prior to the commencement of construction and

			earth-moving.
PERFORMANCE INDICATOR	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
MONITORING	Successful location of sites by person/s monitoring.		

For the highly significant burial sites (Site EXIGO-CL2-BP01 - Site EXIGO-CL2-BP20) occurring within the project area the following are required in terms of heritage management and mitigation:

PROJECT COMPONENT/S	All phases of construction and operation.		
POTENTIAL IMPACT	Damage/disturbance to subsurface burials and surface burial features.		
ACTIVITY RISK/SOURCE	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
MITIGATION: TARGET/OBJECTIVE	To locate human burials as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.		
MITIGATION: ACTION/CONTROL		**RESPONSIBILITY**	**TIMEFRAME**
Preferred Mitigation Procedure			
Avoidance: Implement a heritage conservation buffer of at least 20m around the grave / cemeteries, if necessary redesign the pipeline alignment to avoid the heritage resource and the proposed conservation buffer. Fence all burial places and apply access control. Implement a site management plan detailing strict site management conservation measures.		DEVELOPER QUALIFIED HERITAGE SPECIALIST	Prior to the commencement of construction and earth-moving.
Alterative Mitigation Procedure (**if preferred mitigation procedure is not feasible**)			
Grave Relocation: Relocation of burials and documentation of site, full social consultation with affected parties, possible conservation management and protection measures. Subject to authorisations and relevant permitting from heritage authorities and affected parties.		QUALIFIED HERITAGE SPECIALIST	Prior to the commencement of construction and earth-moving.
Fixed Mitigation Procedure (**required**)			
Site Monitoring: Regular examination of trenches and excavations in this area in order to avoid the destruction of previously undetected burials or heritage remains.		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 Lubisi and the foothills of the Drakensberg is rich in pre-historical and historical remnants, significantly so San rock paintings and associated sites. However, the study area has been altered extensively by recent ad historical activities largely sterilising the area of heritage remains. As such, only two sensitive heritage receptors were identified in the Cluster 2 RS5-3 Water Supply Upgrade Project study areas. The following recommendations are made based on general observations in the proposed Cluster 2 RS5-3 Water Supply Upgrade Project Area:

- A Palaeontological Desktop Study should be considered for the development. Should fossil remains such as fossil fish, reptiles or petrified wood be exposed during construction, these objects should carefully safeguarded and the relevant heritage resources authority (SAHRA) should be notified immediately so that the appropriate action can be taken by a professional palaeontologist.
- A number of contemporary livestock stone enclosures (**Site EXIGO-CL2-FT01 - Site EXIGO-CL2-FT05**) are of low significance. The features are located in close proximity of the project area and it is recommended that the sites and any activities in its surrounds be monitored in order to avoid the destruction of previously undetected heritage remains.
- The remains of three Historical Period sites (**Site EXIGO-CL2-HP03, Site EXIGO-CL2-HP04, Site EXIGO-CL2-HP08**) are of medium-low significance due to the poor preservation of the sites. The sites are located in close proximity of the project area and it is recommended that the sites and any activities in its surrounds be monitored in order to avoid the destruction of previously undetected heritage remains. The necessary destruction permits should be obtained from the relevant Heritage Resources Authorities prior to the possible destruction of the features.
- Two large Historical Period settlement areas with stone wall enclosures (**Site EXIGO-CL2-HP01 - Site EXIGO-CL2-HP02**) as well as a number of Historical Period buildings (**Site EXIGO-CL2-HP05 - Site EXIGO-CL2-HP07**) are of medium significance and the sites occur within the project are in close proximity of the project area. It is primarily recommended that the proposed footprint be adjusted to avoid these resources and that a conservation buffer of at least 20m around the site be implemented. However, should impact on the sites prove inevitable, the occurrences should be adequately documented by means of Phase 2 Specialist Studies. Such studies should minimally include the mapping, documentation and possible sampling of the sites in order to conserve the historical fabric of the heritage resources. The necessary excavation and destruction permits should be obtained from the relevant Heritage Resources Authorities prior to site sampling and destruction. Generally, the sites should be monitored by an informed ECO in order to avoid the destruction of previously undetected heritage remains.
- Graves and burials identified within close proximity of the project alignments (**Site EXIGO-CL2-BP01 - Site EXIGO-CL2-BP20**) are of high significance and these sites might be impacted on by the proposed project. In most of these cases, the graves and cemeteries are situated within settlements, often around or very close to homesteads and homestead buildings, roads and other infrastructure. These locations of human burials along the proposed alignment present challenges in terms of the conservation and management of these sensitive heritage receptors. As a primary measure, Heritage Authority (SAHRA) guidelines require a 100m conservation buffer for all burials but the implementation of this guideline will prove problematic and impractical in a number of instances considering the locations of many of the burials, as noted above. It is recommended that human burials occurring in close vicinity of the proposed pipeline alignment be fenced off and conserved and a conservation buffer of at least 20m be maintained around the heritage receptors. Note that this recommended relaxation of the standard 50m buffer for burials in closed proximity of the alignment is subject to approval by SAHRA. It is recommended that all burials, irrespective

of their placement along the alignment be fenced off, conserved and that access control be applied during construction. The developer should carefully liaise with the heritage specialist and SAHRA with regards to the management and monitoring of any human grave or cemetery in order to detect and manage negative impact on the sites.

Should impact on any human burial prove inevitable, full grave relocations are recommended for these burial grounds. This measure should be undertaken by a qualified archaeologist, and in accordance with relevant legislation, permitting, statutory permissions and subject to any local and regional provisions and laws and by-laws pertaining to human remains. A full social consultation process should occur in conjunction with the mitigation of cemeteries and burials (see Addendum B).

- A careful watching brief monitoring process is recommended whereby an informed ECO inspect the construction sites on regular basis in order to monitor possible impact on heritage resources. Should any subsurface paleontological, archaeological or historical material or heritage resources be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately
- 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. Should any subsurface paleontological / archaeological / historical material and /or graves/human remains be uncovered, all activities should be suspended and the archaeological specialist should be alerted immediately.
- It should be noted that 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).

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 the larger landscape 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 Cluster 2 RS5-3 Water Supply Upgrade Project Development 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 Middle Stone Age stone tools.
- Formal Later Stone Age 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 site 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 (EC-PHRA).

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10 ADDENDUM A: 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.

a. 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-

(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 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:

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

(b) 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;

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

(d) 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;

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

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

(g) 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 (EC-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 70 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, augering), 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 reinterment [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.

A fundamental aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information, which would otherwise be lost.

11 ADDENDUM B: GRAVE RELOCATION AND SITE MANAGEMENT: STATUTORY MANDATE

11.1 Archaeology, graves and the law

Note that four categories of graves can be identified. These are:
- Graves younger than 60 years;

- Graves older than 60 years, but younger than 100 years;

- Graves older than 100 years; and

- Graves of victims of conflict or of individuals of royal descent

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:
(a) destroy, damage, alter, exhume or remove from its original position of 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 or 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; or
(c) bring onto or use at a burial ground or grave referred to in paragraph
(a) Or (b) any excavation, or any equipment which assists in the detection or recovery
of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissues Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925). Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.
A registered undertaker can only handle human remains or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.
Summary of applicable legislation and legal requirements:

- Human Tissue Act (Act 65 of 1983 as amended).
- Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925)
- Ordinance on Excavations (Ordinance no. 12 of 1980)
- Local and regional provisions, laws and by-laws
- National Heritage Resources Act (Act no. 25 of 1999)
- Permit from SAHRA for removal of human remains

11.2 Graves: necessary procedures

When graves are located in an area demarcated for development, the following mitigation options might be considered:

- **Conservation:** The establishment of a 50 meter buffer zone around the burial place which is fenced off and, maintained and conserved. *This option is generally recommended as the relocation of burial places is an extremely complicated, time consuming and sensitive process.*

- **Mitigation and relocation:** In the event where impact on the burial place will occur, mitigation measures may entail full grave relocation. Such a relocation process must be undertaken by suitably qualified individuals with a proven track record. The relocation must also be undertaken in full cognisance of all relevant legislation, including the specific requirements of the National Heritage Resource Act (Act no. 25 of 1999). Furthermore, a concerted effort must also be made to identify all buried individuals and to contact their relatives and descendants. Other legislative measures which may be of relevance include the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), the Human Tissues Act (Act no. 65 of 1983, as amended), the Ordinance on Excavations (Ordinance no. 12 of 1980) as well as any local and regional provisions, laws and by-laws that may be in place.

Methodology for grave relocations:

- **Documentation:** Physical documentation of graves and determining context of graves prior to exhumation: Photographic, GPS, Site Map, Historical Background.
- **Public Notices:** In order to locate and notify descendant families, notices (in compliance with the National Heritage Resources Act) must be placed on the site/s, indicating the intent of relocation. These notices, translated into at least 3 languages, have to remain in place for a minimum of 60 days. Additionally, newspaper adverts and notices on local radio stations announcements are required.
- **Social consultation:** If any descendant families were located during initial consultation/public participation phases, a full social consultation action will lodged.
- **Permit application:** Application for a permit from SAHRA can only be obtained after all necessary consent documents from descendant families, landowners and relevant authorities have been secured.
- **Exhumation & relocation**
  The exhumation, investigation and reburial of the burial place may commence after SAHRA has issued relevant permits and permissions

12 ADDENDUM C: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE

12.1 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			

12.2 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. sitespecific, 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.

12.3 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:** 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.	**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 - 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%)

12.4 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

Enhancement is appropriate where the overall heritage significance and its public appreciation value are improved. It does not imply creation of a condition that might never have occurred during the evolution of a place, e.g. the tendency to sanitize the past. This management action might result from the removal of previous layers where these layers are culturally of low significance and detract from the significance of the resource. It would be appropriate in a range of heritage contexts and applicable to a range of resources. In the case of formally protected or significant resources, appropriate enhancement action should be encouraged. Care should, however, be taken to ensure that the process does not have a negative impact on the character and context of the resource. It would thus have to be carefully monitored