

# LW CONSULTANTS: THE PROPOSED MARGAUX PRA PROJECT, PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE

## ARCHAEOLOGICAL IMPACT ASSESSMENT

Submitted subject to Section 38(3) and Section 38(8) of the NHRA

**Prepared For:**

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Project Code	Date	Version	Status
NH-R-22-009	15 April 2022	1.0	Draft

**ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) ON FARMS PARK 107, MARGAUX 108 AND RUDESHEIM 109 FOR THE PROPOSED MARGAUX PRA PROJECT IN THE PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE**

**SPECIALIST DECLARATION OF INDEPENDENCE**

I, Nelius Kruger, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Margaux PRA 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, EC-PHRA 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;
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- All the particulars furnished by me in this declaration are true and correct.



Signature of specialist

**Name:** Nelius Kruger

**Date:** 14 April 2022

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## EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study for the proposed prospecting on the farms Park 107, Margaux 108 and Rudesheim 109 in the Pixley ka Seme District Municipality of the Northern Cape Province. The Margaux PRA Project entails the prospecting for Manganese Iron and Silica over a surface area of approximately **7540ha**. The proposed project will include soil sampling and percussion drilling at locations to be determined by geological studies. The report includes background information on the area's archaeology, its representation in Southern Africa, and the history of the larger area under investigation, survey methodology and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the South African Heritage Resources Agency (SAHRA) and recommendations contained in this document will be reviewed.

<b>Project Title</b>	Margaux PRA Project
<b>Project Type / Scope</b>	Mining / Prospecting
<b>Project Impact Footprint/s Area</b>	<b>7540ha</b>
<b>Project Location</b>	S28.925939° E22.779998°
<b>1:50 000 Map Sheet</b>	2822DC, 2822DD, 2922BA, 2922BB
<b>Farm Portion / Parcel</b>	Farms Park 107, Margaux 108 and Rudesheim 109
<b>Magisterial District / Municipal Area</b>	Pixley ka Seme District Municipality
<b>Province</b>	Northern Cape Province

The Northern Cape Province at large encompasses a significant heritage legacy. Numerous 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. Specifically, the Kathu Archaeological Complex approximately 70km north of Postmasburg and Griekwastad with sites such as Kathu Pan, Kathu Townlands and Bestwood has yielded material of international scientific importance, documenting Earlier, Middle and Later Stone Age industries, habitation and settlement patterns. In addition, a wealth of Later Stone Age rock art sites, most of which are in the form of rock engravings are to be found in the larger landscape. These sites occur on hilltops, slopes, rock outcrops and occasionally in river beds. Sites dating to the Iron Age occur in the north eastern part of the Province but environmental factors delegated that the spread of Iron Age farming westwards from the 17th century was constrained mainly to the area east of the Langeberg Mountains. However, evidence of an Iron Age presence as far as the Upington area in the eighteenth century occurs in this area. Moving into recent times, the archaeological record reflects the development of a rich colonial frontier, characterised by, amongst others, a complex industrial archaeological landscape such as mining developments at Postmasburg and Griekwastad, which herald the modern era in South African history. Locally, previous research in the Postmasburg and Griekwastad area focused on the history of prehistoric specularite mining and more recently, Culture Resources Management studies have confirmed the distribution of Middle and Later Stone age artefacts in calcrete deposits around pans and springs.

An analysis of historical aerial imagery and archive maps of areas subject to this assessment on Margaux suggests a sparsely populated landscape which has seen some historical farming activities possibly sterilising some areas of heritage remains in places. During an archaeological site assessment of the project area, *in situ* archaeological or heritage remains were encountered. **It should be stressed that access to the farms Park 107 and Rudesheim 109 were not permitted at the time of this assessment and these properties were not included in the field surveys subject to this assessment.**

The following recommendations are made based on general observations in the proposed Margaux PRA Project in terms of heritage resources management:

- Permission for site access could not be obtained for the Farms Park 107 and Rudesheim 109 and these farms were not included in the site survey. It is required that these properties be investigated by means of archaeological field surveys and findings from the survey should be included in this / an AIA report for review by the relevant authorities prior to prospecting on these farms.
- Stone Age remains occur abundantly in the landscape and the field assessment located Earlier Stone Age (ESA) and Middle Stone Age (MSA) localities (**NH-MG-2822-01**) in project area. These localities are of heritage significance and it is recommended that drilling hole locations are re-assessed by means of a site walk-over by the heritage specialist in order to rate the localised impact on Stone Age resources. Should such resources be impacted on, the localities will require mitigation, including a detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region. A mitigation strategy should be developed based on an understanding of the archaeology and history of the broader region and this should be followed by the recording and surface and possible subsurface sampling of the Stone Age localities by a qualified Stone Age Specialist. Mitigation of these localities should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.
- A Hunter Gatherer and Herder rock shelter (**NH-MG-2822-02**) containing rock art, Stone Age scatters (including specifically MSA and LSA type artefacts) as well as a deposit of organic material containing cultural material was noted in the project area. Material culture noted at the shelter suggest multiple - probably brief - occupational events by both Hunter Gatherers and Herder groups over many years. The site has potential to yield valuable archaeological information on the regional development of the LSA and it has been assigned a high archaeological significance. It is recommended that drilling hole locations are re-assessed by means of a site walk-over by the heritage specialist in order to rate the localised impact on Stone Age resources. Should the site be impacted on, the shelter will require mitigation, including a detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region. A mitigation strategy should be developed based on an understanding of the archaeology and history of the broader region. The process should include the detailed site mapping, recording of surface features and subsurface sampling of cultural material in the shelter by a qualified Stone Age Specialist. Rock Art and markings should be documented and analyzed by suitable qualified specialist in the field. Mitigation of this heritage resource should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.
- No specific mitigation measures are required for the remains of the old Margaux farmstead (**NH-MG-2822-03**) as little of the site and structural elements remain but it is recommended that the site be monitored during all stages of development in order to detect and preserve previously undocumented heritage receptors that might occur here.
- It is necessary that the heritage value of small iron ore / specularite mine or sourcing site (**NH-MG-2822-06**) be more clearly defined pending larger landscape studies in the use of raw materials from similar mineral sources.
- A small building used as a telephone booth facility on the farm Margaux (**NH-MG-2822-04**) was documented in a river valley in the project area. The building might date to the Historical and it might be of heritage significance. Should impact occur, the necessary application should be made for the relevant alteration and / or destruction permits. In general, the site should be monitored in order to detect impact on the site and the potential presence of previously undetected burials or heritage remains at the earliest opportunity.

- The owner of the Farm Margaux indicated that graves were present around the old Margaux farmstead. The receptor is of high significance in terms of heritage, social and cultural value and it might be impacted on by the proposed project. The exact position of the burial site could not be established as the surroundings were densely vegetated and it is recommended that the burial site location be identified and plotted. As a primary measure, Heritage Authority (SAHRA) guidelines require a 50m conservation buffer for all burials. It is recommended that human burial site be fenced off with wire, chicken wire or palisade fencing of a minimum height of 1.8m placed no closer than 2m from the burial. An access gate should be erected and access control should be applied to the site. A sign should be positioned on the fence indicating the heritage significance of the site and contact details for site visitation. A heritage Site Management Plan (SMP) should be compiled for the burial to stipulate conservation measures, responsible persons and chance find procedures for further heritage mitigation. 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).**

#### Margaux PRA Project Heritage Sites Locations

Site Code	Coordinate S E	Short Description	Field Rating	Mitigation Action
NH-MG-2822-01	S28.939690° E22.799485°	Stone Age Localities	3. Medium significance	<p><b>Site Monitoring:</b> Frequent monitoring during construction by the heritage consultant or an ECO familiar with the heritage occurrences of the site.</p> <p><b>Phase 2 Mitigation:</b> Legally compliant Phase 2 Study and assessment if impacted on.</p> <p><b>Permitting:</b> Apply for relevant alteration / destruction permits for Phase 2 and consequent impact.</p>
NH-MG-2822-02	S28.950064° E22.763219°	Stone Age	4. High significance	<p><b>Site Monitoring:</b> Frequent monitoring during construction by the heritage consultant or an ECO familiar with the heritage occurrences of the site.</p> <p><b>Phase 2 Mitigation:</b> Legally compliant Phase 2 Study and assessment if impacted on.</p> <p><b>Permitting:</b> Apply for relevant alteration / destruction permits for Phase 2 and consequent impact.</p>
NH-MG-2822-03	S28.957264° E22.766181°	Historical Period Site	2. Low significance	<p><b>Site Monitoring:</b> Site monitoring by the heritage consultant or an ECO familiar with the heritage occurrences of the site.</p> <p>No further mitigation required.</p>
NH-MG-2822-04	S28.961130° E22.762202°	Historical Period Site	2. Medium-low significance	<p><b>Site Monitoring:</b> Frequent monitoring during construction by the heritage consultant or an ECO familiar with the heritage occurrences of the site.</p> <p><b>Permitting:</b> Apply for relevant alteration / destruction permits for Phase 2 and consequent impact.</p>
NH-MG-2822-05	S28.957264° E22.766181°	Burial Site	4. High significance	<p><b>Avoidance:</b> 50m conservation buffers, site fencing and access control, site management plan</p> <p><b>Site monitoring:</b> Weekly monitoring during initial site clearing and earth moving activities by an ECO familiar with the sensitivity of receptors, or the Heritage Consultant. Monthly monitoring of the burial sites is recommended during subsequent stages of development.</p> <p><b>Grave Relocation:</b> Grave relocation subject to</p>

				authorizations and permitting if impacted on.
<b>NH-MG-2822-06</b>	S28.950396° E22.763492°	Mining / Quarrying Site	<b>Unknown</b>	More clearly define heritage value of resource pending larger landscape studies.

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).

This study comprises of an AIA, including a basic pre-feasibility and Phase 1 AIA assessment, with comment on the cultural landscape and socio-cultural aspects of the project only. The report does not include additional specialist heritage components inclusive of a full socio-cultural assessment or historical architecture.

## NOTATIONS AND TERMS/TERMINOLOGY

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

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

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

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

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

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

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

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

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

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

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

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

**Midden:** Refuse that accumulates in a concentrated heap.

**Microlith:** A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.

**Monolith:** A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

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

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

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

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

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

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

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

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

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

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

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**LIST OF ABBREVIATIONS**


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

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## 1 BACKGROUND

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### 1.1 Scope and Project Brief

LW Consultants has commissioned an Archaeological Impact Assessment (AIA) as part of an Environmental Impact Assessment process for the proposed establishment of a residential development northwest of Postmasburg in the Northern Cape Province (hereafter referred to as the “Margaux PRA Project” or “the Project”). The rationale of the 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.

The project entails the prospecting for Manganese, Iron and Silica including soil sampling and percussion drilling consisting out of 100 drill holes at locations to be determined by geological studies (refer to Figure 1-1). The exploration activities on the proposed project area will be done in various phases, which will include a detailed desktop study, surface sampling as well as Reverse Circulation Percussion and Bulk Sampling to delineate the various commodity zones possibly underlying the property to determine minable resources.

Soil and stream sampling will be done to obtain the locality of the sub-outcrops of the Lower Critical Zone on the property. Sampling will be done according to the specifications as set out in the prospecting plan mentioned earlier. The initial drilling proposed is done to demarcate the commodity body with its boundaries. The number of drill holes are not foreseen to exceed 33 holes initially, as it can only be determined once the area underlain by the Critical Zone is known. The exact drill hole localities and depth (for calculation purposes an estimation of 100 m will be used) are also dependent on the geometry of the underlying commodity band/s, as well as the underlying geological structure\'. All drill holes will be logged every meter containing information such as hole location, hole depth, ore depth and other geological structures encountered within the hole. The drill chips samples will be taken, stored within the appropriate containers and safeguarded for future referencing. Rehabilitation will be done as suited for percussion drilling. Each hole will be backfilled with the material extracted during the drilling operations in a sequence of ‘last out = first in’. Each hole will be fully rehabilitated before commencing to the next drill location. In this way rehabilitation is time and cost effective.

Bulk sampling is proposed in the form of trail mining over a total extent of  $\pm 5$  hectares. Rehabilitation will form an integral part of the bulk sampling operation and waste material will be backfilled as the operation commences. The commodity extracted and sold will be intensively logged and record kept thereof. Rehabilitation will form an integral part of the bulk sampling activity, where the waste material is backfilled and sloped according to legislative acceptable standards. Rehabilitation is further finalized by the spreading of the overburden and topsoil in their respective order. A two-to-three-year monitoring programme will be initiated to ensure the successful re-establishment of vegetation

Phase 4 is strongly dependent on the previous phases for the location of these drill holes as well as the grid on which these holes will be drilled. Updated plans and programmes for this phase will be submitted to the Department of Mineral Resources and Energy before the commencement of this phase. This is done to determine the grade distribution throughout the commodity body and the exact extent of the commodity body. Rehabilitation will be done as suited for percussion drilling. Each hole will be backfilled with the material extracted during the drilling operations in a sequence of ‘last out = first in’. Each hole will be fully rehabilitated before commencing to the next drill location. In this way rehabilitation is time and cost effective.

## 1.2 Project Direction

Mr Neels Kruger acts 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).

## 1.3 Project Terms of Reference

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

- *Provide a detailed description of all archaeological artefacts, structures (including graves) and settlements which may be affected, if any.*
- *Assess the nature and degree of significance of such resources within the area.*
- *Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;*
- *Assess and rate any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities.*
- *Propose possible heritage management measures provided that such action is necessitated by the development.*
- *Liaise and consult with the South African Heritage Resources Agency (SAHRA). A Notification of Intent to Develop (NID) will be submitted to SAHRA at the soonest opportunity.*
- *Note that this study comprises of an AIA, including a basic pre-feasibility and Phase 1 AIA assessment, with comment on the cultural landscape and socio-cultural aspects of the project only. The report does not include additional specialist heritage components inclusive of a full socio-cultural assessment or historical architecture.*

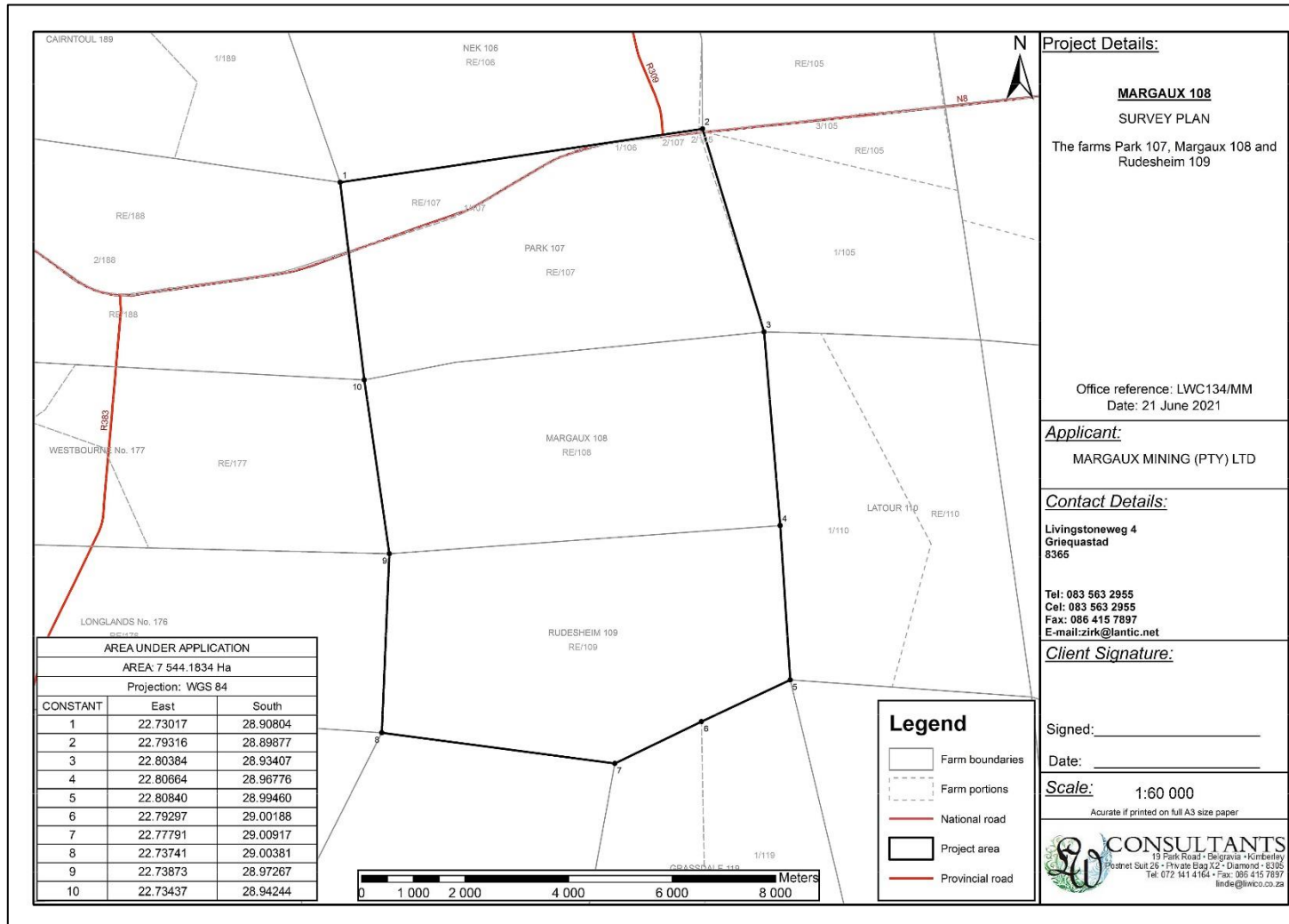


Figure 1-1: Map indicating the project boundary subject to the Margaux PRA Project.

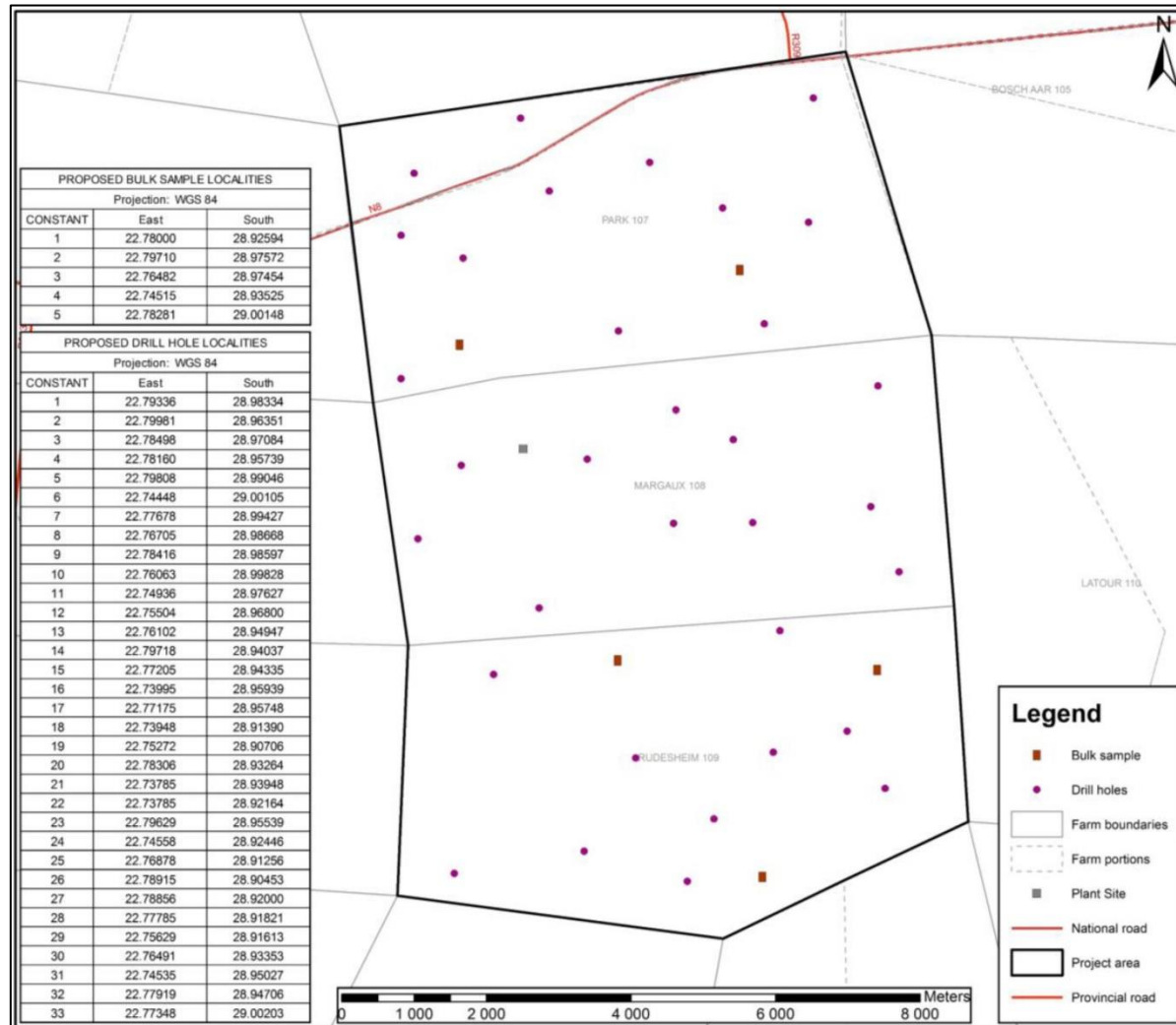


Figure 1-2: Map indicating the proposed drilling positions subject to the Margaux PRA Project.

## 2 LEGISLATIVE FRAMEWORK

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### 2.1 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.

#### 2.1.1 Legislation regarding archaeology and heritage sites

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

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

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

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

In addition, the national estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological sites
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

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

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

and

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



- (a) *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) *destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (d) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58)."*

and

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

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."*

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

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

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

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

#### **c. National Heritage Resources Act No 25 of 1999, Section 35**

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

#### **2.1.2 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.

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

## 2.2 Rating of significance

The National Heritage Resources Act (Act no 25 of 1999) also stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- *Grade I:* Heritage resources with qualities so exceptional that they are of special national significance;
- *Grade II:* Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region;
- *Grade III:* Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, as set out in section 3(3) of the act.

Significance is influenced by the context and state of the archaeological site. Six criteria were considered following Kruger (2019):

- 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.

The categories of significance were based on the above criteria the above and the grading system outlined in NHRA and summarised below:

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

### 3 REGIONAL CONTEXT

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#### 3.1 Area Location

The proposed development area for the Margaux PRA Project is situated on Farms Park 107, Margaux 108 and Rudesheim 109 approximately 50km west of the town of Griekwastad and 70km south of Postmasburg in the ZF Pixley ka Seme District Municipality, Northern Cape Province. The N8 road connecting with Groblershoop routes directly north of the project area. The site is situated approximately 160km south-east of the Northern Cape town of Upington. The study areas appear on 1:50000 map sheet 2822DC, 2822DD, 2922BA, 2922BB (see Figure 2-1) and coordinates for the proposed project are as follows (see Figure 3-1):

- **S28.925939° E22.779998°**

#### 3.2 Area Description: Receiving Environment

The Northern Cape area around Postmasburg and Griekwastad receives around 200-400 mm of rain in the summer months. The local vegetation is classified as Karroid Bushveld where a transition occurs between trees in a mixed grassveld, typical to the Bushveld complex, to a Karoo landscape with more open grasslands and succulents (Acocks 1988). The geology of the region is underlain by rocks older than 1000 million years and the overburden consists mainly of geologically recent Kalahari sand, which in turn is un-fossiliferous. Some quartzites also occur on area on the landscape. Previous studies in the area indicated that the area is underlain more specifically by Proterozoic-aged rocks belonging to the Asbestos Hills Subgroup of the Transvaal Supergroup (Beaumont 2009). A number of small natural pans are scattered across the landscape. The semi-arid area around Postmasburg and Griekwastad supports a scrub cover, largely vaalbos (*Tarchonanthus capensis*), interspersed with sparse, mainly thorn-bearing bush which includes swarthaak (*Acacia detinens*), kameeldoring (*Acacia giraffae*), soetdoring (*Acacia karroo*), witgatboom (*Boschia albitrunca*) and kareeboom (*Rhus lancea*).

#### 3.3 Site Description

The Margaux PRA Project is situated on portions of the farms Park 107, Margaux 108 and Rudesheim 109. The western portion of the project area is characterized by a vast mountain and rolling hills where the landscape inclines gradually to the east. The region flattens out to the east with flat parcels of land vegetated with grasslands. A number of farm roads access roads occur across the property which is currently used for game and livestock farming.

There is evidence of small-scale and localized agriculture on the farms but for the most part the property remains relatively pristine.

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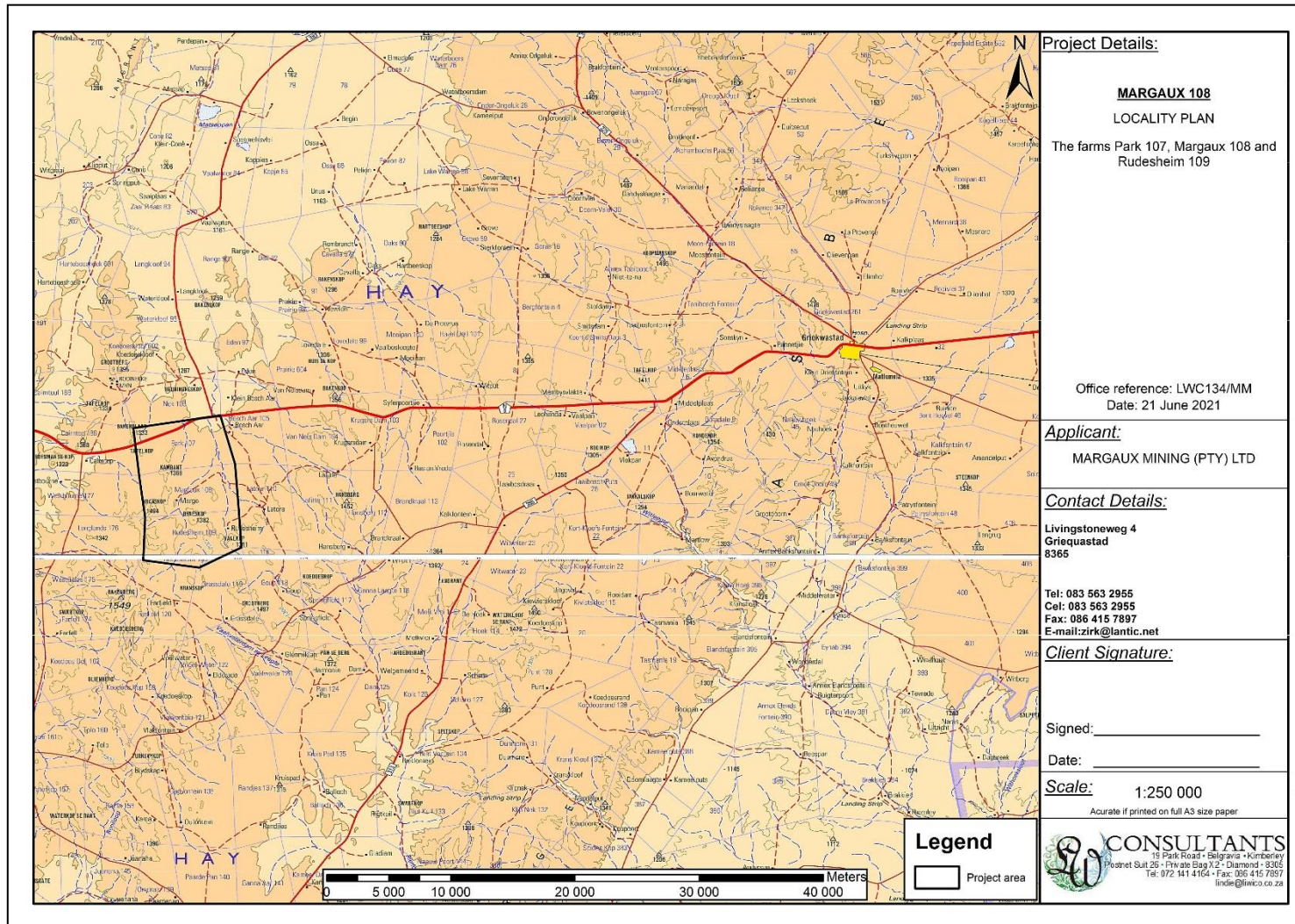


Figure 3-1: 1:250 00 Map representation of the location of the proposed Margaux PRA Project (sheet 2822).

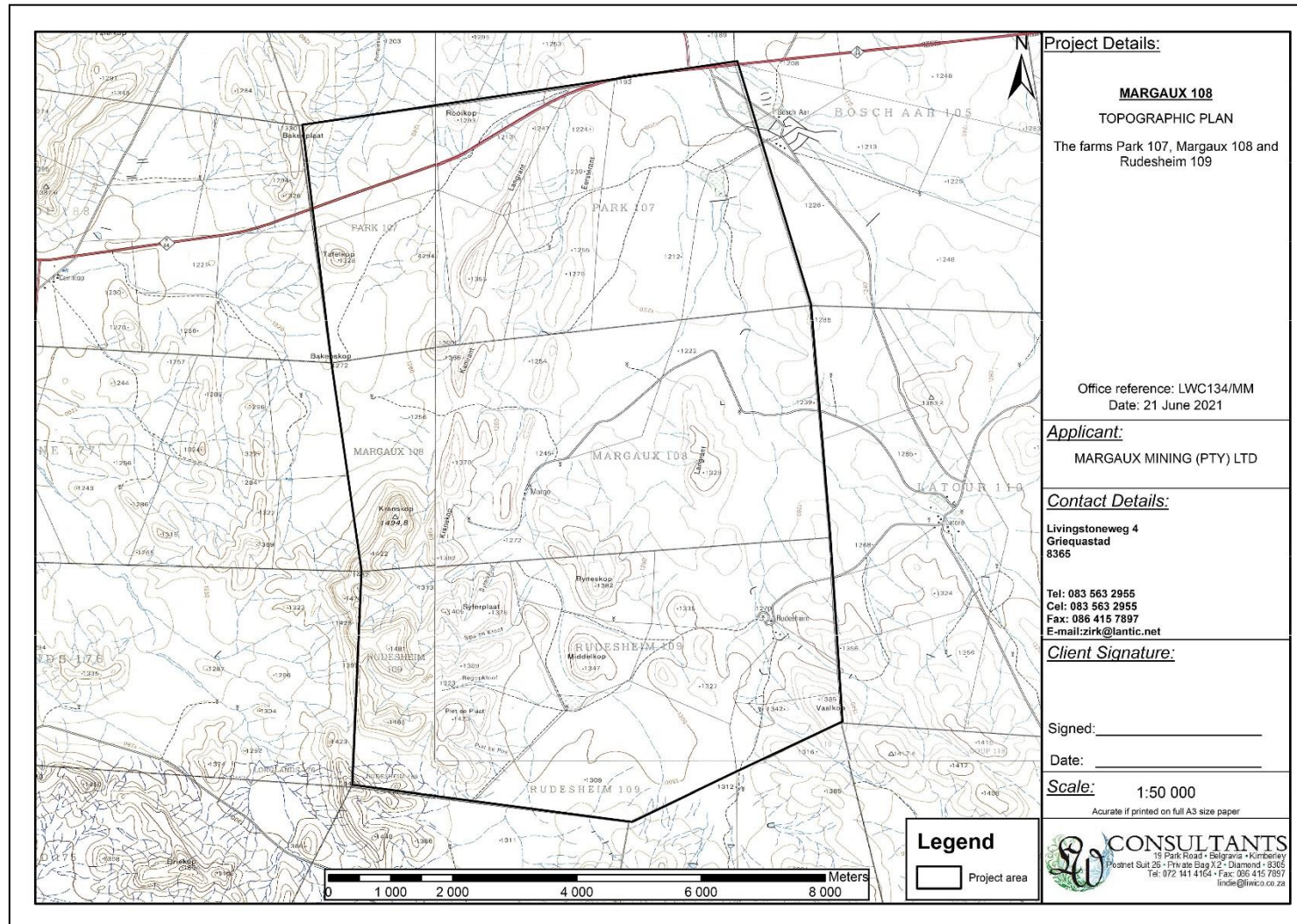


Figure 3-2: Topographic map providing a regional context for the proposed Margaux PRA Project target farms.

## 4 METHOD OF ENQUIRY

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### 4.1 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.

#### 4.1.1 Desktop Study

The larger landscape around Postmasburg and Griekwastad 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 Postmasburg and Griekwastad area and the larger landscape of this section of the Northern Cape Province. A number of Cultural Resources Management (CRM) projects have been conducted in the region.

- Morris, D. & Beaumont, P.B. 1994. Ouplaas 2 Rock Engravings, Danielskuil. An unpublished report by the McGregor Museum.
- Morris, D. 1999. Proposed mining areas and properties at Ulco, Northern Cape, Including the vicinities of Gorrokop and Groot Kloof. An unpublished report by the McGregor Museum.
- Beaumont, P.B. 2000. Archaeological Impact Assessment: Archaeological Scoping Survey for the purpose of an EMPR for the Sishen Iron Ore Mine. An unpublished report by the McGregor Museum.
- Beaumont, P.B. 2004. Heritage EIA of two areas at Sishen Iron Ore Mine. An unpublished report by the McGregor Museum.
- Morris, D. 2005. Report on a Phase 1 Archaeological Assessment of Proposed Mining Areas of the Farms Bruce, King, Mokaning and Parson, Between Postmasburg and Kathu, Northern Cape. An unpublished report by the McGregor Museum.
- Beaumont, P.B. 2006a. Phase 1 Heritage Impact Assessment Report on Erf 1439, Remainder of Erf 2974, Remainder of Portion 1 of the Farm Uitkoms 463, and Farms Kathu 465 and Sims 462 at and near Kathu in the Northern Cape Province. An unpublished report by the McGregor Museum.
- Beaumont, P.B. 2006b. Phase 1 Heritage Impact Assessment Report on Portions A and B of the Farm Sims 462, Kgalagadi District, Northern Cape Province. An unpublished report by the McGregor Museum.
- Beaumont, P.B., 2006c. Phase 1 Heritage Impact Assessment Report on Portion 48 and the remaining Portion of Portion 4 of the Farm Bestwood 459, Kgalagadi District, Northern Cape Province. An Archaeological Impact Assessment report by the Archaeology Department, McGregor Museum.
- Beaumont, P.B. 2007. Supplementary Archaeological Impact Assessment report on sites near or on the Farm Hartnolls 458, Kgalagadi District Municipality, Northern Cape Province.
- Beaumont, P.B. 2008a. Phase 1 Archaeological Impact Assessment Report on Portion 459/49 of the farm Bestwood 459 at Kathu, Kgalagadi District Municipality, Northern Cape Province.
- Beaumont, P.B. 2008b. Phase 1 Heritage Impact Assessment Report on a portion of the remainder of the farm Sekgame 461, Kathu, Gamagara Municipality, Northern Cape Province.
- Dreyer, C. 2007. First Phase Archaeological and Cultural Heritage Assessment of the Proposed Garona Mercury Transmission Power Line, Northern Cape, North-West Province & Free State. An unpublished report by Pr. Archaeologist/Heritage Specialist.
- Dreyer, C. 2008a. First Phase Archaeological and Cultural Heritage Assessment of the proposed residential developments at a portion of the remainder of the farm Bestwood 459 Rd, Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist.

- Dreyer, C. 2008b. First Phase Archaeological and Cultural Heritage Assessment of the proposed Bourke project, ballast site and crushing plant at Bruce Mine, Dingleton, near Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist.
- Kaplan, J.M. 2008. Phase 1 Archaeological Impact Assessment: proposed housing development, Erf 5168, Kathu, Northern Cape Province. An unpublished report by the Agency for Cultural Resources Management.
- Morris, D. 2008. Archaeological and Heritage Phase 1 Impact Assessment for proposed upgrading of Sishen Mine diesel depot storage capacity at Kathu, Northern Cape. An unpublished report by the McGregor Museum.
- Van der Ryst, MM & Kusel, SU. 2011. Specialist report on the Stone Age and other heritage resources at Kolomela, Postmasburg, Northern Cape.
- Kaplan, J. Heritage Impact Assessment proposed mixed use development in Kathu, Northern Cape Province. Remainder & Portion 1 of the Farm Sims 462, Kuruman RD. Prepared for: Enviroafrica.
- Morris, D. 2014. Rectification and/or regularisation of activities relating to the Bestwood township development near Kathu, Northern Cape: Phase 1 Archaeological Impact Assessment.
- Walker S.J.H., Chazan M., Lukich V. & Morris D. 2013. A second Phase 2 archaeological data recovery at the site of Kathu Townlands for Erf 5116: Kathu, Northern Cape Province.
- Walker, S.J., Chazan, M & Morris, D. 2013. Kathu Pan: location and significance. A report requested by SAHRA for the purpose of nomination.
- Webley, L & Halkett, D. 2010. Baseline archaeological survey of the farm Driehoekspan 435, between Olifantshoek and Postmasburg in the Northern Cape Province. UCT: Archaeology Contracts Office

#### **4.1.2 Remote Sensing**

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

#### **4.1.3 Map Data**

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

#### **4.1.4 Field Survey**

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the Margaux PRA Project area was conducted in May 2022. The process encompassed a random field survey in accordance with standard archaeological practice by which heritage resources are observed and documented. As the project area on the Farm Margaux is vast, particular focus was placed on GPS reference points identified during the aerial and mapping survey. Where possible, random spot checks were made and potentially sensitive heritage areas were investigated. Using a Garmin GPS, the survey was tracked and general surroundings were photographed with a Samsung Digital camera. Real time aerial orientation, by means of a mobile Google Earth application was also employed to investigate possible disturbed areas during the survey.

**It should be stressed that access to the farms Park 107 and Rudesheim 109 were not permitted at the time of this assessment and these properties were not surveyed.**

#### **4.1.5 General Public Liaison**

Consultation with the owner of the Farm Margaux assisted with the identification and contextualization of heritage sites in the project area.

### **4.2 Limitations**

#### **4.2.1 Access**

The study area is accessed from a farm road connecting to the N8 road. Access control is applied to the areas relevant to this assessment and permission for site access could not be obtained for the Farms Park 107 and Rudesheim 109 and these farms were not surveyed. No restrictions were encountered during the site visit of the farm Margaux 108.

#### **4.2.2 Survey Time and Site Extent**

The prospecting area across Margaux is vast and survey time proved to be a major constraint due to the large surface extent of the property. Therefore, foot and vehicular site surveys focused around areas tentatively identified as sensitive (i.e. along drainage lines and those noted during the aerial survey) during aerial surveys.

#### **4.2.3 Visibility**

The surrounding vegetation in the study area landscape is mostly comprised out of mountain vegetation, grasslands and scattered trees across most of the project area. Visibility proved to be a constraint in the pristine south the project areas. The general visibility at the time of the AIA survey (May 2022) ranged from high along the western portion, to low in overgrown areas to the northeast. In single cases during the survey sub-surface inspection was possible.





Figure 4-1: View of general surroundings in the project area on the farm Margaux.



Figure 4-2: View of recurring rocky ridges in the project area.



Figure 4-3: Panorama views of general surroundings in the project area, looking west and east.



Figure 4-4: View of a corrugated iron dam (left) and open grasslands (right) in the project area



Figure 4-5: View of general surroundings in the project area along open grassy plains.

#### 4.2.4 Summary: Limitations and Constraints

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

- Permission for site access could not be obtained for the Farms Park 107 and Rudesheim 109 and these farms were not included in the site survey.
- The general visibility at the time of the AIA survey (May 2022) ranged from high to moderate in overgrown areas. As such, visibility proved to be somewhat of a constraint during the site survey.
- Survey time proved to be a major constraint due to the large surface extent of the property. Therefore, foot and vehicular site surveys focused around areas tentatively identified as sensitive (i.e. along drainage lines and those noted during the aerial survey) during aerial surveys

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

## 5 ARCHAEO-HISTORICAL CONTEXT

### 5.1 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: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens sapiens</i> 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 <b>(commonly restricted to the interior and north-east coastal areas of Southern Africa)</b>	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD <b>(commonly restricted to the interior and north-east coastal areas of Southern Africa)</b>	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 <b>(commonly restricted to the interior and north-east coastal areas of Southern Africa)</b>	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.

### 5.2 Discussion: The Northern Cape Heritage Landscape

The history of the Northern Cape Province is reflected in a rich archaeological landscape, mostly dominated by Stone Age occurrences. Numerous 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, most of which are in the form of rock engravings are to be found in the larger landscape. These sites occur on hilltops, slopes, rock outcrops and occasionally in river beds. Sites dating to the Iron Age occur in the north eastern part of the Province but environmental factors delegated that the spread of Iron Age farming westwards from the 17th century was constrained mainly to the area

east of the Langeberg Mountains. However, evidence of an Iron Age presence as far as the Upington area in the eighteenth century occurs in this area. Moving into recent times, the archaeological record reflects the development of a rich colonial frontier, characterised by, amongst others, a complex industrial archaeological landscape such as mining developments at Postmasburg and Griekwastad, which herald the modern era in South African history. Finally, the Northern Cape Province saw a number of war conflicts, particularly the Anglo Boer War (or the South African War) left behind the remnants of battlefields, skirmishes and concentration camps.

### 5.2.1 Early History and the Stone Ages

According to archaeological research, the earliest ancestors of modern humans emerged some two to three million years ago. The remains of Australopithecine and *Homo habilis* have been found in dolomite caves and underground dwellings in the Riverton Area at places such as Sterkfontein and Swartkrans near Krugersdorp. *Homo habilis*, one of the Early Stone Age hominids, is associated with Oldowan artefacts, which include crude implements manufactured from large pebbles. The Acheulian industrial complex replaced the Oldowan industrial complex during the Early Stone Age. This phase of human existence was widely distributed across South Africa and is associated with *Homo erectus*, who manufactured hand axes and cleavers from as early as one and a half million years ago. Middle Stone Age sites dating from as early as two hundred thousand years ago have been found all over South Africa. Middle Stone Age hunter-gatherer bands also lived and hunted in the Orange and Vaal River valleys. These people, who probably looked like modern humans, occupied campsites near water but also used caves as dwellings. They manufactured a wide range of stone tools, including blades and points that may have had long wooden sticks as hafts and were used as spears.

The Northern Cape has traces of various types of archaeological sites inclusive of fossil, prehistoric and historical sites. Of palaeontological and Stone Age significance is a major fossil-bearing and archaeological complex of karstic deposits at Groot Kloof in the escarpment of the Ghaap Plateau, around 100 km southwest of Taung. The region is known for open fluvial and lacustrine sites sampling Lower and Middle Pleistocene tool types and the long, but discontinuous sequence of Wonderwerk Cave. Small pockets of Later Stone Age artefact-bearing breccia and rock art also occur. The significance of Groot Kloof is underscored by current debate about the emergence of modern humans in which the appearance of modern behaviour is posited to have occurred in this and other regions (Curnoe et al. 2005). The Stone Age archaeological wealth of the Northern Cape is unequalled by any of the other provinces in South Africa. Stone Age sites are not randomly scattered within the landscape and they occur either near water sources or close to local sources of two highly-prized raw materials, specularite and jaspilite. As such, tools dating to all phases of the Stone Age are mostly found in the vicinity of larger watercourses. Surveys around Postmasburg and Griekwastad have documented Acheulian industries and continuity between Earlier Stone Age (ESA) and Middle Stone Age (MSA) lithic technologies in the same area. Excavations at other well-known sites in the wider region attest to further ESA and MSA occupation, some of which have yielded significant Stone Age assemblages that all inform on our general understanding of the technological sequences of the Stone Age in the Northern Cape and the Northwest (e.g. see Beaumont 2008, 2009; Morris 2006; Morris 2007; Dreyer 2007). Within the greater Kimberley region ESA and MSA sites with long research histories include Doornlaagte, Pniel, Canteen Koppie and Rooidam (Beaumont & Morris 1990). Open air ESA and MSA sites are often associated with raw material outcrops, dolines, playas (palaeo-lakes) and palaeo-river channels. In addition low density ESA, MSA and Later Stone Age (LSA) occurrences remain regular phenomena characterizing the cultural landscape of the region. LSA use of the more immediate region is most prominently evidenced by the Wildebeest Kuil Rock Art Center and adjoining Rock Art site (see later reference). Here, a number of lithic artefacts with spatial distribution indicative of separate residential and knapping areas occur around the hill. The landscape around the town of Postmasburg and Griekwastad is rich in archaeological material dating to Earlier and Middle Stone Ages. These are subject to on-going archaeological research Sites such as Wonderwerk Cave, Historical Kimberley Mine and Kathu Townlands

have yielded significant Stone Age assemblages that all inform on our general understanding of the technological sequences of the Stone Age in the Northern Cape (e.g. see Beaumont 2008, 2009; Morris 2006; Morris 2007; Dreyer 2007). In addition, a large amount of Middle and Later Stone Age sites have been documented across the landscape on calcrete lined pans and road cuttings.

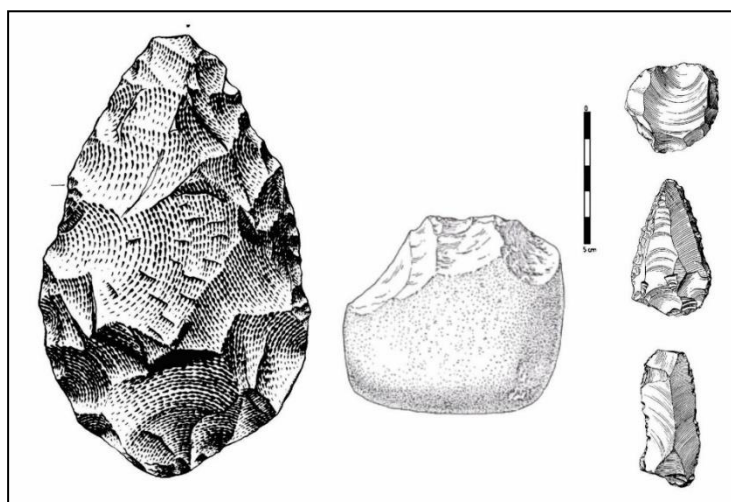


Figure 5-1: Typical ESA handaxe (left) and cleaver (center). To the right is a MSA scraper (right, top), point (right, middle) and blade (right, bottom).

More specifically, most of the studies conducted in this landscape located surface scatters of Stone Age artefacts of limited significance (e.g. Dreyer 2008a, 2008b; Kaplan 2008) if not actual Stone Age sites. Many studies referred to the Kathu Pan site, an ancient limestone sinkhole formation as well as the Uitkoms 1 site on Kathu Hill with its high number of Stone Age artefacts (e.g. SAHRIS case number 4785). A survey for the expansion of the Sishen Mine immediately to the south of the current study area Beaumont (2000) recorded surface LSA lithics which he stated were not associated with living sites. This study also listed a large number of Stone Age artefacts as well as two Iron Age collections from the near vicinity of the study area and accessioned in the McGregor Museum. Partially overlapping and to the south of the study area Beaumont (2004) recorded only surface scatters of possible Acheulian lithics while later studies in approximately the same area located no heritage resources (Beaumont 2005a, 2005b) or, again, a few scattered stone tools of MSA appearance (Morris 2008). Morris (2001) undertook a survey near Postmasburg locating surface scatters of stone artefacts, but noting that the area between Postmasburg and Kathu is known for specularite workings and that any development should take cognisance of this.

It is important to note a concern raised by Morris (2014: unpagged) that a “consistent issue in the assessment of the presence or absence of archaeological deposits in and around Kathu ... is the fact that the landscape is often capped by (1) calcrete (not uniformly ancient – Walker et al 2013) and (2) younger Gordonian Aeolian sands (Almond 2014)”. That subsurface archaeological remains may occur under overlying soils and calcretes should be taken into account when archaeological and heritage surveys are undertaken.

### 5.2.2 The Later Stone Age (LSA) and Rock Art

The Late Stone Age commenced twenty thousand years ago or somewhat earlier. The various types of Later Stone Age industries scattered across the country are associated with the historical San and Khoi-Khoi people. The San were renowned as formidable hunter-gatherers, while the Khoi-Khoi herded cattle and small stock during the last two thousand years. Late Stone Age people manufactured tools that were small but highly effective, such as arrow heads and knives. Later Stone Age (LSA) sites occur both at the coast and inland as caves deposits, rock shelters, open sites and shell deposits. Rock engravings are mostly situated in the semi-arid plateau with most of these engravings situated at the Orange – Vaal basin, Karoo and Namibia. The upper Vaal, Limpopo basin and eastern Free State regions have a small quantity of rock engravings as well.

Generally, rock paintings exist at cave areas and rock engravings at open surface areas. The Cape interior consists of a technical, formal and thematic variation between and within sites (Morris 1988). Two major techniques existed namely the incised and pecked engravings. Morris (1988) indicated technical and formal characteristics through space and a sharp contrast exists between engravings positioned north of the Orange River that are mostly pecked and those in the Karoo where scraping was mostly used. According to Morris (1988) hairline engravings occur at the North and the South, but they are rare at the Vryburg region. Finger painting techniques mostly occur at the Kuruman Hills, Asbestos Mountains, Ghaap Escarpment, Langeberg, Koranaberg ranges, scattered sites at the Karoo and the Kareeberge (Morris 1988). The development petroglyphs (i.e. carving or line drawing on rock) were associated with three different types of techniques, namely incised fine lines, pecked engravings and scraped engravings. According to Peter Beaumont the pecked and scraped engravings at the Upper Karoo are coeval (i.e. having the same age or date of origin) (Beaumont P B et al. 1989). Dating of rock art includes the use of carbonate fraction dating of ostrich eggshell pieces, dating of charcoal and ostrich eggshell at various rock art shelters. Unifacial points, double segments and thin – walled sherds may indicate the presence of the Khoikhoi at the Northern Cape during 2500 BP (years Before the Present) (Beaumont 1989). According to Beaumont (2000) pecked engravings, originally from the farms Sishen 543 and Bruce 544, were donated to the McGregor Museum with some engravings located on the grounds of the Sishen Iron Ore Mine as well. More engraving sites are known from further afield including one on the farm Palingpan. It is also worth noting that two rock shelters on the northern and southern faces of GaMohaana (Gamohana), situated in the Kuruman Hills north-west of the town, contain Later Stone Age remains and rock paintings.

### **5.2.3 Prehistoric Mining and Metallurgy**

Surface occurrence of specularite (i.e. a variety of hematite) and prehistoric specularite workings are known to occur in the Northern Cape. One of these historic mines occurs at Doornfontein near Postmasburg, which dates to 1200 BP (Thackeray 1983). Specularite used to be transported in ostrich eggshells and pottery containers (Thackeray 1983). Various oral accounts indicate that Skeyfontein was visited by Khoi Herding people, Iron Age Tswana and San hunter – gatherers. More recently, asbestos mines were operated north-west of Kuruman on the farms Riries and Mt Vera during the 20<sup>th</sup> century. The archaeological excavations undertaken by Beaumont and Bashier (1974) and Thackeray et al (1983) have revealed that the mining of specularite at Doornfontein and Tsantsabane/Blinkklipkop commenced during this time. Blinkklipkop for example is located 66.7km south of the study area. During this initial period the mining activities would have been undertaken by San hunter-gatherers and Kora pastoralists. Only after the 17th century were such mining activities likely also undertaken by the Iron Age Tswana groups.

### **5.2.4 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. Stone ruins indicate the occurrence of Iron Age settlements in the Northern Cape specifically at sites such as Dithakong where evidence exists that the Thlaping used to be settled in the Kuruman – Dithakong areas prior to 1800 (Humphreys 1976). Here, the assessment of the contact between the Stone Age, Iron Age and Colonial societies are significant in order to understand situations of contact and assimilation between societies. As an example, Trade occurred between local Thlaping Tswana people and the Khoikhoi communities. It means that the Tswana traded as far south as the Orange River at least the same time as the Europeans at the Cape (Humphreys 1976). The Thlaping and Thlaro moved southward into the area presently known as the Northern Cape. A century later they were settled in areas as far south as Majeng (Langeberg), Tsantsabane (Postmasburg) and Tlhaka le Tlou (Daniëlskuil) (Snyman, 1986). In terms of the

Thlaro specifically, Breutz (1963) states that after they broke away from the Hurutshe during the period between 1580 and 1610, they travelled along the Molopo River and the Southern Kalahari before arriving at the confluence of the Kudumane, Mosaweng and Molopo. From here they established themselves at Tsowe (west of Morokweng), Gatlhose (10.9km south-east of the study area), Majeng (Langberg), Khoise (Khuis on the Molopo River) and Tlhaka-la-Tlou (present day Danielskuil situated roughly 72km south-east of the study area). It is evident that the study area and surrounding landscape would be central within the overall settlement area of the two Tswana groups at the time. During this time the Kora moved into the area. Due to their superior firearms they applied increasing pressure on the Thlaping and Thlaro groups. In the end the Thlaping moved into a north eastern direction to settle in the general vicinity of Dithakong, north-east of present-day Kuruman. The Thlaro settled in areas to the west and north-west of the Thlaping (Snyman, 1986). The settlement of the Thlaping in the vicinity of Kuruman occurred during the reign of Molehabangwe. This period in the history of the Thlaping was seen as a period of wealth and power, and at the time they even had control of the *sibello* quarry near Blinkklip (Legassick, 2010). Important farmer period Iron Age remnants occur at the major Tswana town and pre-colonial stone-walled settlements of Dithakong. Local BaThlaping communities claimed not to have known who had made or lived in this earlier town but archaeological investigations have established Tswana affinities in the earlier settlement which includes features indicative of frontier complexity at this south-western edge of Tswana expansion. Early traveller accounts refer to an impressively large town consisting of mud houses, traces of which have yet to be located archaeologically.

#### 5.2.5 Later History

Between the period of 1786 – 1795 a German deserter by the name of Jan Bloem established himself at Tsantsabane (Blinkklip) (Legassick, 2010). This place is located 5km north-east of the present-day town of Postmasburg. The settlement of Jan Bloem at the specularite mine may have been a way in which to control the valuable site and any trading activities associated with it. The first known visit to this area by European explorers (i.e. excluding European renegades and fugitives such as Jan Bloem) took place in 1801. The journey was undertaken by P.J. Truter and Dr. W. Somerville. They crossed over the Orange River in the vicinity of Prieska, and passed Blinkklip on their way to present-day Kuruman (Bergh, 1999). Although their exact route is not known, it is possible that their journey from present-day Postmasburg to Kuruman would have passed some distance to the east of the present study area. William Anderson and Cornelius Kramer, both of the London Missionary Society, established a mission station at a place called Leeuwenkuil between 1802 to 1813. The focus of their work was a group known as the Bastards. This group could be described as a cultural conglomeration descending not only from relationships between different cultures and races (i.e. European and Khoi), but also comprised remnants of Khoi and San groups as well as freed slaves. The particular group later became known as the Griqua. Due to the problems caused by the presence of lions at Leeuwenkuil, the mission station was moved in 1805 to Klaarwater. On 7 August 1813 the name of the settlement which had sprung up here was renamed Griquatown. This came about as a result of a number of proposals made by Reverend John Campbell, the Director of the London Missionary Society who was visiting the mission stations from this area at the time. He suggested that “...*the Bastards change their name to ‘Griqua’ and that Klaarwater became Griquatown. This was because ‘on consulting among themselves they found a majority were descended from a person of the name Griqua’...*” (Legassick, 2010). Griquatown is located 129km south of the present study area. Later, the German explorer Martin Hinrich Carl Lichtenstein travelled through the general vicinity of the study area. After crossing the Orange River in the vicinity of present-day Prieska, Lichtenstein’s party visited present-day Danielskuil, and by June 1805 they were at Blinkklip (Postmasburg), a well-known source for obtaining specular haematite. Archaeological investigations at Blinkklipkop (also known as Nauga) established a date of AD 800 for the utilization of this particular rich source (Thackeray, et al 1983). From here they travelled further north and reached the Kuruman River where they met Tswana-speaking people. They followed the river downstream for three days, after which they followed a tributary to reach Lattakoe. From here they turned south and reached the Orange River on 11 July 1805. While on his way to the Kuruman River (and to the south thereof), Lichtenstein visited a small settlement consisting of

*"...about thirty flat spherical huts."* Although the people staying here were herdsmen who looked after the cattle of richer people living on the Kuruman River, they indicated that San (Bushmen) were also present in the area (Lichtenstein, 1930). Although Lichtenstein was certainly not the first European explorer to travel through this area (the Truter & Somerville expedition had for example passed through this area in 1801), or for that matter the last (Burchell travelled through the area in 1811 followed by John Campbell in 1813) (Bergh, 1999), Lichtenstein did leave behind a written record of this journey providing a valuable glimpse into the early history of the general surroundings of the study area. What is also significant about the visit of Lichtenstein is that his journey took him from present-day Postmasburg to a place known as Tsenin which is located north-west of Kuruman. As a result he would have passed in close proximity to the present study area.

During 1813 John Campbell of the London Missionary Society also visited the general vicinity of the study area. He arrived at Klaarwater on 9 June 1813, where he rested for a few days before continuing in a northern direction toward present-day Kuruman, passing through Blinkklip on the way (Bergh, 1999). Robert Moffat of the London Missionary Society established the mission station at Kuruman in 1824 (Erasmus, 2004). In 1885, the area between the Molopo River and the northern boundary of Griqualand West was proclaimed as the Crown Colony of British Bechuanaland by Sir Charles Warren proclaims. Its western boundary was defined by the Molopo River and its eastern extremity reached as far as Mafeking. The proclamation followed on a military operation under Warren's command to occupy the Boer Republics of Stellaland and Goosen. As a result the Crown Colony of British Bechuanaland included the lands of the two republics as well as the land of various Tswana groups. At the time the study area was located near the southern boundary of this newly proclaimed territory. A number of so-called "native reserves" were established in this area in 1886 as a result of the work of a commission appointed by the British rulers of the Crown Colony of British Bechuanaland. These included Deben (19.1km north-west of the study area), Gatlhose (11.5km east of the study area), Maremane (27.9km south-east of the study area), Langberg (directly south-west of the farm Sekgame) as well as Kathu (directly west of the farm Sekgame) (Snyman, 1986). The establishment of so many "native reserves" in close proximity to the study area clearly support the suggestion made earlier that the study area was centrally located in the historic and prehistoric territories of Tswana groups such as the Thlaro and Thlaping. In the same year a trader by the name of John Ryan established a shop on the farm Bishop's Wood. This farm is located 12.1km west of the study area.

Areas south of Kathu and Kuruman played a strategic role during the Anglo-Boer and towns such as Postmasburg, situated about 100km south of Kuruman, acted as an important link between the Boer forces from Transvaal to the Cape Colony south of the Orange River, providing ammunition and horses (Snyman 1985). The oral and written history of the Northern 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 commenced when pioneers (in most cases, missionaries) arrived between the nineteenth century and early twentieth century, depending on the region. Later, larger populations established villages in the area, some of which are often still occupied today. During the 1930's some of the Tswana communities consisted of a wealth of cattle that could be used to gain capital and purchase additional land. The Khoisan and Khoikhoi communities were not so lucky, because they were mostly used as labourers at various Tswana and European households (Wylie 1989).

The area known as Griqualand West was first 'roughly' surveyed by F. Orpen and W. Stow in 1872. During the Webley et al. (2010) survey of 20 farms to the west of Macarthy it was discovered that they were all surveyed and beacons between the years 1904 – 1911. This is very late when compared to the rest of the country. Many of the farm buildings are made of calcrete blocks and a fair percentage of farms have family graveyard.



In 1907 a number of trekboers from the southern Free State arrived in the general vicinity of the present study area (Erasmus, 2004) and the so-called "Native Locations" of Skeyfontein and Groenwater were established by Proclamation 131 of 1913 (Breutz, 1963). The town of Dibeng was laid out in 1914 on the banks of the Ga-Mogara River. This followed on the establishment of the Dibeng Dutch Reformed Church parish in 1909 (Erasmus, 2004). In 1927, the Gamagara Manganese Corporation Ltd and Central Manganese Ltd obtained options on farms in the vicinity of Lomoteng and Sishen (Snyman, 1988). An extension of the railway line from Koopmansfontein to Postmasburg was officially opened by the Minister of Railways, C.W. Malan in 1930. This meant that Postmasburg was now one of the few towns in the Northern Cape which boasted a direct rail link. While the extension of the railway line to Beeshoek was built by the Manganese Corporation further extensions to Lohatla and Manganore (1936), Sishen (1953) and Hotazel (1961) were undertaken by the South African Railways (Snyman, 1983). During 1930 an Englishman by the name of Pringle-Smith was appointed by S.A. Manganese to devise and execute a "...*thorough prospecting programme of S.A. Manganese's properties...*" (S.A. Manganese, 1977:46). This meant that the prospecting work undertaken in 1927 and which had been halted due to the poor financial climate and the lack of a railway link could now be proceeded with. Within a relatively short space of time Pringle-Smith started opening up the beds on the farms Kapstewel and Doornput. However, the company did not have the market which for example the Manganese Corporation possessed at the time, and as a result the ore was stockpiled at these two farms. Pringle-Smith left the Postmasburg area in 1932 after the financial implications of the Great Depression worsened the situation for S.A. Manganese to such an extent that he was asked to agree to a much lower salary (S.A. Manganese, 1977). Due to the financial impacts of the Great Depression, a number of smaller manganese mining companies were closed down in the early 1930s. A period of amalgamation followed which resulted in the South African Manganese Limited as well as the Associated Manganese Miners of South Africa Limited becoming the leaders in the manganese mining industry (Snyman, 1983).

A geological assessment of the minerals and ore deposits of the Postmasburg District was undertaken by the South African Geological Survey between 1932 and 1937. One member of the geological team was Dr Leslie Gray Boardman. His responsibility was to work on manganese and haematite deposits in the district. Apart from the manganese deposits near Postmasburg, Dr Boardman also identified large deposits of iron ore deposits on farms along the northern end of their area of study including Sishen, Bruce and King (S.A. Manganese, 1977). These three farms are located 3.4km, 3.5km and 12.9km south of the present study area. After the willingness of the South African Railways Administration to extend the railway line from Postmasburg to Kapstewel and Lohatla became known, the entire manganese industry north of Postmasburg changed for the better. An example of this was that S.A. Manganese stepped up operations on the farm Kapstewel. The work here was overseen by Captain T.L.H. Shone (S.A. Manganese, 1977). The promise of railway extensions to this area also resulted in other mining activities such as the establishment of a mining company by the name of Gloucester Manganese. This company was established to mine the manganese deposits on the farm Gloucester. Shortly thereafter an amalgamation took place between Gloucester Manganese and the Manganese Corporation which resulted in the formation of the Associated Manganese Mines of South Africa Limited (Ammosal). Ammosal re-erected the old ore handling plant from Beeshoek on the farm Gloucester and the operations here represented a large portion of the total manganese production of 250,000 tons (S.A. Manganese, 1977).

During the late 1940s the decision was made by two of the bigger role players in the manganese mining industry around Postmasburg for the mining of haematite iron ore to commence in earnest. S.A. Manganese in conjunction with the African Metals Corporation (Amcor) established a new company known as Manganore Iron Mining Ltd. to work on the iron ore deposits owned by them. These deposits were *inter alia* located on the farms Klipfontein, Kapstewel and Doornput (S.A. Manganese, 1977). All three these farms are located roughly 45km south of Sishen. At around 1950, Dr. L.G. Boardman was assessing the ore reserves at

Manganore and Lohathla as well as the farm Lilyveld for S.A. Manganese. He found that the latter farm contained large quantities of haematite iron ore and persuaded the directors of S.A. Manganese to acquire the farm (S.A. Manganese, 1977). In 1953 Iscor commenced iron production at Sishen (Snyman, 1983). In the same year the railway line from Postmasburg to Sishen was extended to haul ore to Iscor's plants in Pretoria, Vanderbijlpark and Newcastle (Erasmus, 2004). In 1973 a second mine was opened at Sishen to supply export iron ore to Saldanha Bay. During the same year the town of Kathu was established to accommodate employees for the new mine (Erasmus, 2004). The 860km long Sishen-Saldanha railway line was completed in 1977 and the town of Kathu received municipal status in 1980 (Erasmus, 2004). The Northern Cape was subjected to a resettlement program during the apartheid years. Tswana families were divided into the men who had to live in a compound and the women who were sent to a relocation centre (Hallett 1984). Between 1960 and 1962 it was estimated that an average of 834,000 people were affected by the Group Areas Act (Hallett 1984).

### 5.2.6 The Anglo-Boer War

The Anglo-Boer War saw Kimberley besieged by the *Boers* on the 14th of October 1899, with British forces suffering heavy losses. The Boers moved quickly to try to capture the British enclave when war broke out between the British and the two Boer republics in October 1899. The town was ill-prepared but the defenders organised an energetic and effective improvised defense that was able to prevent it from being taken. Cecil John Rhodes, who had made his fortune in the town, and who controlled all the mining activities, moved into the town at the onset of the siege. His presence was controversial, as his involvement in the Jameson Raid made him one of the primary protagonists behind war breaking out. Rhodes was constantly at loggerheads with the military, but he was nonetheless instrumental in organising the defense of the town. The Boers shelled the town with their superior artillery in an attempt to force the garrison to capitulate. Engineers of the De Beers company manufactured a one-off gun named Long Cecil, however the Boers soon countered with a much larger siege gun that terrified the residents, forcing many to take shelter in the Kimberley Mine. The British military had to change its strategy for the war as public opinion demanded that the sieges of Kimberley, Ladysmith and Mafeking be relieved before the Boer capitals were assaulted. The first attempt at relief of Kimberley under Lord Methuen was stopped at the battles of Modder River and Magersfontein. The 124-day siege was finally relieved on 15 February 1900 by a cavalry division under Lieutenant-General John French, part of a larger force under Lord Roberts. The battle against the Boer general Piet Cronjé continued at Paardeberg immediately after the town itself was relieved.

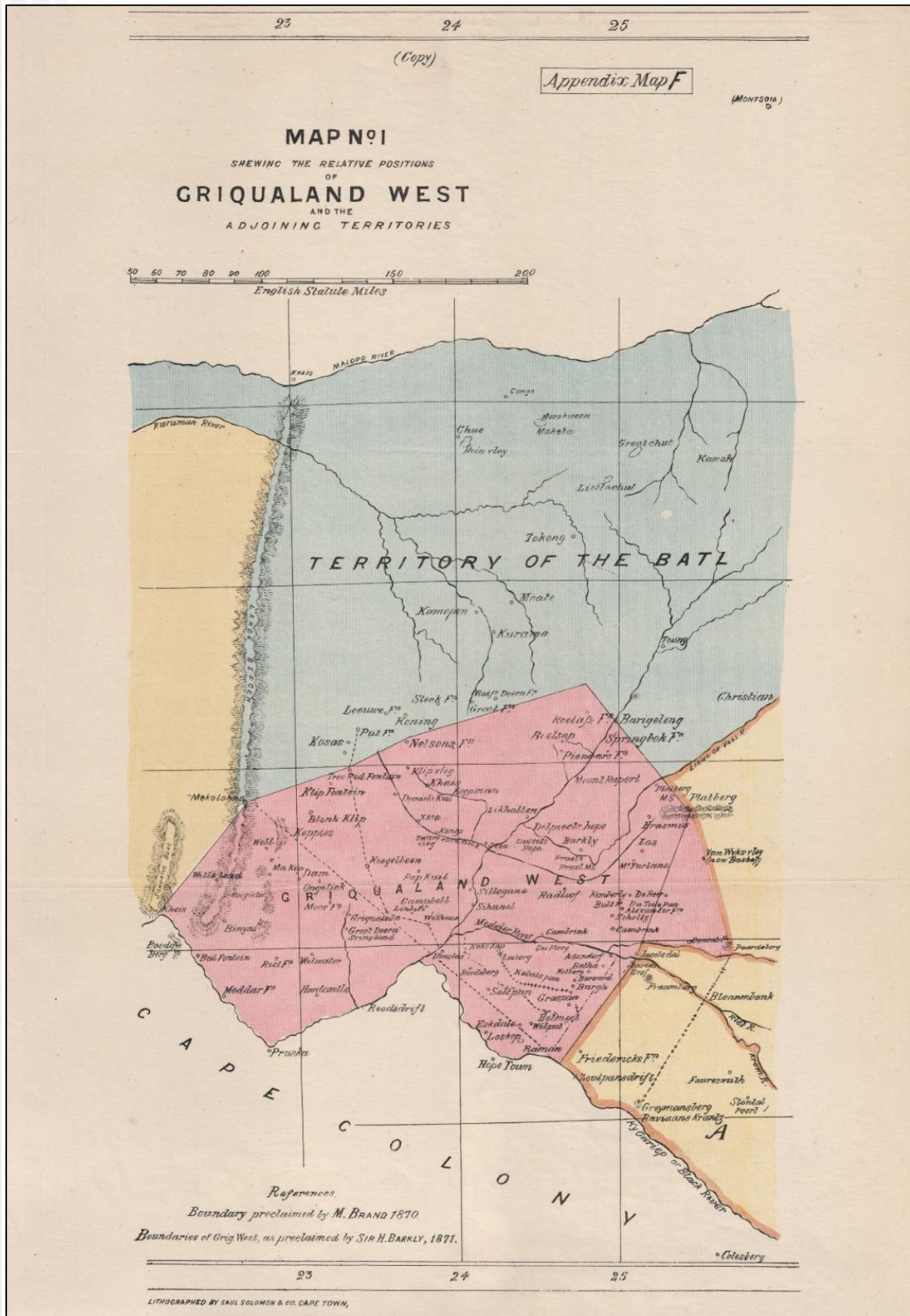


Figure 5-2: Map no. 1 shewing the relative positions of Griqualand West and the adjoining territories.

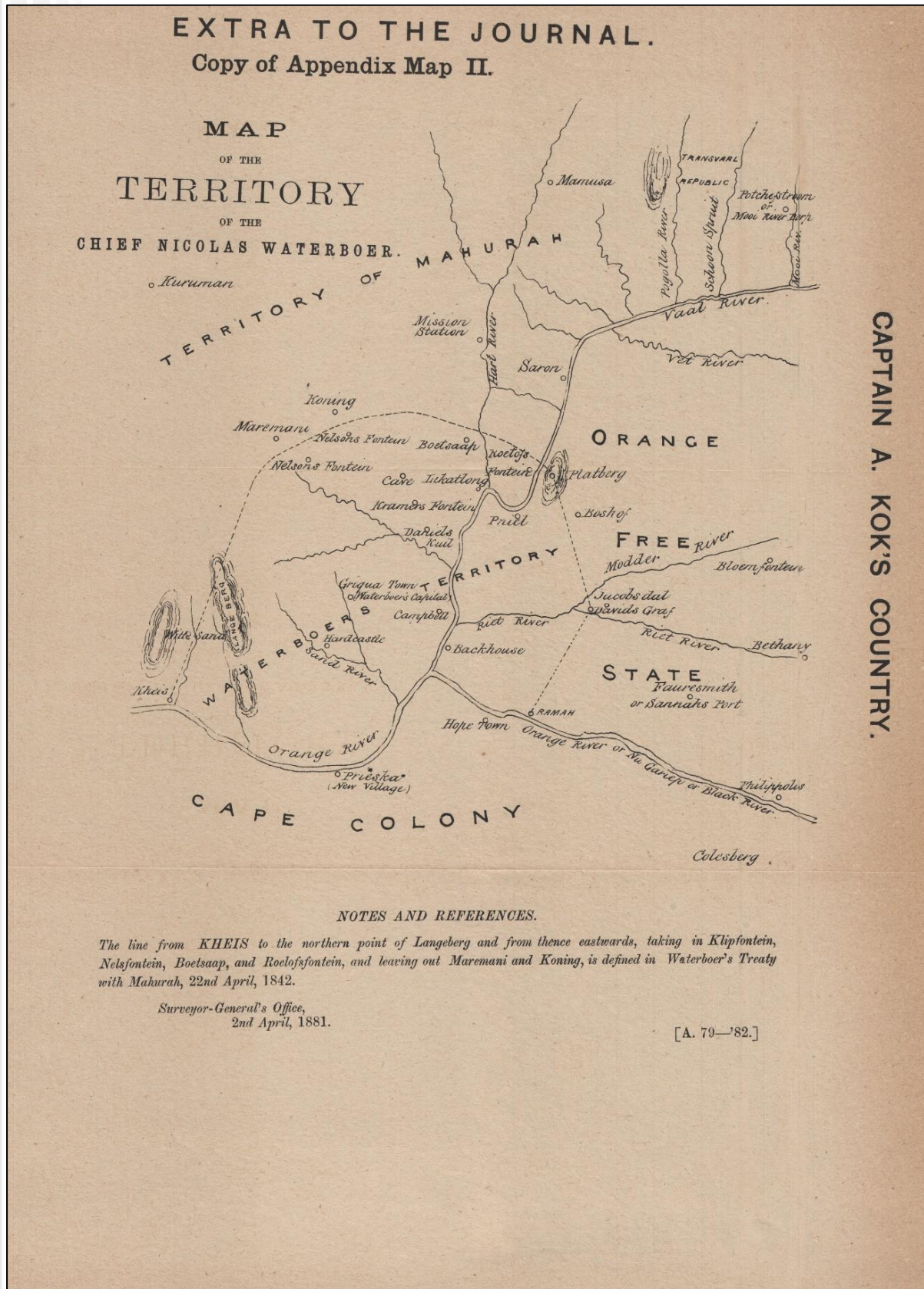


Figure 5-3: Map of the Territory of the Chief Nicolas Waterboer Cape of Good Hope (Colony). Surveyor-General's Office 1881.

## 6 RESULTS: ARCHAEOLOGICAL SURVEY

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### 6.1 The Off-Site Desktop Survey

A number of archaeological and historical studies have been conducted in the Postmasburg and Griekwastad area. These studies all infer a rich and diverse archaeological landscape around the town and the Northern Cape Province, which encompasses a significant heritage legacy. Here, the abundance of locally available raw material implies a prominent Stone Age presence and specifically Earlier Stone Age (ESA) and Middle Stone Age (MSA) artefacts occur widely in the area. Moving into recent times, the archaeological record reflects the development of a colonial frontier, characterised by, amongst others, farming and an industrial archaeological landscape such as mining developments at Postmasburg and Griekwastad.

An analysis of historical aerial imagery and archive maps of the project area subject to this assessment suggests a landscape which has been sparsely populated in historical times but the area was subjected to farming development and rural settlement in the 20<sup>th</sup> century.

The analysis reveals the following (see Figure 6-23 to Figure 6-27):

- The farms Margaux, Park and Rudesheim are indicated on early maps of the Postmasburg and Griekwastad area (, 1899, 1902).
- A historical "Map of portion of Hay" indicating geological units compiled by the University of Cape Town Libraries in 1905 indicated that the project area falls within the so-called "Griquatown Beds" or the "Blink Klip Breccias".
- Farmsteads are indicated on Margaux and Rudesheim on topographical maps (1944 and 1982) of the landscape. The Margaux farmstead is indicated as "Margo". In addition, small cultivated fields and single earth dams are indicated on these maps on the farms.
- Mountains and hills on the farms are indicated on these maps with unique names such as "Kranskop", "Byneskop", "Middelkop", "Piet se Plaat", "Langrant", "Tafelkop" and "Syferplaat".
- The Margaux and Rudesheim farmsteads as well as earth dams are legible on aerial imagery dating to 1970.

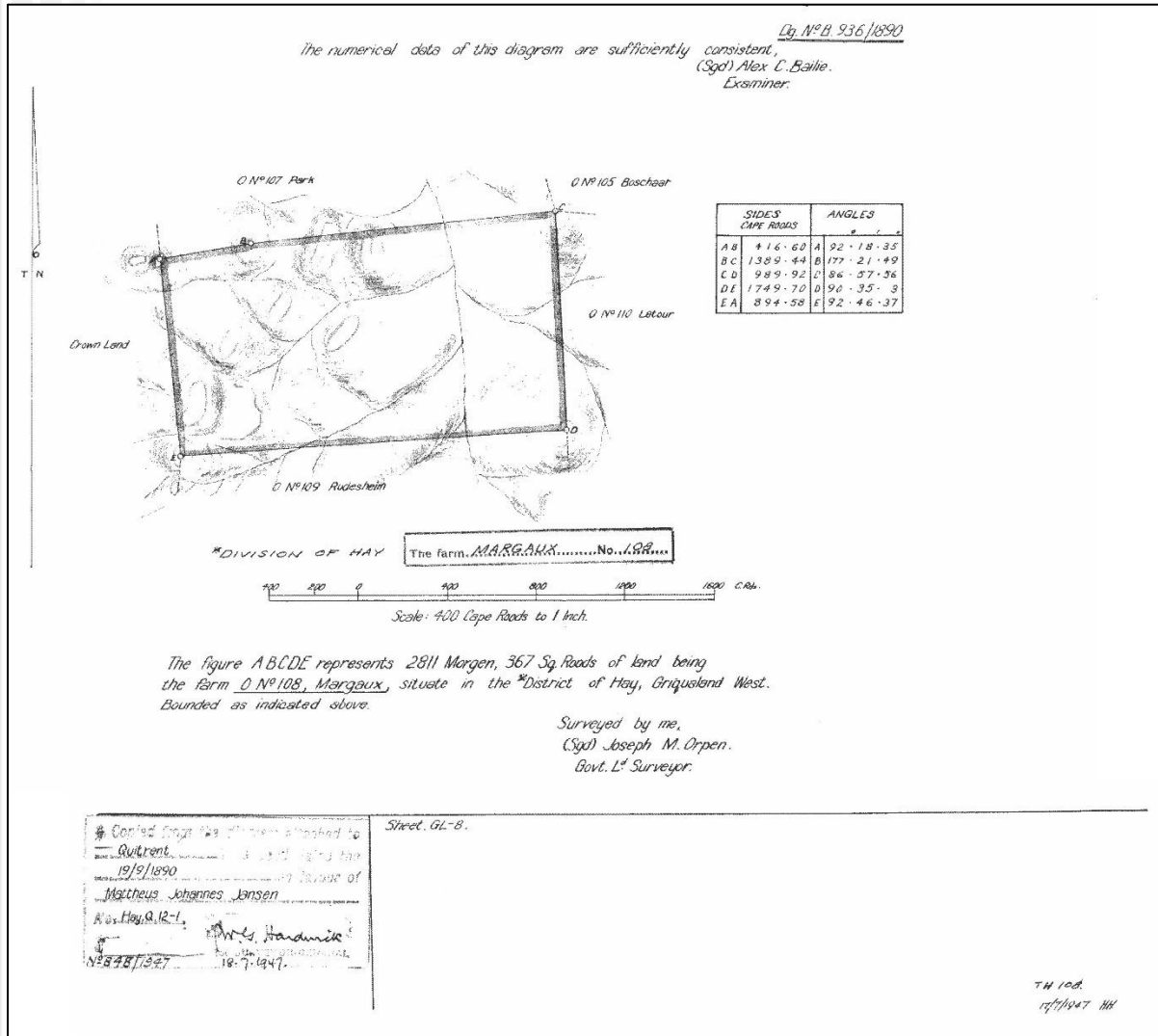
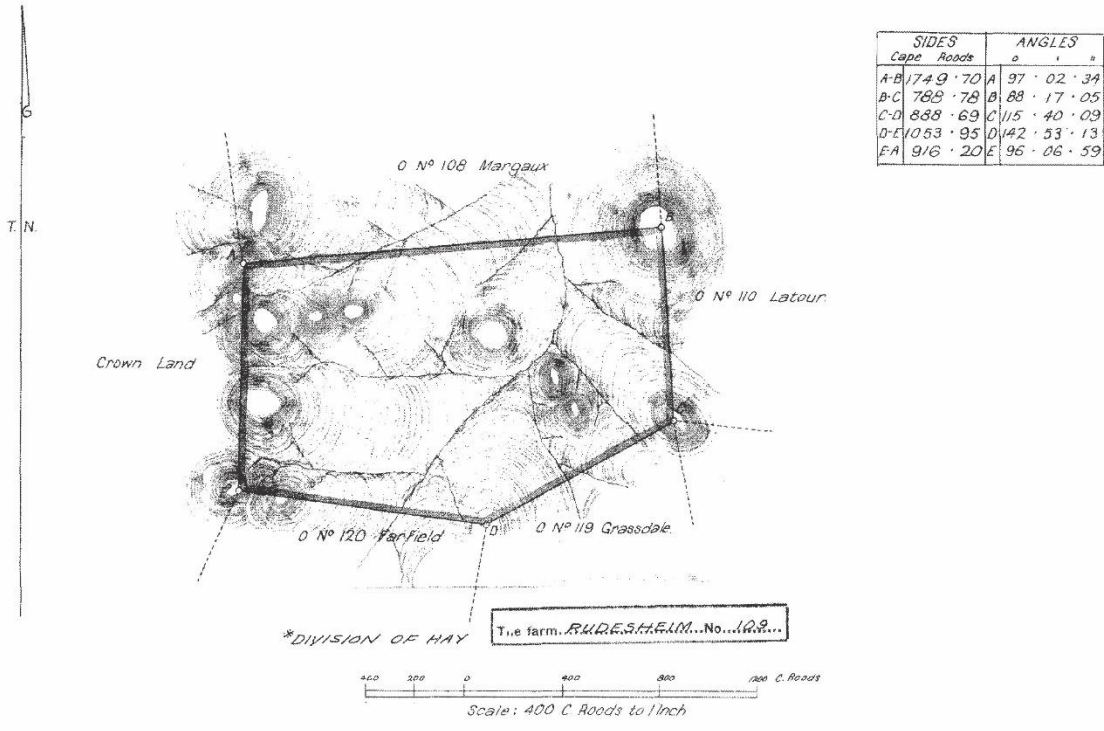


Figure 6-1: Title deed for the farm Margaux 108 c.1890.

The numerical data of this diagram are sufficiently consistent. Dg. N° B.937/1890  
 (Sgd) Alex C. Bailie.  
 Examiner



The figure A.B.C.D.E. represents 3002 Morgen, 177 Sq. Roods of land, being the farm O N° 109, Rudesheim, situate in the District of Hay, Griqualand West. Bounded as indicated above.

Surveyed by me  
 (Sgd) Joseph M Orpen  
 Government Surveyor

Copied from the diagram attached to Quitrent Title Deed dated the 19/9/1890 in favour of Roelof Andries Jensen No. Hay. 9.12.2 (Mrs. Hardwick) No 848-1947 18.7.1947.	Sheet-GL. 8 Sheet-FL. 2
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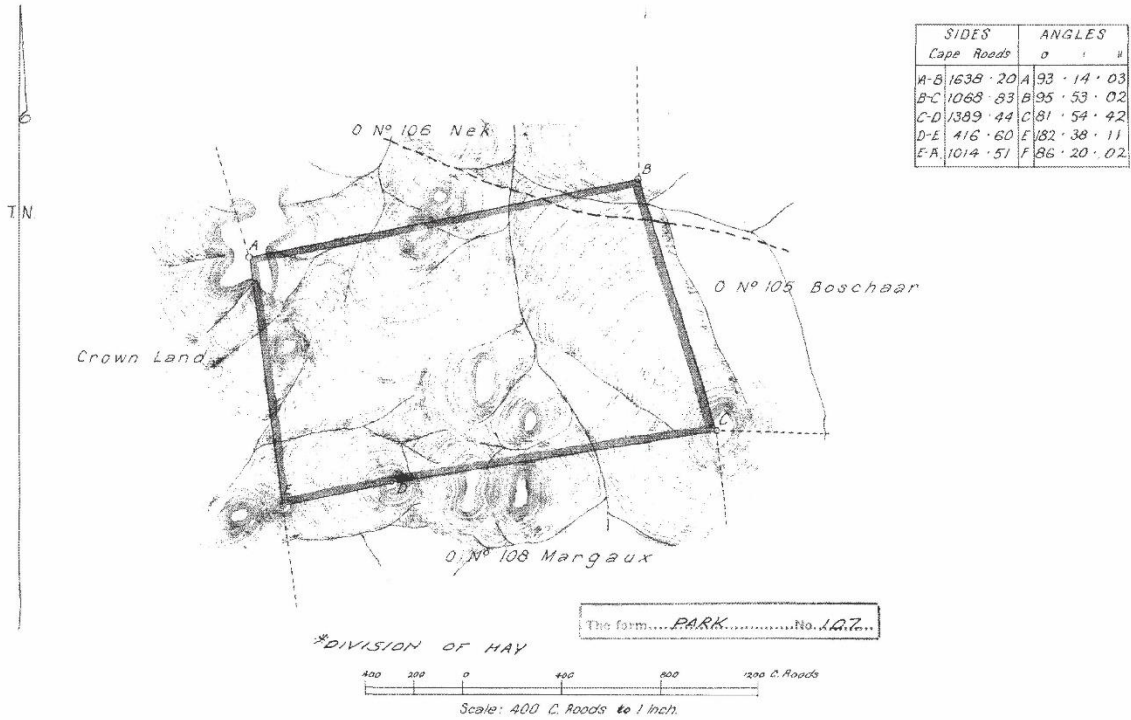
R.B.

TH 109

Figure 6-2: Title deed for the farm Rudesheim 109 c. 1890.

The numerical data of this diagram are sufficiently consistent  
 (Sgd) Alex C. Baillie  
 Examiner.

F Dg. N° B. 933/1890.



The figure ABCDE represents 2955 Morgen 132 Sq. Roads of land, being the farm O N° 107, Park, situate in the District of Hay, Grigoland West. Bounded as indicated above.

Surveyed by me  
 (Sgd) Joseph M. Orpen

Copied from the original attached to  
 Quitrent Title Deed dated the  
 29/5/1890 in favour of  
 Sarel Karolus Johannes Venter.  
 No. 111/22  
 Mr. Harauick  
 17-1947  
 N° 2859/1947

Sheet-G.L.8

A 18.

Figure 6-3: Title deed for the farm Park 107 c. 1890.



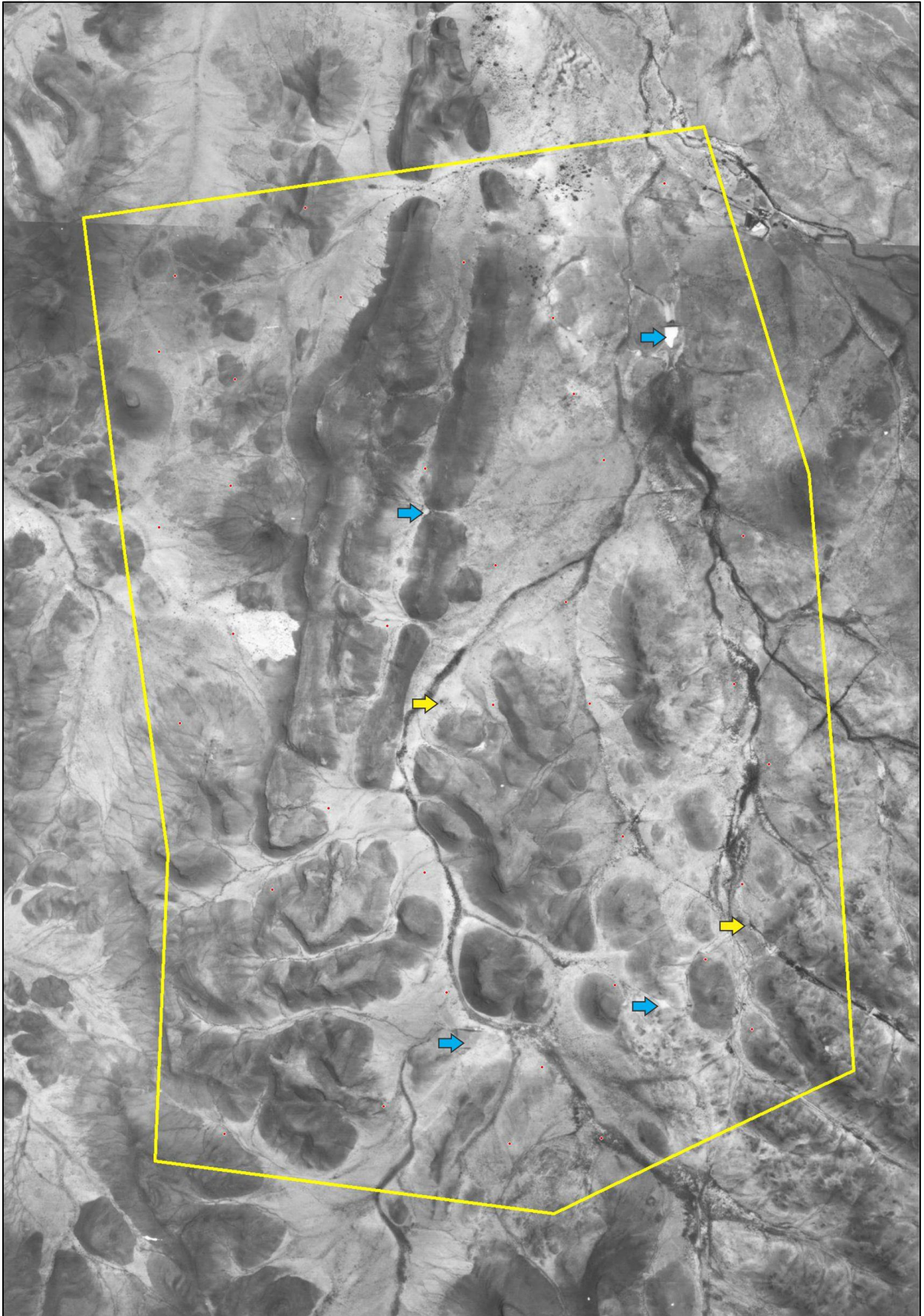


Figure 6-4: Historical aerial image of the project area (yellow outline) dating to 1970. Note the presence of farmsteads (yellow arrows) and water sources and dams (blue arrows).

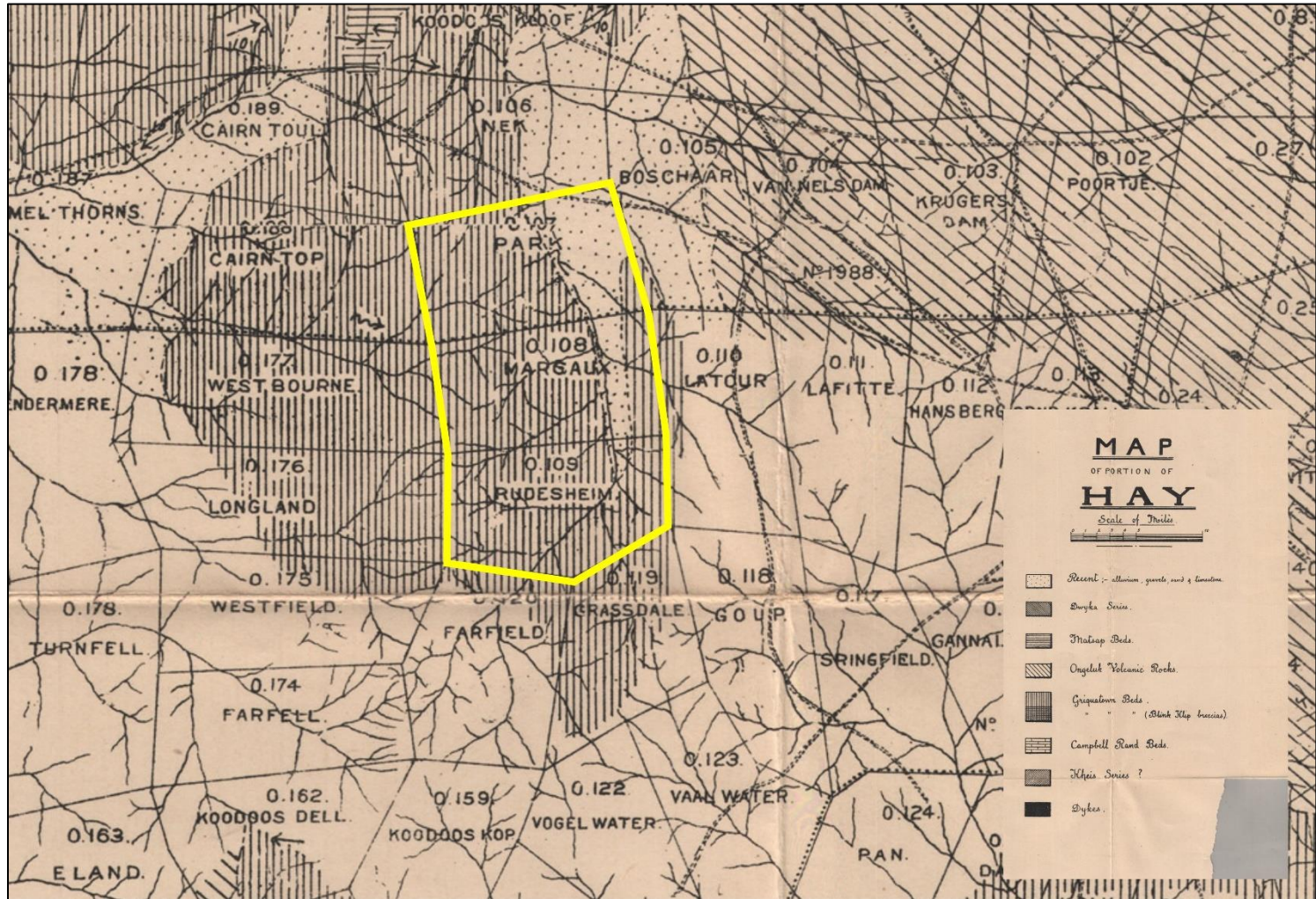


Figure 6-5: A historical “Map of portion of Hay” compiled by the University of Cape Town Libraries in 1905. Note that the project area indicated with the yellow block falls within the so-called “Griquatown Beds” or the “Blink Klip Breccias”.

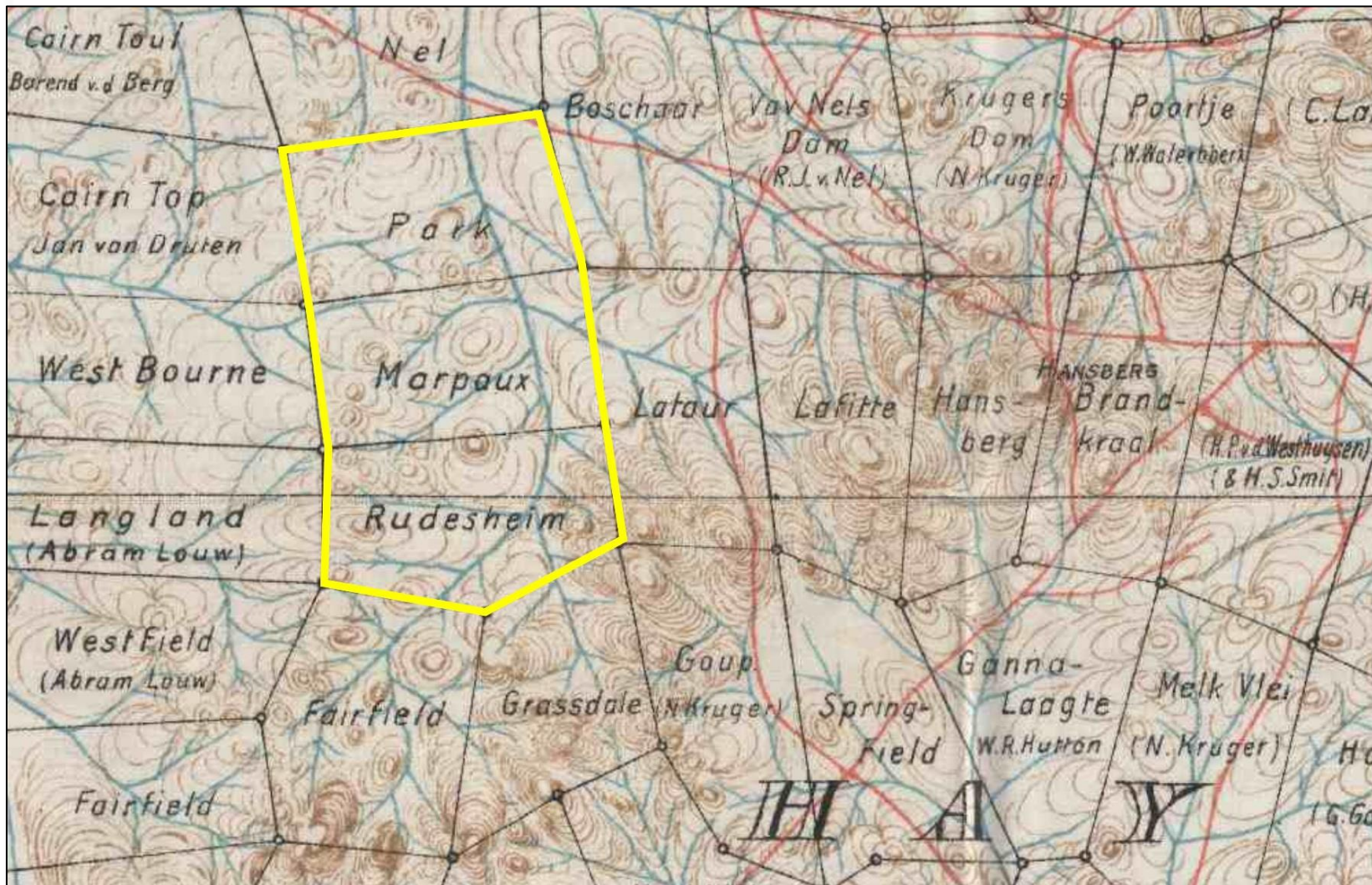


Figure 6-6: Historical map of the Postmasburg and Griekwastad Region (South Africa - Great Britain Army, 1902) indicating the presence of the Farms Park 107, Margaux 108 and Rudesheim 109 at the time.

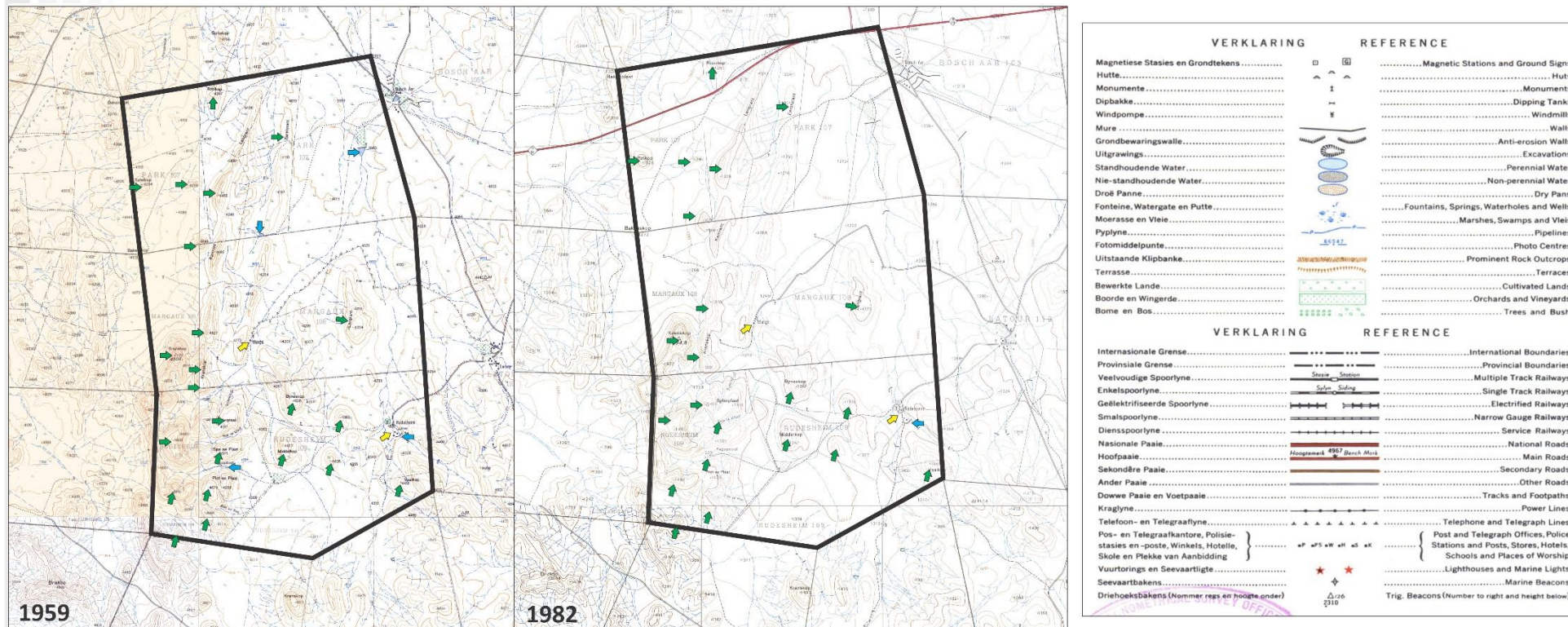


Figure 6-7: Historical topographic maps of the project area (black outline) in the past decades. Note the presence of man-made structures (yellow arrows), water sources and pans (blue arrows) and uniquely named hills and mountains (green arrows) in the project area.

## 6.2 The Archaeological Site Survey

As noted above, the project landscape is dominated by Colonial Period and Stone Age localities. An analysis of historical aerial imagery and archive maps of areas subject to this assessment suggests a landscape which has seen little human interference with historical farming activities occurring in small portions.

**This inference was confirmed during an archaeological site assessment of the Farm Margaux where *in situ* archaeological or heritage remains were encountered.**

### 6.2.1 Stone Age

Site	NH-MG-2822-01
Coordinates	S28.939690° E22.799485°
Farm / Property	Margaux 108
50K Map Series	2822DC, 2822DD, 2922BA, 2922BB
Type	Stone Age Localities
Field Rating:	<b>3. Medium</b>

A scatter of possible Earlier and Middle Stone Age lithic occurrences were identified within and around an erosion donga along the north eastern border of the property. Here, natural elements such as precipitation and groundwater have exposed the stone tools, in places within a decomposed subsurface calcrete rock layer and there seems to be some mixing of an earlier ESA assemblage with lithics from the MSA but the individual artefacts show a predominant MSA signature. Preliminary examinations of the lithics, which includes possible choppers, chunks, utilised flakes and side scrapers as well as adzes and core tools indicate that a number of the flakes display faceted platforms, characteristic of the MSA. Use wear and marks are clearly visible on formal tools. The raw material used in the production of the lithics is mostly hornfels and shale, known to have been a favoured raw material for making stone artefacts. These open-air collections probably represent a palimpsest of visits by prehistoric groups up to the MSA. The Stone Age representations are of interest due to the higher density of the scatters in places and it is rated as of medium scientific value and potential and a specialist analysis of lithics from the site might provide a further understanding of the development and spread of the MSA in the Northern Cape and the larger Postmasburg and Griekwastad Landscape.



Figure 6-8: General surroundings at Site NH-MG-2822-01 where ESA and MSA localities were noted.



Figure 6-9: Possible ESA choppers (left and right) and a MSA blade (center) from NH-MG-2822-01.



Figure 6-10: Stone tools on quartz (left) and MSA lithics from NH-MG-2822-01.

Site	NH-MG-2822-02
Coordinates	S28.950064° E22.763219°
Farm / Property	Margaux 108
50K Map Series	2822DC, 2822DD, 2922BA, 2922BB
Type	Stone Age Localities
Field Rating:	<i>IV. High</i>

A small rock shelter with clear cultural remnants is situated under an overhang in a low mountain ridge in a central portion of the project area. Here, a hearth is placed in the middle of the shelter on top of a layer of organic soil containing cultural deposits which covers most of the shelter. The interior of the overhang forms a small rock passage leading into the ridge and it is possible that the occupation / activity areas of the shelter could extend into this passage. Ocher markings or crude finger paintings were noted on one of the rock faces. Stone Age artefacts were observed within and around the shelter. The artefacts seem to be a mix of single Middle Stone Age (MSA) lithics and Later Stone Age (LSA) microlithic tools. Artefacts observed include both residue and debris, and formal LSA tools such as microlithic scrapers, points and blades as well as residue flakes. The tools were manufactured from, amongst others, banded iron stone, hornfels, fine-grained dolerite as well as Cryptocrystalline Silicas (CCS) including quartzes, chalcedony and mudstones. Scarring on large boulders around the shelter indicated knapping and flaking which suggests that the shelter might have been used as a manufacturing site for stone tools. Interestingly, a small iron ore / specularite mine or sourcing site is situated directly east of the shelter in the same natural context. A single clay pot fragment was found at the site. Material culture noted at the shelter suggest multiple - probably brief - occupational events by both Hunter Gatherers and Herder groups over many years. The site has potential to yield valuable archeological information on the regional development of the LSA and it has been assigned a high archaeological significance.



Figure 6-11: View of the rock shelter at Site NH-MG-2822-02 in the project area.



Figure 6-12: Image indicating the proximity of Site NH-MG-2822-02 (rock shelter, right arrow) to the iron ore / specularite sourcing area at Site NH-MG-2822-06 (left arrow).



Figure 6-13: View of the interior of the rock shelter at NH-MG-2822-02. Note the hearth on the overhang floor (left) and the passage leading into the hill (right).



Figure 6-14: View of ochre markings and possible finger paintings on the walls of the rock shelter at NH-MG-2822-02.



Figure 6-15: Microlithic scarpers (left, center) and a blade (right) from NH-MG-2822-02.



Figure 6-16: A potshard (left), a possible MSA blade (center) and a core (right) from NH-MG-2822-02.





Figure 6-17: Stone flakes and tools from the rock shelter at NH-MG-2822-02.

### 6.2.2 Historical Period

Postmasburg and Griekwastad and its surroundings have a long and extensive Colonial Period settlement history. From around the first half of the 19<sup>th</sup> century, the area was frequented by explorers, miners and farmers who all contributed to a recent history of mining, settlement and conflict.

<b>Site</b>	<b>NH-MG-2822-03</b>
<b>Coordinates</b>	S28.957264° E22.766181°
<b>Farm / Property</b>	Margaux 108
<b>50K Map Series</b>	2822DC, 2822DD, 2922BA, 2922BB
<b>Type</b>	Historical Period Ruins / Site
<b>Field Rating:</b>	<b>2a. Low Significance</b>

The remains of the old Margaux farmstead occur in a central portion of the project area. Little remains of the farmstead and single foundation structures could be identified at the site, which is clearly visible on aerial imagery. An analysis of historical topographical maps and aerial photographs indicate the presence of the farmstead from at least 1959 and the site is older than 60 years and generally protected under the National Heritage Resource Act (NHRA 1999). However, the farmstead is poorly preserved and is of low heritage significance.



Figure 6-18: View of the site of the old Margaux Farmstead at NH-MG-2822-03.

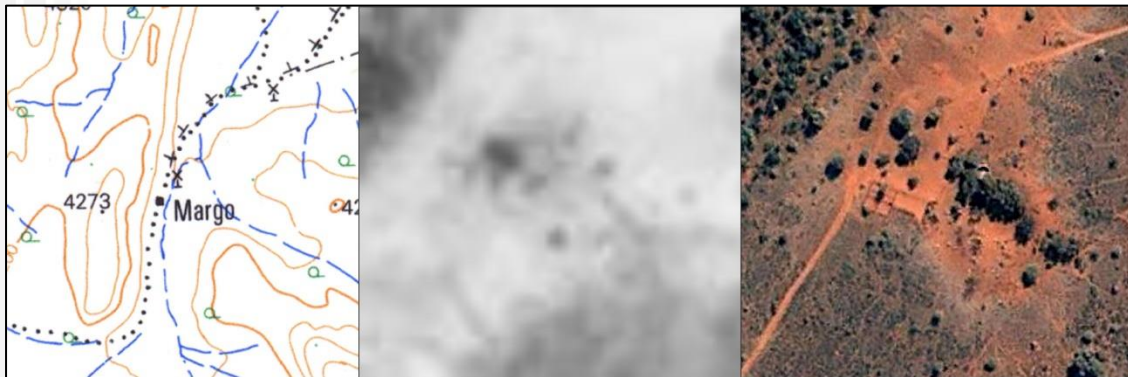


Figure 6-19: The old Margaux Farmstead (NH-MG-2822-03) indicated on a historical map dating to 1959 (left), on an aerial image dating to 1970 (center), and the site in contemporary times (right).

<b>Site</b>	NH-MG-2822-04
<b>Coordinates</b>	S28.961130° E22.762202°
<b>Farm / Property</b>	Margaux 108
<b>50K Map Series</b>	2822DC, 2822DD, 2922BA, 2922BB
<b>Type</b>	Historical Period Building
<b>Field Rating:</b>	<b>2a. Low Significance</b>

A small building consisting out of two booths with individual entrances was documented in a river valley in the project area. The building was constructed out concrete bricks and a roof constructed out of dated corrugate iron covers the feature. Wooden door frames probably held wooden doors at the entrances to the booths. A disused telephone line post stands adjacent to the building. The building is not indicated on historical topographical maps bit it is visible on an aerial photograph dating to 1970. The owner of the Farm Margaux indicated that the building was used as a telephone booth facility on the farm. The building might be older than 60 years and generally protected under the National Heritage Resource Act (NHRA 1999). The site might afford a better understanding of social and technological developments in the general farming landscape and it is of medium-low heritage significance.



Figure 6-20: View of the small telephone booth building at NH-MG-2822-04.

### 6.2.3 Graves / Burial Sites

<b>Site</b>	<b>NH-MG-2822-05</b>
<b>Coordinates</b>	S28.957264° E22.766181°
<b>Farm / Property</b>	Margaux 108
<b>50K Map Series</b>	2822DC, 2822DD, 2922BA, 2922BB
<b>Type</b>	Burial Site
<b>Field Rating:</b>	<b>4b. High significance</b>

The owner of the Farm Margaux indicated that graves were present around the old Margaux farmstead. The site is generally overgrown and the graves could not be located during the site assessment. However, the burials are of high significance and formally protected by the NHRA 1999. Any burial site in the project area should be carefully managed or mitigated should impact occur (see Section 6).

### 6.2.4 Other Sites / Features

<b>Site</b>	<b>NH-MG-2822-06</b>
<b>Coordinates</b>	S28.950396° E22.763492°
<b>Farm / Property</b>	Margaux 108
<b>50K Map Series</b>	2822DC, 2822DD, 2922BA, 2922BB
<b>Type</b>	Mining / Mineral Sourcing Site
<b>Field Rating:</b>	<b>Unknown</b>

A small iron ore / specularite mine or sourcing site is situated in a low mountain ridge in a central portion of the project area. The site is situated no more than 50m south-east of the Hunter Gatherer / Herder shelter noted above (**NH-MG-2822-06**) in the same natural setting. It is possible that iron ore / specularite were sources from the site by Hunter Gatherers / Herder from the adjacent rock shelter but the site probably acted as regional source for these materials. The heritage value but site needs to be more clearly defined pending larger landscape studies in the use of raw materials from similar mineral sources.



Figure 6-21: View of a small iron ore / specularite mine or sourcing site at NH-MG-2822-06.

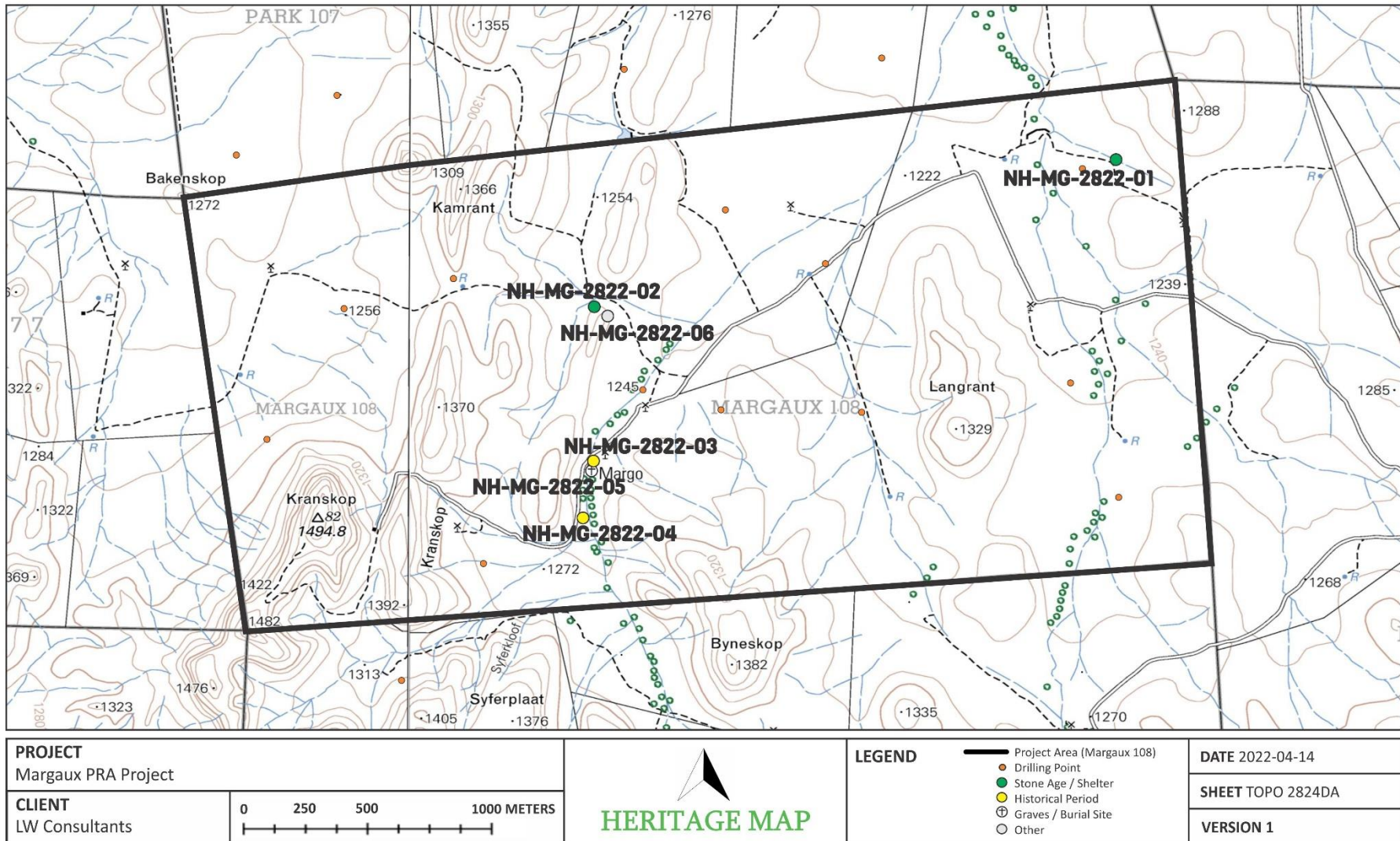


Figure 6-22: Topographic map indicating the location of heritage occurrences discussed in the text.

## 7 STATEMENT OF SIGNIFICANCE AND IMPACT RATING

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

### 7.1 General assessment of impacts on resources<sup>1</sup>

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

#### 7.1.1 Direct, indirect and cumulative effects

**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).

### 7.2 Direct Impact Rating Criteria

#### 7.2.1 Extent

Local	extend only as far as the footprint of the proposed activity/development
Site	Impact extends beyond the site footprint to immediate surrounds
Regional	within which development takes place, i.e. farm, suburb, town, community
National	Impact is on a national level

#### 7.2.2 Duration

Short term	The impact will disappear with through mitigation or through natural processes
Medium term	The impact will last up to the end of the phases, where after it will be negated
Long term	impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or by human intervention
Permanent	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

#### 7.2.3 Magnitude severity

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
High	where heritage value is altered to the extent that it will temporarily or permanently be damaged or destroyed

#### 7.2.4 Probability

Improbable	where the possibility of the impact to materialize is very low either because of design or historic experience;
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<sup>1</sup> Based on: Winter, S. & Baumann, N. 2005. *Guideline for involving heritage specialists in EIA processes: Edition 1.*

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.

### 7.2.5 Impact Significance

Low	negligible effect on heritage – no effect on decision
Medium	where it would have a moderate effect on heritage and – influences the decision
High	high risk of, a big effect on heritage. Impacts of high significance should have a major influence on the decision
Very high	high risk of, an irreversible and possibly irreplaceable impact on heritage – central factor in decision-making

### 7.3 Weighting matrix

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

The following table summarizes impacts to the **high** significance Stone Age shelter in the proposed project area (NH-MG-2822-02):

<b>NATURE OF IMPACT:</b> Impact could involve displacement or destruction of heritage material in the study area.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>EXTENT</b>	Local	Local
<b>DURATION</b>	Permanent	Permanent
<b>MAGINITUDE</b>	Major	Minor
<b>PROBABILITY</b>	Probable	Very improbable
<b>SIGNIFICANCE</b>	High	Low
<b>STATUS</b>	Negative	Neutral
<b>REVERSIBILITY</b>	Non-reversible	Non-reversible

<b>IRREPLACEABLE LOSS OF RESOURCES?</b>	Yes	No
<b>CAN IMPACTS BE MITIGATED?</b>	Yes	
<b>MITIGATION:</b> Site monitoring.		
<b>CUMULATIVE IMPACTS:</b> Site monitoring by ECO, Phase 2 Specialist Assessment, destruction permitting if and when required.		
<b>RESIDUAL IMPACTS:</b> n/a		

The following table summarizes impacts to the **medium** significance Stone Age localities proposed project area (**NH-MG-2822-01**):

<b>NATURE OF IMPACT:</b> Impact could involve displacement or destruction of heritage material in the study area.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>EXTENT</b>	Local	Local
<b>DURATION</b>	Permanent	Permanent
<b>MAGNITUDE</b>	Minor	Minor
<b>PROBABILITY</b>	Probable	Very improbable
<b>SIGNIFICANCE</b>	Medium	Low
<b>STATUS</b>	Negative	Neutral
<b>REVERSIBILITY</b>	Non-reversible	Non-reversible
<b>IRREPLACEABLE LOSS OF RESOURCES?</b>	Yes	No
<b>CAN IMPACTS BE MITIGATED?</b>	Yes	
<b>MITIGATION:</b> Site monitoring.		
<b>CUMULATIVE IMPACTS:</b> Site monitoring by ECO, Phase 2 Specialist Assessment, destruction permitting if and when required.		
<b>RESIDUAL IMPACTS:</b> n/a		

The following table summarizes impacts to the **medium-low** and **low** significance Historical Period sites in the proposed project area (**NH-MG-2822-03 - NH-MG-2822-04**):

<b>NATURE OF IMPACT:</b> Impact could involve displacement or destruction of heritage material in the study area.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>EXTENT</b>	Local	Local
<b>DURATION</b>	Permanent	Permanent
<b>MAGNITUDE</b>	Minor	Minor
<b>PROBABILITY</b>	Probable	Very improbable
<b>SIGNIFICANCE</b>	Medium-Low	Low
<b>STATUS</b>	Negative	Neutral
<b>REVERSIBILITY</b>	Non-reversible	Non-reversible
<b>IRREPLACEABLE LOSS OF RESOURCES?</b>	Yes	No
<b>CAN IMPACTS BE MITIGATED?</b>	Yes	
<b>MITIGATION:</b> Site monitoring.		



<b>CUMULATIVE IMPACTS</b> Site monitoring by ECO, destruction permitting if and when required.
<b>RESIDUAL IMPACTS:</b> n/a

The following table summarizes impacts to the **high** significance probable burial site located in the proposed project area (**NH-MG-2822-05**):

<b>NATURE OF IMPACT:</b> Impact could involve displacement or destruction of heritage material in the study area.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>EXTENT</b>	Local	Local
<b>DURATION</b>	Permanent	Permanent
<b>MAGNITUDE</b>	Major	Minor
<b>PROBABILITY</b>	Probable	Very improbable
<b>SIGNIFICANCE</b>	High	Low
<b>STATUS</b>	Negative	Neutral
<b>REVERSIBILITY</b>	Non-reversible	Non-reversible
<b>IRREPLACEABLE LOSS OF RESOURCES?</b>	Yes	No
<b>CAN IMPACTS BE MITIGATED?</b>	Yes	
<b>MITIGATION:</b> Avoidance, infrastructure redesign, site management (fencing, access control), strict site monitoring by ECO. Grave Relocation. Public Participation		
<b>CUMULATIVE IMPACTS:</b> No cumulative impact is anticipated.		
<b>RESIDUAL IMPACTS:</b> n/a		

## 7.4 Evaluation of Impact: The Project

### 7.4.1 Archaeology

This assessment identified Earlier, Middle and Later Stone Age localities across the proposed project area. This Stone Age Cultural Landscape shows evidence of the unique utilization by Stone Age people of their environment. Of particular significance is a Hunter Gatherer and Herder rock shelter where rock art, Stone Age scatters (including specifically MSA and LSA type artefacts) as well as a deposit of organic material containing cultural material were noted. The Stone Age landscape is of significance and impact might be anticipated.

### 7.4.2 The Built Environment

Farm houses and outbuildings dating to the 19<sup>th</sup> and 20<sup>th</sup> centuries are common around Postmasburg and Griekwastad. The study noted the poorly preserved remains of the Historical Period Margaux farmstead and the site is protected under the NHRA. Little remains of the farmstead and the site might be impacted by proposed prospecting developments. In addition, a small building used as a telephone booth facility on the farm Margaux was documented in a river valley in the project area. The building might date to the Historical Period and application should be made for the relevant destruction permits prior to site impact. As for the rest of the project area, the general landscape holds varied significance in terms of the built environment as the area comprises historical farming remnants and relatively newly established agricultural townlands.

### 7.4.3 Cultural Landscape

Generally, the proposed project area and its surrounds are characterized by open farmlands and rural settlements. Locally, the cultural landscape is associated with the Stone Age people as well as farming

communities settling in the area in the past centuries. Aspects of the landscape is sensitive and needs to be protected in terms of the archaeological importance but also the living history that is linked to the farm Margaux.

#### 7.4.4 Graves / Human Burials Sites

The owner of the Farm Margaux indicated that graves were present around the old Margaux farmstead. The receptor is of high significance in terms of heritage, social and cultural value. The potential impact on the resources is regarded as 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 Northern Cape Province, graves and cemeteries often occur around farmsteads in family burial grounds but they are also randomly scattered around archaeological and historical settlements. The probability of informal human burials encountered during development should thus not be excluded. In addition, human remains and burials are commonly found close to archaeological sites; they may be found in "lost" graveyards, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials. 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.

#### 7.5 Management actions

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

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

- *No specific mitigation measures are required for the remains of the old Margaux farmstead (NH-MG-2822-03) as little of the site and structural elements remain but it is recommended that the site be monitored during all stages of development in order to detect and preserve previously undocumented heritage receptors that might occur here.*
- *It is necessary that the heritage value of small iron ore / specularite mine or sourcing site (NH-MG-2822-06) be more clearly defined pending larger landscape studies in the use of raw materials from similar mineral sources.*
- *For the Hunter Gatherers / Herder rock shelter of high heritage significance (NH-MG-2822-02) within the project area the following are required in terms of heritage management and mitigation:*

<b>PROJECT COMPONENT/S</b>	Pre-construction, all phases of construction and operation.		
<b>POTENTIAL IMPACT</b>	Damage/destruction of sites, loss of archaeological interpretive value.		
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
<b>MITIGATION: TARGET/OBJECTIVE</b>	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.		
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>	
<b>Primary Mitigation Procedure</b>			

<b>Site Mitigation:</b> Re-assessment of drilling point locations by means of a site walk-over by the heritage specialist in order to rate the localized impact on Stone Age resources. Mitigation of impact of sites prior to destruction, including: - A detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region to be conducted. - A mitigation mythology to be developed based on an understanding of the archaeology and history of the broader region. - The process should include the detailed site mapping, recording of surface features and subsurface sampling of cultural material in the shelter. - Rock Art and marking should be documented and analyzed by suitable qualified specialist. - This measure should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.		STONE AGE SPECIALIST	Site mitigation should be concluded prior to development site impacts.
<b>Secondary Mitigation Procedure</b>			
<b>Site Monitoring:</b> Regular examination of trenches and excavations.		HERITAGE ASSESSMENT PRACTITIONER	Prior to the commencement of construction and earth-moving.
<b>PERFORMANCE INDICATOR</b>	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
<b>MONITORING</b>	Successful location of sites by person/s monitoring.		

- For the Stone Age localities of medium heritage significance (**NH-MG-2822-01**) within the project area the following are required in terms of heritage management and mitigation:

<b>PROJECT COMPONENT/S</b>	Pre-construction, all phases of construction and operation.		
<b>POTENTIAL IMPACT</b>	Damage/destruction of sites, loss of archaeological interpretive value.		
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
<b>MITIGATION: TARGET/OBJECTIVE</b>	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.		
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>	
<b>Primary Mitigation Procedure</b>			
<b>Site Mitigation:</b> Re-assessment of drilling point locations by means of a site walk-over by the heritage specialist in order to rate the localized impact on Stone Age resources. Mitigation of impact of sites prior to destruction, including: - A detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region to be conducted. - A mitigation mythology to be developed based on an understanding of the archaeology and history of the broader region. - The process should include the recording surface and possible subsurface sampling of Stone Age localities in the project area. - This measure should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.		STONE AGE SPECIALIST	Site mitigation should be concluded prior to development site impacts.
<b>Secondary Mitigation Procedure</b>			
<b>Site Monitoring:</b> Regular examination of trenches and excavations.		HERITAGE ASSESSMENT PRACTITIONER	Prior to the commencement of construction and earth-

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

- For the possible Historical Period phone booth building of medium-low heritage significance (**NH-MG-2822-04**) within the project area the following are required in terms of heritage management and mitigation:

<b>PROJECT COMPONENT/S</b>	Pre-construction, all phases of construction and operation.	
<b>POTENTIAL IMPACT</b>	Damage/destruction of sites, loss of heritage value.	
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.	
<b>MITIGATION: TARGET/OBJECTIVE</b>	To locate previously undetected heritage remains / graves as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.	
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>
<b>Primary Mitigation Procedure</b>		
<b>Site Mitigation:</b> Documentation of sites if features are to be impacted on by development (mapping, desktop study Phase 2 site sampling). Permitting if and when required. <b>Permitting:</b> Obtain necessary destruction permits from the relevant Heritage Resources Authorities prior to site impact and destruction.	ECO, HERITAGE ASSESSMENT PRACTITIONER	Monitor as frequently as practically possible. Prior to the commencement of construction and earth-moving.
<b>Secondary Mitigation Procedure</b>		
<b>Site Monitoring:</b> Regular examination of trenches and excavations in order to detect and preserve previously undocumented heritage receptors.		
<b>PERFORMANCE INDICATOR</b>	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.	
<b>MONITORING</b>	Successful location of sites by person/s monitoring.	

- For the highly significant burial site (**NH-MG-2822-05**) occurring within the project the following are required in terms of heritage management and mitigation:

<b>PROJECT COMPONENT/S</b>	All phases of construction and operation.	
<b>POTENTIAL IMPACT</b>	Damage/disturbance to subsurface burials and surface burial features.	
<b>ACTIVITY RISK/SOURCE</b>	Digging foundations and trenches into sensitive deposits that are not visible at the surface.	
<b>MITIGATION: TARGET/OBJECTIVE</b>	To locate human burials as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.	
<b>MITIGATION: ACTION/CONTROL</b>	<b>RESPONSIBILITY</b>	<b>TIMEFRAME</b>
Preferred Mitigation Procedure		
<b>Avoidance:</b> Implement a heritage conservation buffer of at least 50m around the burial site, redesign project components (drilling points) to avoid the heritage resource and the proposed conservation buffer. Erect fence around the burial site and apply access control with signage to indicate visitation contacts. Weekly monitoring during initial site clearing and earth moving activities by an ECO familiar with the sensitivity of receptors, or the Heritage Consultant. Monthly monitoring of the burial sites is recommended during subsequent stages of development. Implementation of a site management plan detailing site management conservation measures.	DEVELOPER QUALIFIED HERITAGE SPECIALIST	Prior to the commencement of construction and earth-moving.
Alternative Mitigation Procedure (if preferred mitigation procedure is not feasible)		
<b>Grave relocation:</b> relocation of the burial to the nearby cemetery, 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)		
<b>Site Monitoring:</b> 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.
<b>PERFORMANCE INDICATOR</b>	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.	
<b>MONITORING</b>	Successful location of sites by person/s monitoring.	

## 8 RECOMMENDATIONS

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The larger landscape around the project area indicates a rich heritage horizon with ample Stone Age sites as well as Colonial Period resources. Small portions of the landscape display transformation by agriculture activities potentially sterilizing surface and subsurface of heritage remains, especially those dating to pre-colonial and prehistorical times. Cognisance should nonetheless be taken of archaeological material that might be present in surface and sub-surface deposits along drainage lines and in pristine areas. The following recommendations are made based on general observations in the proposed Margaux PRA Project area:

- Permission for site access could not be obtained for the Farms Park 107 and Rudesheim 109 and these farms were not included in the site survey. It is required that these properties be investigated by means of archaeological field surveys and findings from the survey should be included in this / an AIA report for review by the relevant maturities prior to prospecting on these farms.
- Stone Age remains occur abundantly in the landscape and the field assessment located Earlier Stone Age (ESA) and Middle Stone Age (MSA) localities (**NH-MG-2822-01**) in project area. These localities are of heritage significance and it is recommended that drilling hole locations are re-assessed by means of a site walk-over by the heritage specialist in order to rate the localised impact on Stone Age resources. Should such resources be impacted on, the localities will require mitigation, including a detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region. A mitigation mythology should be developed based on an understanding of the archaeology and history of the broader region and this should be followed by the recording and surface and possible subsurface sampling of the Stone Age localities by a qualified Stone Age Specialist. Mitigation of these localities should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.
- A Hunter Gatherer and Herder rock shelter (**NH-MG-2822-02**) containing rock art, Stone Age scatters (including specifically MSA and LSA type artefacts) as well as a deposit of organic material containing cultural material was noted in the project area. Material culture noted at the shelter suggest multiple - probably brief - occupational events by both Hunter Gatherers and Herder groups over many years. The site has potential to yield valuable archeological information on the regional development of the LSA and it has been assigned a high archaeological significance. It is recommended that drilling hole locations are re-assessed by means of a site walk-over by the heritage specialist in order to rate the localised impact on Stone Age resources. Should the site be impacted on, the shelter will require mitigation, including a detailed desktop assessment, reappraisal of previous publications and a literature study of sources on the archaeology of the region. A mitigation mythology should be developed based on an understanding of the archaeology and history of the broader region. The process should include the detailed site mapping, recording of surface features and subsurface sampling of cultural material in the shelter by a qualified Stone Age Specialist. Rock Art and markings should be documented and analyzed by suitable qualified specialist in the field. Mitigation of this heritage resource should be undertaken subject to relevant and required excavation/ destruction permitting from the relevant heritage authorities.
- No specific mitigation measures are required for the remains of the old Margaux farmstead (**NH-MG-2822-03**) as little of the site and structural elements remain but it is recommended that the site be monitored during all stages of development in order to detect and preserve previously undocumented heritage receptors that might occur here.
- It is necessary that the heritage value of small iron ore / specularite mine or sourcing site (**NH-MG-2822-06**) be more clearly defined pending larger landscape studies in the use of raw materials from similar mineral sources.
- A small building used as a telephone booth facility on the farm Margaux (**NH-MG-2822-04**) was documented in a river valley in the project area. The building might date to the Historical and it might be of heritage significance. Should impact occur, the necessary application should be made for the relevant alteration and / or destruction permits. In general, the site should be monitored in order to

detect impact on the site and the potential presence of previously undetected burials or heritage remains at the earliest opportunity.

- The owner of the Farm Margaux indicated that graves were present around the old Margaux farmstead. The receptor is of high significance in terms of heritage, social and cultural value and it might be impacted on by the proposed project. The exact position of the burial site could not be established as the surroundings were densely vegetated and it is recommended that the burial site location be identified and plotted. As a primary measure, Heritage Authority (SAHRA) guidelines require a 50m conservation buffer for all burials. It is recommended that human burial site be fenced off with wire, chicken wire or palisade fencing of a minimum height of 1.8m placed no closer than 2m from the burial. An access gate should be erected and access control should be applied to the site. A sign should be positioned on the fence indicating the heritage significance of the site and contact details for site visitation. A heritage Site Management Plan (SMP) should be compiled for the burial to stipulate conservation measures, responsible persons and chance find procedures for further heritage mitigation. 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).**

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

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

## 9 GENERAL COMMENTS AND CONDITIONS

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

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

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

## 10 BIBLIOGRAPHY

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### 10.1 Academic Research Publications

Beaumont P B et al., 1989, Patterns in the Age and Context of Rock Art in the Northern Cape, *The South African Archaeological Bulletin*, Vol. 44, No. 150, pp. 73-81

Beaumont, P & Morris, D. 1990. Guide to archaeological sites in the Northern Cape. *McGregor Museum, Kimberley*

Beaumont, P.B., 2004. Kathu Pan and Kathu Townlands/Uitkoms. In: Morris, D. & Beaumont, P.B. (Eds.), *Archaeology in the Northern Cape: Some Key Sites*. Southern African Association for Archaeologists Postconference Excursion, Kimberley, McGregor Museum: pp. 50–53;

Bergh, J.S. 1999. *Geskiedenisatlas van Suid-Afrika: die vier noordelike provinsies*. Pretoria: J.L. van Schaik

Becker, E. 2013. : Dingleton Resettlement Project - Heritage Component: Motivation for demolition of historical buildings. Kumba Iron Ore Mine.

Breutz, P.J. 1963. *The Tribes of the Districts of Kuruman and Postmasburg*. Department of Bantu Administration and Development, Ethnological Publication No. 49.

Chazan, M. Wilkins, J. Berna, F & Morris, D. Bestwood 1: a newly discovered Earlier Stone Age living surface near Kathu, Northern Cape Province, South Africa *Antiquity* Volume 086 Issue 331 March 2012

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

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

Guelke L and Shell Robert, 1992, Landscape of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652 – 1780, *Journal of Southern African Studies*, Vol. 18, No. 4, pp. 803 – 824.

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

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

Hallett R, 1984, Desolation on the Veld: Forced Removals in South Africa, *African Affairs*, Vol. 83, No. 332, pp. 301-320.

Herries, A.I.R. 2011. A chronological perspective on the Acheulian and its transition to the Middle Stone Age in southern Africa: the question of the Fauresmith. *International Journal of Evolutionary Biology* 1-25. Article ID 961401. doi:10.4061/2011/961401.

Humphreys, A.J.B. & Thackeray, A. 1. 1983. *Ghaap and Gariiep: Later Stone Age studies in the Northern Cape*.



The South African Archaeological Society Monograph Series No 2. Cape Town.

Legassick, M.C. 1989. The northern frontier to c. 1840: the rise and decline of the Griqua people. In Elphick, R. & Giliomee, H. (Eds) *The shaping of South African society, 1652-1840*. Middletown: Wesleyan University Press.

Legassick, M. 2010. *The politics of a South African frontier: The Griqua, the Sotho-Tswana and the missionaries, 1780 – 1840*. Basle: Basler Afrika Bibliographien

Phillipson, D.W. 1985. African Archaeology (second edition). Cambridge: Cambridge University Press

Porat, N., Chazan, M., Grün, R., Aubert, M., Eisenmann, V. & Horwitz, L.K. 2010. New radiometric ages for the Fauresmith industry from Kathu Pan, southern Africa: Implications for the Earlier to Middle Stone Age transition. *Journal of Archaeological Science* 37: 269-283

Renfrew, C & Bahn, P. 1991. Archaeology: Theories, Methods and Practice USA: Thames & Hudson

Sharer, A.J & Ashmore, W 1979. The Nature of Archaeological Data California: Benjamin/Cummings Publishing

S.A. Manganese, 1977. *Kalahari wealth: The story of manganese 1926 -1976*. Cape Town: Purnell.

Snyman P H R, 1985, Postmasburg en die tweede Vryheidsoorlog, *The South African Military Society*, Vol. 6 No. 6, pp 1-8.

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

Soriano, S, Villa, P & Wadley, L. 2007. Blade technology and tool forms in the Middle Stone Age of South Africa: the Howiesons Poort and post-Howiesons Poort at Rose Cottage Cave. *Journal of Archaeological Science* 34:681-703.

Walker SJH, Lukich V, Chazan M. 2014. Kathu Townlands: A High Density Earlier Stone Age Locality in the Interior of South Africa. *PLoS ONE* 9(7): e103436.

Wilkins, J. & Chazan, M. 2012. Blade production ~500 thousand years ago at Kathu Pan 1, South Africa: support for a multiple origins hypothesis for early Middle Pleistocene blade technology. *Journal of Archaeological Science*

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

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

## 10.2 Unpublished Sources and Reports

Almond, J.E. 2014. Palaeontological specialist assessment: desktop study. Residential development on remainder and portion 3 of farm Bestwood Rd 459 in Kathu, Gamagara Municipality, Northern Cape Province.

Beaumont, P.B. 2000. Archaeological Impact Assessment: Archaeological Scoping Survey for the Purpose of an EMPR for the Sishen Iron Ore Mine. An unpublished report by the McGregor Museum on file at SAHRA as 2000-SAHRA-0023.

Beaumont, P.B. 2004a. Heritage EIA of two areas at Sishen Iron Ore Mine. An unpublished report by the McGregor Museum on file at SAHRA as 2004-SAHRA-0067.

Beaumont, P.B. 2005a. Heritage Impact Assessment of an area of the Sishen Iron Ore Mine that may be covered by the Vliegveldt waste dump. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0230.

Beaumont, P.B. 2005b. Heritage Impact Assessment for EMPR amendment for crusher at Sishen Iron Ore Mine. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0259.

Beaumont, P.B. 2006a. Phase 1 Heritage Impact Assessment report on Erf 1439, remainder of Erf 2974, remainder of portion 1 of the farm Uitkoms 463, and farms Kathu 465 and Sims 462 at and near Kathu in the Northern Cape Province. An unpublished report by the McGregor Museum on file at SAHRA as 2006 SAHRA-0127.

Beaumont, P.B. 2006b. Phase 1 Heritage Impact Assessment Report on portions A and B of the farm Sims 462, Kgalagadi District, Northern Cape Province. An unpublished report by the McGregor Museum on file at SAHRA as 2006-SAHRA-0165.

Beaumont, P.B., 2006c. Phase 1 Heritage Impact Assessment Report on portion 48 and the remaining portion of portion 4 of the farm Bestwood 459, Kgalagadi District, Northern Cape Province. An Archaeological Impact Assessment report by the Archaeology Department, McGregor Museum, prepared for MEG Environmental Impact Studies

Beaumont, P.B. 2007. Supplementary Archaeological Impact Assessment report on sites near or on the farm Hartnolls 458, Kgalagadi District Municipality, Northern Cape Province.

Beaumont, P.B. 2008a. Phase 1 Archaeological Impact Assessment Report on Portion 459/49 of the Farm Bestwood 459 at Kathu, Kgalagadi District Municipality, Northern Cape Province.

Beaumont, P.B. 2008b. Phase 1 Heritage Impact Assessment report on a portion of the remainder of the farm Sekgame 461, Kathu, Gamagara Municipality, Northern Cape Province.

Beaumont, P.B. 2010. Archaeological scoping survey for the purpose of an EMPR for the Sishen Iron Ore Mine. An unpublished report by the McGregor Museum. On file at SAHRA.

Beaumont, P.B. 2013. Phase 2 archaeological permit mitigation report on a ~0.7 ha portion of the farm Bestwood 549, situated on the eastern outskirts of Kathu, John Taolo Gaetsewe District Municipality, Northern Cape Province.

De Jong, R.C. 2010. Heritage impact assessment report: proposed manganese and iron ore mining right application in respect of the remainder of the farm Paling 434, Hay registration division, Northern Cape. An unpublished report by Cultmatrix. On file at SAHRA.

Dreyer, C. 2006. First Phase Archaeological and Cultural Heritage Assessment of the proposed residential developments at the farm Hartnolls 458, Kathu, Northern Cape.

Dreyer, C. 2007. First Phase Archaeological and Cultural Heritage Assessment of the proposed Garona-Mercury Transmission Power Line, Northern Cape, North-West Province & Free State. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2007-SAHRA- 0052.

Dreyer, C. 2008a. First Phase Archaeological and Cultural Heritage Assessment of the proposed residential developments at a portion of the remainder of the farm Bestwood 459 Rd, Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2008-SAHRA-0433.

Dreyer, C. 2008b. First Phase Archaeological and Cultural Heritage Assessment of the proposed Bourke project, Ballast site and crushing plant at Bruce Mine, Dingleton, near Kathu, Northern Cape. An unpublished report by Pr. Archaeologist/Heritage Specialist on file at SAHRA as 2008- SAHRA-0666

Kaplan, J.M. 2008. Phase 1 Archaeological Impact Assessment: Proposed housing development, Erf 5168, Kathu, Northern Cape Province. An unpublished report by the Agency for Cultural Resources Management on file at SAHRA as 2008-SAHRA-0487.

Kaplan, J. Heritage Impact Assessment proposed mixed use development in Kathu, Northern Cape Province. Remainder & Portion 1 of the Farm Sims 462, Kuruman RD. Prepared for: Enviroafrica.

Kruger, N. 2014. Archaeological Impact Assessment: Stormwater Infrastructure for the Sishen Mine, John Taolo Gaetsewe District Municipality, Northern Cape Province. An unpublished report by AGES Gauteng. On file at SAHRA.

Morris, D. 1999. Proposed mining areas and properties at Ulco, Northern Cape, Including the Vicinities of Gorrokokop and Groot Kloof. An unpublished report by the McGregor Museum on file at SAHRA as 1999 SAHRA-0055.

Morris, D. 2005. Report on a Phase 1 Archaeological Assessment of Proposed Mining Areas of the Farms Bruce, King, Mokaning and Parson, Between Postmasburg and Kathu, Northern Cape. An unpublished report by the McGregor Museum on file at SAHRA as 2005-SAHRA-0032.

Morris, D. 2008. Archaeological and Heritage Phase 1 Impact Assessment for proposed upgrading of Sishen mine diesel depot storage capacity at Kathu, Northern Cape. An unpublished report by the McGregor Museum on file at SAHRA as 2008-SAHRA-0489.

Morris, D. 2010. Solar energy facilities. Specialist input for the environmental impact assessment phase and environmental management plan for the proposed Kathu-Sishen solar energy facilities, Northern Cape.

Morris, D. 2014. Rectification and/or regularisation of activities relating to the Bestwood township development near Kathu, Northern Cape: Phase 1 Archaeological Impact Assessment.

Van Schalkwyk, J. 2010. Archaeological impact survey report for the proposed development of a solar power plant on the farm Bestwood 459, Kathu Region, Northern Cape Province.

Van der Ryst, M.M. & Küsel, S.U. 2011. Specialist report on the Stone Age and other heritage resources at Kolomela, Postmasburg, Northern Cape. Commissioned by African Heritage Consultants.

Van der Ryst, M.M. & Küsel, S.U. 2012. Phase 2 specialist study of affected Stone Age locality at site SA02, a demarcated surface area, on the farm Nooitgedacht 469 (Woon 469). Commissioned by Sishen Iron Ore Mine and AGES (Pty) Ltd.

Walker S.J.H., Chazan M., Lukich V. & Morris D. 2013. A second Phase 2 archaeological data recovery at the site of Kathu Townlands for Erf 5116: Kathu, Northern Cape Province.

Walker, S.J., Chazan, M. & Morris, D. 2013. Kathu Pan: location and significance. A report requested by SAHRA for the purpose of nomination.

Webley, L & Halkett, D. 2010. Baseline archaeological survey of the farm Driehoekspan 435, between Olifantshoek and Postmasburg in the Northern Cape Province. UCT: Archaeology Contracts Office

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

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

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

### **10.3 Web References**

<http://csq.dla.gov.za/index.html>

Accessed 2022-04-10

[www.sahra.co.za/sahris](http://www.sahra.co.za/sahris)

Accessed 2022-04-10

<http://www.newscientist.com/article/dn22508-first-stonetipped-spear-thrown-earlier-than-thought.html>

Accessed 2022-04-10

<http://southafricanpalaeocaves.files.wordpress.com/>

Accessed 2022-04-10

### **10.4 Archive Maps**

*Map of Postmasburg Region (South Africa) Great Britain. Army. 1902*

*Map of the Postmasburg Area. Cape of Good Hope (Colony). Surveyor General's Office. 1899*

## 11 ADDENDUM 1: HERITAGE LEGISLATION BACKGROUND

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### 11.1 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.

#### 11.1.1 Legislation regarding archaeology and heritage sites

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

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

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

The Act identifies heritage objects as:

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

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

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

and

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

- (d) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (e) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (f) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*

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

and

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

- (h) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (i) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (j) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."*

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

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

#### **11.1.2 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<sup>2</sup> 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<sup>2</sup> in extent; or*
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,*

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

And:

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

- (k) The identification and mapping of all heritage resources in the area affected;*
- (l) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (m) an assessment of the impact of the development on such heritage resources;*
- (n) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (o) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (p) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (q) plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64).”*

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

## **11.2 Assessing the Significance of Heritage Resources**

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people have lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people

of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable*. Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

#### **- Categories of significance**

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

##### *- Aesthetic value:*

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

##### *- Historic value:*

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

##### *- Scientific value:*

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

##### *- Social value:*

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

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

#### **Formally protected sites:**

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



**Generally protected sites:**

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

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

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

## 12 ADDENDUM 2: 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 its 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. site-specific, local, regional, national or international) and the relationship between the heritage resource, its setting and its associations.

**Nature of the impact**

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

**Extent**

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

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

**Duration**

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

- Short term, (needs to be defined in context)
- Medium term, (needs to be defined in context)
- Long term where the impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or

by human intervention; or

- Permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

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

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

**Intensity**

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

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

**Probability**

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

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

**Confidence**

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

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

**Impact Significance**

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

- Low; where it would have a negligible effect on heritage and on the decision
- Medium, where it would have a moderate effect on heritage and should influence the decision.
- High, where it would have, or there would be a high risk of, a big effect on heritage. Impacts of high significance should have a major

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

HERITAGE CONTEXT	TYPE OF DEVELOPMENT			
	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY D
<b>CONTEXT 1</b> High heritage Value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
<b>CONTEXT 2</b> Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
<b>CONTEXT 3</b> Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
<b>CONTEXT 4</b> 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
<p><b>Context 1:</b> 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</p> <p><b>Context 2:</b> Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.</p> <p><b>Context 3:</b> Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources</p> <p><b>Context 4:</b> Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage.</p>	<p><b>Category A: Minimal intensity development</b></p> <ul style="list-style-type: none"> <li>- No rezoning involved; within existing use rights.</li> <li>- No subdivision involved.</li> <li>- Upgrading of existing infrastructure within existing envelopes</li> <li>- Minor internal changes to existing structures</li> <li>- New building footprints limited to less than 1000m2.</li> </ul> <p><b>Category B: Low-key intensity development</b></p> <ul style="list-style-type: none"> <li>- Spot rezoning with no change to overall zoning of a site.</li> <li>- Linear development less than 100m</li> <li>- Building footprints between 1000m2-2000m2</li> <li>- Minor changes to external envelop of existing structures (less than 25%)</li> <li>- Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%).</li> </ul> <p><b>Category C: Moderate intensity development</b></p> <ul style="list-style-type: none"> <li>- Rezoning of a site between 5000m2-10 000m2.</li> <li>- Linear development between 100m and 300m.</li> <li>- Building footprints between 2000m2 and 5000m2</li> <li>- Substantial changes to external envelop of existing structures (more than 50%)</li> <li>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%)</li> </ul> <p><b>Category D: High intensity development</b></p> <ul style="list-style-type: none"> <li>- Rezoning of a site in excess of 10 000m2</li> </ul>

	<ul style="list-style-type: none"> <li>- Linear development in excess of 300m.</li> <li>- Any development changing the character of a site exceeding 5000m<sup>2</sup> or involving the subdivision of a site into three or more erven.</li> <li>- Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%)</li> </ul>
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## 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

