



PGS

HERITAGE

***HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED
CONSTRUCTION OF A FILLING STATION AND ASSOCIATED FACILITIES
ON ERF 6279, DISTRICT MUNICIPALITY OF JOHN TAOLO GAETSEWE
DISTRICT, GA-SEGONYANA LOCAL MUNICIPALITY NORTHERN CAPE
PROVINCE***

Phase 1 – Heritage Impact Assessment

Issue Date - 8 June 2017

Revision No. - ver 0.1

Project No. - 237HIA

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Reg No 2003/008940/07

Declaration of Independence

The report has been compiled by PGS Heritage (Pty) Ltd, an appointed Heritage Specialist for Kalara trading for the proposed Construction of a Filling Station and Associated Facilities On Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality Northern Cape Province. The views stipulated in this report are purely objective and no other interests are displayed during the decision-making processes discussed in the Heritage Impact Assessment Process.

I, Wouter Fourie, declare that –

General declaration:

- I act as the independent archaeological specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting archaeological impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected of an archaeological specialist in terms of the Act and the constitutions of my affiliated professional bodies; and

- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

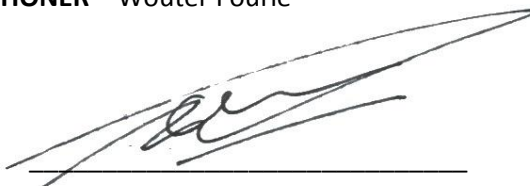
Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

HERITAGE CONSULTANT - PGS Heritage (Pty) Ltd

PRINCIPAL HERITAGE PRACTITIONER – Wouter Fourie

SIGNATURE -



A handwritten signature in black ink, appearing to read 'Wouter Fourie', is written over a solid horizontal line.

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ACKNOWLEDGEMENT OF RECEIPT

CLIENT -

Kalara Trading

CONTACT PERSON -

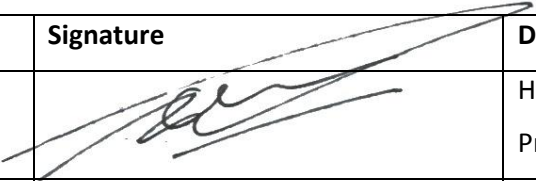
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Date -	8 June 2017		
Document Title	<i>Heritage Impact Assessment for the proposed Construction of a Filling Station and Associated Facilities On Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality Northern Cape Province</i>		
Control	Name	Signature	Designation
Author	Wouter Fourie		Heritage Specialists/ Principal Investigator
Reviewed	Yvonne Gutoona		Environmental Consultant

EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd was appointed by Kalara trading to undertake a Heritage Impact Assessment that forms part of the Basic Assessment Report for the proposed for the proposed Construction of a Filling Station and Associated Facilities On Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality Northern Cape Province.

No heritage sites were identified within the proposed development area s.

No mitigation measures and permits are therefore required and there are “no go” areas identified.

However, should any chance finds of heritage sites and/or objects be located or observed, a heritage specialist must immediately be contacted and the General Management guidelines will apply (Refer to Section 8 for guidelines).

This report has been compiled taking into account the National Environmental Management Act (NEMA) Appendix 6 requirements for specialist reports as indicated in the table below.

NEMA Regs (2017) - Appendix 6	Relevant section in report
Details of the specialist who prepared the report	Page 2 of Report – Contact details and company
The expertise of that person to compile a specialist report including a curriculum vitae	Section 1.2 – refer to Appendix B
A declaration that the person is independent in a form as may be specified by the competent authority	Page 2 of the report
An indication of the scope of, and the purpose for which, the report was prepared	Section 1.1
The date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 5
A description of the methodology adopted in preparing the report or carrying out the specialised process	Section 3
The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	N/A, Section 6
An identification of any areas to be avoided, including buffers	N/A, Section 6
A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	N/A
A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3
A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Section 5
Any mitigation measures for inclusion in the EMPr	Section 6
Any conditions for inclusion in the environmental authorisation	Section 6
Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 8 and 9
A reasoned opinion as to whether the proposed activity or portions thereof should be authorised and	Section 6
If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	
A description of any consultation process that was undertaken during the course of carrying out the study	Not applicable. A public consultation process will be part of the EIA and EMP process.
A summary and copies if any comments that were received during any consultation process	Not applicable. To date not comments regarding heritage resources that require input from a specialist have been raised.
Any other information requested by the competent authority.	Not applicable.

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1 INTRODUCTION

PGS Heritage (Pty) Ltd (PGS) was appointed by Kalara Trading (Kalara) to undertake a Heritage Impact Assessment (HIA) that forms part of the Basic assessment (BA) Report for the proposed Construction of a Filling Station and Associated Facilities On Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality Northern Cape Province.

No heritage sites¹ were identified within the proposed development area.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development area which will assist to determine if the proposed layout is viable. The HIA aims to inform the BA in the development of a comprehensive Environmental Management Program (EMPr) to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop the heritage resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 Specialist Qualifications

This HIA was compiled by PGS.

The staff at PGS have a combined experience of nearly 80 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes and will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that

Mr Wouter Fourie, the Project Coordinator, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a Professional Archaeologist and is accredited as a Principal

¹ **Heritage site** as used in this report refers to a place/locality where a heritage resource occurs and not a declared heritage site as contemplated by s2 of the NHRA. “s2(xviii) *heritage site*” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).

Dr Matt Lotter, acted as a Stone Age specialist and field archaeologist. He has undertaken extensive and in-depth research at several Earlier, Middle and Later Stone Age localities around southern Africa. He has also published several scientific articles with a focus on Earlier Stone Age technologies. He is registered with the Association of Southern African Professional Archaeologists (ASAPA) and has CRM accreditation within the said organisation.

Refer to **Appendix B** for CV of principal heritage practitioner.

1.3 Assumptions and Limitations

Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the development area. Various factors account for this, including the subterranean nature of some archaeological sites. As such, should any heritage features and/or objects not included in the present inventory, be located or observed, a heritage specialist must immediately be contacted.

Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question, which also applies to graves and burial grounds. In the event that any graves or burial grounds are located during the development, the procedures and requirements pertaining to graves and burials will apply as set out below.

This report contains no assessment of palaeontological resources.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation -

- i. National Environmental Management Act (NEMA) Act 107 of 1998
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- i. GNR 982 (Government Gazette 38282, 14 December 2014) promulgated under the National Environmental Management Act (NEMA) Act 107 of 1998
 - a. Basic Assessment Report (BAR) – Regulations 19 and 23
 - b. Environmental Scoping Report (ESR) – Regulation 21
 - c. Environmental Impacts Assessment (EIA) – Regulation 23
 - d. Environmental Management Programme (EMPr) – Regulations 19 and 23
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
 - a. Protection of Heritage Resources – Sections 34 to 36; and
 - b. Heritage Resources Management – Section 38
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
 - a. Section 39(3)

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority, and that an HIA will be required if a development triggers any of the development types listed in section 38 of the NHRA. Sections 34-36 further stipulates the protections afforded to structures older than 60 years, archaeological, palaeontological, meteorites, graves and burial grounds, as well as the process to be followed if these resources need to be disturbed.

In addition, the NEMA (No 107 of 1998) and the GNR 982 (Government Gazette 38282, 14 December 2014 as amended in 2017) state that, “the objective of an environmental impact assessment process is to, ... identify the location of the development footprint within the preferred site ... focussing on the geographical, physical, biological, social, economic, cultural and heritage aspects of the environment” (GNR 982, Appendix 3(2)(c), emphasis added). In accordance with legislative requirements and EIA rating criteria, the regulations of SAHRA and ASAPA have also been incorporated to ensure that a comprehensive legally compatible HIA report is compiled.

1.5 Terminology and Abbreviations

Archaeological resources

This includes -

- i. material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- ii. rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- iii. wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- iv. features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including -

- i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- ii. carrying out any works on or over or under a place;
- iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;

- iv. constructing or putting up for display signs or boards;
- v. any change to the natural or existing condition or topography of land; and
- vi. any removal or destruction of trees, or removal of vegetation or topsoil

Earlier Stone Age

The archaeology of the Stone Age, between 400 000 and 2500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance.

Holocene

The most recent geological time period which commenced 10 000 years ago.

Later Stone Age

The archaeology of the last 30 000 years, associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800s, associated with people who carried out iron working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

ABBREVIATIONS	DESCRIPTION
AIA	Archaeological Impact Assessment
ASAPA	Association of Southern African Professional Archaeologists
BA	Basic Assessment
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EIA practitioner	Environmental Impact Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Earlier Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
LSA	Later Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NEMA	National Environmental Management Act
Nemai	Nemai Consulting
NHRA	National Heritage Resources Act
PGS	PGS Heritage (Pty) Ltd
PHRA	Provincial Heritage Resources Authority
ROD	Record of Decision
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

Refer to **Appendix A** for further discussions on heritage management and legislative frameworks.

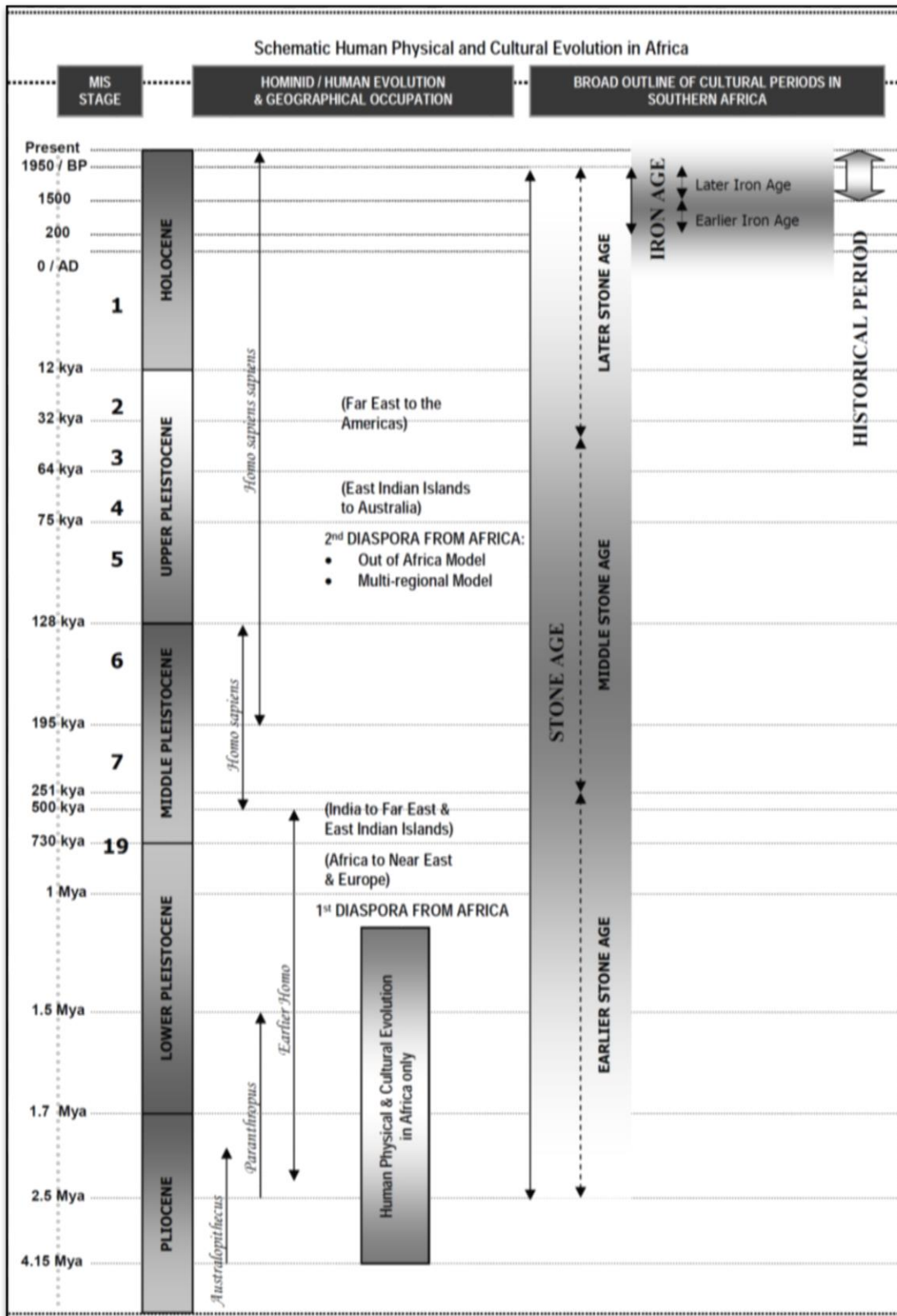


Figure 1: Human and Cultural Time line in Africa (Morris, 2008).

2 TECHNICAL DETAILS OF THE PROJECT

2.1 Project Description

The Property is Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality (Kuruman), Northern Cape Province. The application area covers 1 hectare and is located along R31 on the corner of Voortrekker Road and Hobson Street (**Figure 2**).

The proposed filling station will include 3 X 3000 litre tanks of which 2 are to be for petrol and 1 for diesel a forecourt and associated shops and restaurants (**Figure 3**).

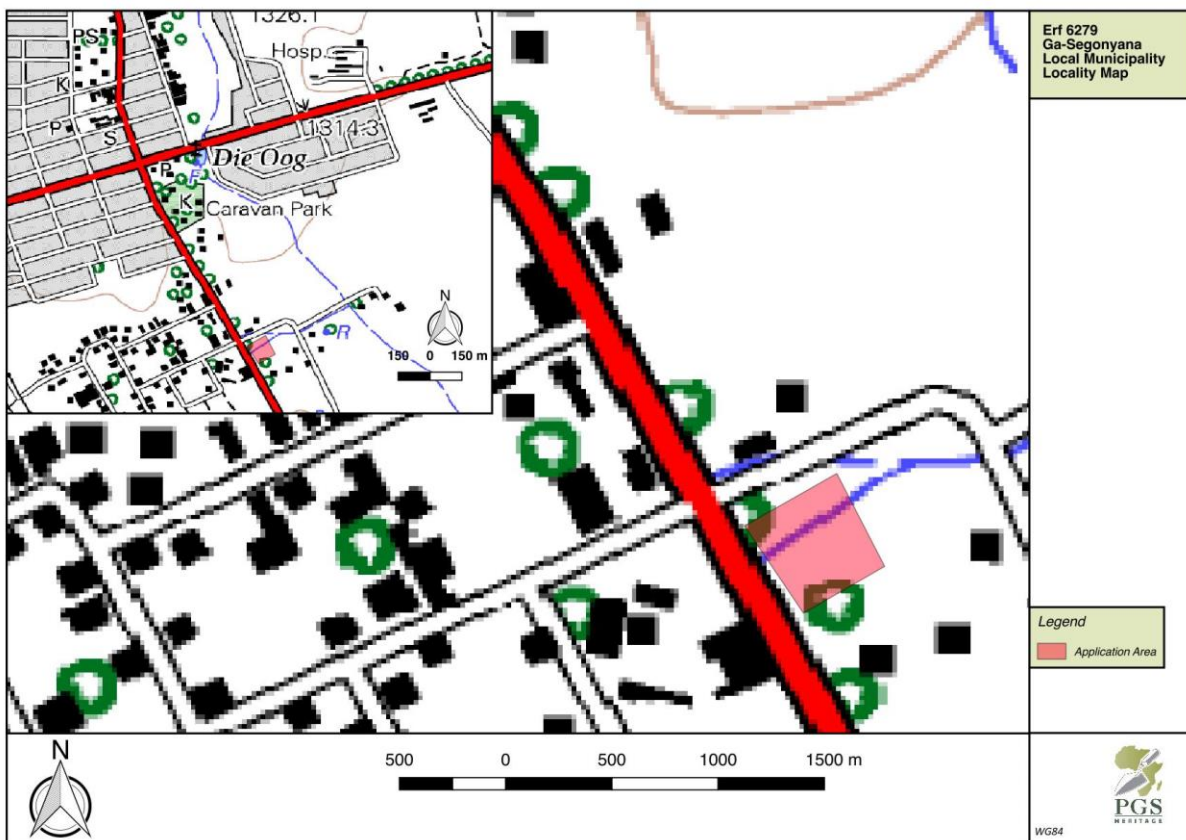


Figure 2: Site locality

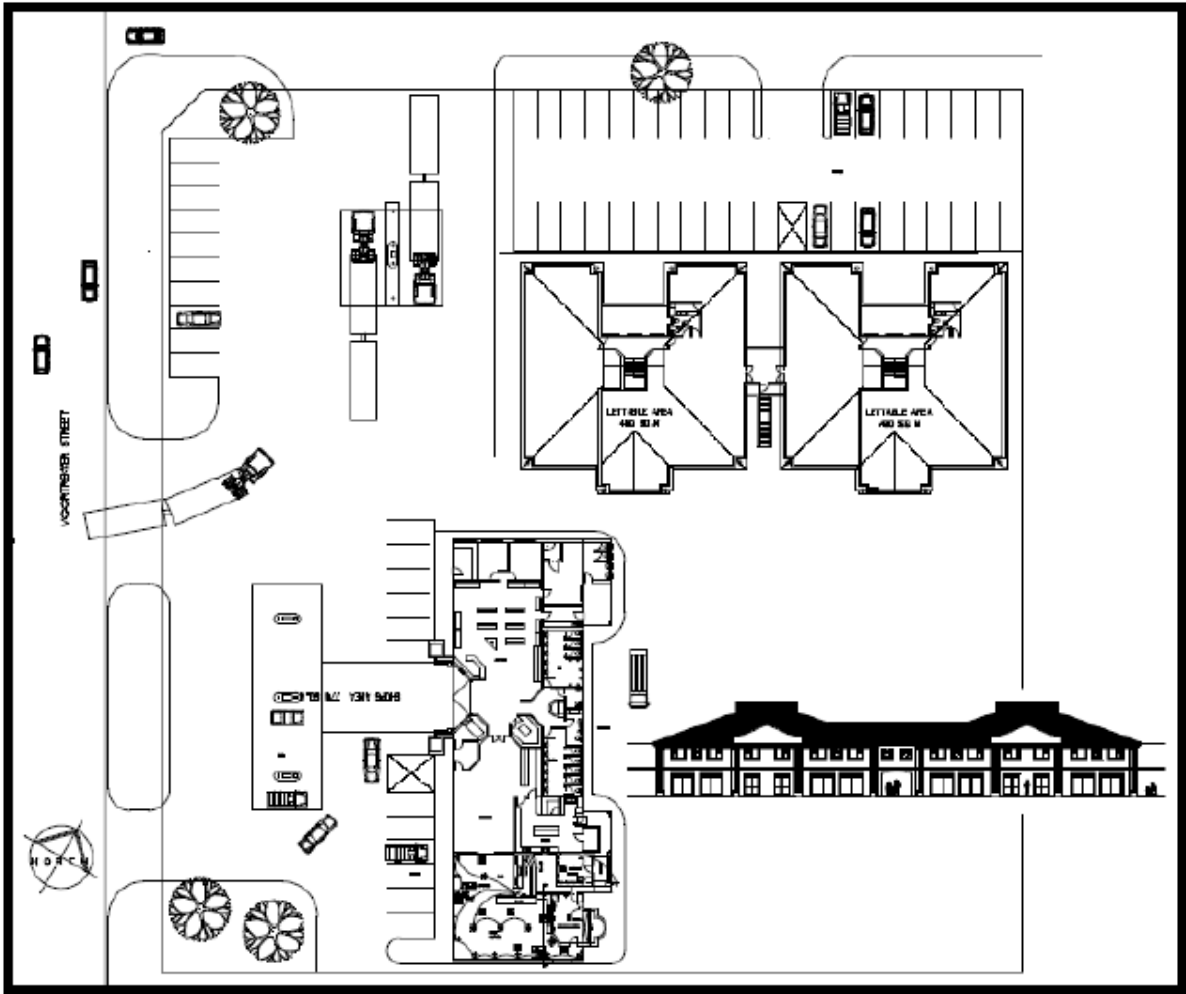


Figure 3: Layout of proposed development

2.2 Site Description

The site is characterised by dense vegetation in large parts of the eastern section of the application area. The whole erf is disturbed with dumping and an informal stopping rest area dominating the corner of Voortrekker and Hobson streets.



Figure 4 – View of dense vegetation

3 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study.

3.1 Methodology for Assessing Heritage Site Significance

The applicable maps, tables and figures are included, as stipulated in NHRA and NEMA. The HIA process consists of three steps:

Step I – Literature Review - The background information to the field survey relies greatly on the Heritage Background Research.

Step II – Physical Survey - A physical survey was conducted predominantly by vehicle and on foot along the proposed area by a qualified archaeologist, which aimed at locating and documenting sites falling within and adjacent to the proposed development footprint.

Step III – The final step involved the recording and documentation of relevant archaeological resources, the assessment of resources in terms of the HIA criteria and report writing, as well as mapping and constructive recommendations.

The significance of the identified heritage sites is based on four 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)
 - Low - <10/50m²
 - Medium - 10-50/50m²
 - High - >50/50m²
- Uniqueness; and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows -

A - No further action necessary;

B - Mapping of the site and controlled sampling required;

C - No-go or relocate development activity position;

D - Preserve site, or extensive data collection and mapping of the site; and

E - Preserve site.

Impacts on these sites by the development will be evaluated as follows –

3.1.1 Site Significance

Site significance classification standards prescribed by the SAHRA (2006) and approved by the ASAPA for the Southern African Development Community (SADC) region, were used for the purpose of this report.

Table 1: Site significance classification standards as prescribed by SAHRA.

FIELD RATING		GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National (NS)	Significance	Grade 1		Conservation; National Site nomination
Provincial (PS)	Significance	Grade 2		Conservation; Provincial Site nomination
Local Significance (LS)		Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)		Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)			High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)			Medium Significance	Recording before destruction
Generally Protected C (GP.A)			Low Significance	Destruction

3.2 Methodology for Impact Assessment

To ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the assessment criteria mentioned above. A summarised explanation of each of the qualitative descriptors, along with the equivalent quantitative rating scale for each of these criteria, is given in *Table 2*.

Table 2: Impact Assessment Criteria

CRITERIA	CATEGORIES	EXPLANATION
Overall nature	Negative	Negative impact on affected biophysical or human environment.
	Positive	Benefit to the affected biophysical or human environment.
Type	Direct	Are caused by the action and occur at the same time and place.

Spatial Extent over which impact may be experienced	Indirect or Secondary	Are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. May include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
	Cumulative	Is the impact on the environment, which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
	Site	Immediate area of activity incorporating a 50m zone which extends from the edge of the affected area.
	Local	Area up to and/or within 10km of the 'Site' as defined above.
	Regional	Entire community, drainage basin, landscape etc.
	National	South Africa.
Duration of impact	Short-term	Impact would last for the duration of activities such as land clearing, land preparation, fertilising, weeding, pruning and thinning. Quickly reversible.
	Medium-term	Impact would after the project activity such as harvesting. Reversible over time.
	Long-term	Impact would continue beyond harvesting/ extraction of the trees.
	Permanent	Impact would continue beyond decommissioning.
Severity	Low, Medium, High Negative	Based on separately described categories examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning or slightly alters the environment itself.
	Low, Medium, High Positive	
Reversibility	Completely Reversible	The impact can be completely reversed with the implementation of correct mitigation and rehabilitation measures.
	Partly Reversible	The impact can be partly reversed providing mitigation measures are implemented and rehabilitation measures are undertaken
	Irreversible	The impact cannot be reversed, regardless of the mitigation or rehabilitation measures.
Irreplaceable Loss	Resource will not be lost	The resource will not be lost or destroyed provided mitigation and rehabilitation measures are implemented.
	Resource may be partly destroyed	Partial loss or destruction of the resource will occur even though all management and mitigation measures are implemented.

Probability of occurrence	Resource cannot be replaced	The resource cannot be replaced no matter which management or mitigation measures are implemented.
	Unlikely	<40% probability.
	Possible	40% probability.
	Probable	>70% probability.
	Definite	>90% probability.
Mitigation Potential [i.e. the ability to manage or mitigate an impact given the necessary resources and feasibility of application.]	High or Completely Mitigatable	<p>Relatively easy and cheap to manage. Specialist expertise or equipment is generally not required.</p> <p>The nature of the impact is understood and may be mitigated through the implementation of a management plan or through 'good housekeeping'. Regular monitoring needs to be undertaken to ensure that any negative consequences remain within acceptable limits.</p> <p>The significance of the impact after mitigation is likely to be low or negligible.</p>
	Moderate or Partially Mitigatable	<p>Management of this impact requires a higher level of expertise and resources to maintain impacts within acceptable levels. Such mitigation can be tied up in the design of the Project.</p> <p>The significance of the impacts after mitigation is likely to be low to moderate.</p> <p>May not be possible to mitigate the impact entirely, with a residual impact(s) resulting.</p>
	Low or Unmitigatable	<p>Will not be possible to mitigate this impact entirely regardless of the expertise and resources applied.</p> <p>The potential to manage the impact may be beyond the scope of the Project.</p> <p>Management of this impact is not likely to result in a measurable change in the level of significance.</p>
Impact Significance	Negligible	-
	Low	Largely of HIGH mitigation potential, <u>after</u> considering the other criteria.
	Moderate	Largely of MODERATE or partial mitigation potential <u>after</u> considering the other criteria.
	Substantial	Largely of LOW mitigation potential <u>after</u> considering the other criteria.

4 ARCHIVAL AND DESKTOP RESEARCH FINDINGS

4.1 Historic Overview of Study Area and Surrounding Landscape

4.1.1 Aspects of the area's history as revealed by the archival/desktop study

The aim of the archival background research is to identify possible heritage resources that could be encountered during fieldwork, as summarised in **Table 3**.

The Northern Cape has a wealth of pre-colonial archaeological sites (Beaumont & Morris 1990; Morris & Beaumont 2004). Archaeological sites in the region include the world renowned long-sequence Wonderwerk Cave, the major Tswana town, and the pre-colonial stone-walled settlements of Dithakong. More locally, the two shelters on the northern and southern faces of Gamohaana (in the Kuruman Hills north west of the town) contain Later Stone Age remains and rock paintings.

Historically, Kuruman boasts one of the longest trajectories of African-colonial interaction centred on the nearly two-century old Moffat Mission, characterised by what Comaroff and Comaroff referred to as a "long conversation". Locally, the 'Eye' and the watercourse springing from it has been the focus of utilization and settlement and it was in its immediate vicinity that the town of Kuruman developed in the late nineteenth century.

The table below illustrates a sequence of events which has shaped what Kuruman is today.

Table 3: Summary of History of the study area

DATE	DESCRIPTION
Later Stone Age	<p>Stone Age sites occur in the larger geographical area, including the well-known Wonderwerk Cave in the Kuruman Hills, Tsantsabane and Doornfontein, specularite workings and a cluster of important Stone Age sites near Kathu River. Several Stone Age sites are known for the area surrounding Kuruman, as well as along the Kuruman River (Humphreys & Thackeray, 1983; Beaumont & Morris, 1990; Parsons, 2003). Some sites contain rock engravings, such as Nchwaneng and Tsineng (Beaumont & Morris, 1990; Morris, 1988, 2002, 2003, 2005).</p> <p>As the wider landscape became increasingly inhabited, the San were forced to move further west and northwest to remain in the vicinity of wild game (Snyman, 1992).</p>

AD 400 – 1100	The expansion of early farmers, who, among other things, cultivated crops, raised livestock, made ceramic containers (pots), mined ore and smelted metals, brought the Early Iron Age (EIA) to South Africa. They settled in semi-permanent villages (De Jong 2010: 35).
from 15th century	The Highveld became active again due to a gradually warmer and wetter climate. From here communities spread to other parts of the interior. This later phase, termed the Late Iron Age (LIA), was accompanied by extensive stonewalled settlements, such as the Thlaping capital Dithakong, 40 km north of Kuruman (De Jong 2010: 35-36).
<p>Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called ‘first people’. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is known as the Ceramic Late Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan (De Jong 2010: 36).</p>	
end of the 17th century	The Tlharo seems to have been the first Tswana group to enter the Kuruman area. They originated from the Hurutshe group further to the north-east. The Tlharo moved in a southern direction down the Molopo River. Their early settlements included Khuis, Madibeng, Heuningvlei, Langeberg and Tsineng (Snyman, 1992).
During the mid-1700s	The second important Tswana group from the wider area is the Tlhaping. They originated from the Rolong group. The Tlhaping moved southward along the Harts and Vaal Rivers to the edge of the Kalahari Desert. The Tlhaping established a capital on a perennial river known as Nokaneng. Their ruler during this time was King Maswe. The exact locality of Nokaneng is not known.
1775	During the reign of Molehabangwe, who had succeeded his father Maswe, a confederation was formed which consisted of a stratified society comprised of the Tlhaping, Rolong, Tlharo, Kgalagadi and San groups. While the Tlhaping was seen as the ruler class, the Kgalagadi and San were viewed as vassals (Snyman, 1992).

1770	The Tlhaping conducted extensive trading activities with the Korana to the south and the Tswana to the north. Some of the Korana groups crossed the Orange River and came to the land of the Tlhaping. Although the initial contact was peaceful, conflict soon erupted.
approximately 1790	The better-armed Korana managed to force the Tlhaping out of the area. This move was further augmented by the fact that the Nokaneng River had dried up.
1801	PJ Truter's and William Somerville journey into Southern Africa reached Dithakong at Kuruman.
1805	While on their way to the Kuruman River, Lichtenstein and his fellow travellers visited a small settlement consisting of, "...about thirty flat spherical huts." Although the people who stayed 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's party subsequently travelled further north to visit the capital of King Mulihawang located on a plain in the vicinity of the Kuruman River. He described the town as consisting of six hundred houses with 5000 inhabitants. The individual dwellings were described as follows: "The houses were all of a circular form, with the roof running up to a point; the roof rests on a circle of poles, which are united together below by thin walls of loam; above, for a little way below the roof, they are left open to admit light and air." (Lichtenstein, 1930:373). Lichtenstein also indicated that hedges were used as cattle enclosures.
1817	James Read established a London Mission Society station near Kuruman.
1820	Robert Moffat and his wife Mary came to Kuruman. Since then the mission station has been known as The Moffat Mission Station.
1820	Campbell noted on his visit to Nokaneng and Kuruman that the reivers had dried up, and deep wells in the river bed supplied salt water (1922:Vol. II:125).

The Tlhaping first moved to Kathu and then to Ga-Mopedi on the Kuruman River to eventually established themselves at Dithakong on the Moshaweng River (Snyman, 1992).



Figure 5 – “Tlhaping women cultivating gardens and singing” One of the sketches appearing in Dr. Andrew Smith’s journal (Lye, 1975:171).

1819

Reverend Robert Moffat first arrived in the Kuruman area. He found the Tlhaping settled at Maropin in the Kuruman Valley under their ruler Mothibi. They subsequently moved upstream to the vicinity of present-day Kuruman. During the same time Moffat found the BaTlharo established at Tsening.

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18th century and effectively ended with the settlement of white farmers in the interior. This period, known as the difaqane or Mfecane. Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwana and Phuting tribal groups.

1835

In the vicinity of Tsineng, Smith found a number of springs which the local people called Malichana. He observed a small group of Tswanas (Bituanas) as well as a Griqua family staying near the springs. The Tswana group conducted agricultural activities in gardens laid out near the springs. From Tsineng,

	Smith's party travelled all along the bank of the Kuruman River, presumably to the confluence of the Ga-Mogara River (Lye, 1975).
23 March 1885	Britain declared a Protectorate over Bechuanaland and the Kalahari.
30 September 1885	The Protectorate was divided into two parts. The area north of the Molopo River remained the Bechuanaland Protectorate and up to 1895 was administered from Vryburg.T. The area south of the Molopo became the Crown Colony of British Bechuanaland with its capital at Vryburg (Tlou & Campbell, 1997). the town of
November 9 1895	In accordance with Act 31 of 1895 the area south of the Molopo River, namely British Bechuanaland, was included in the Cape Colony.
4 May 1895	Many so-called native reserves including the Lower Kuruman Native Reserve were established by virtue of Bechuanaland Proclamation No. 220 of 1895. At this time, it had a population of 5425, and was 225 square miles in extent. With time, the population density and livestock numbers increased drastically so much so that a number of black people were residing outside the boundaries of the reserve. As a result of these pressures the size of the reserve was subsequently extended.

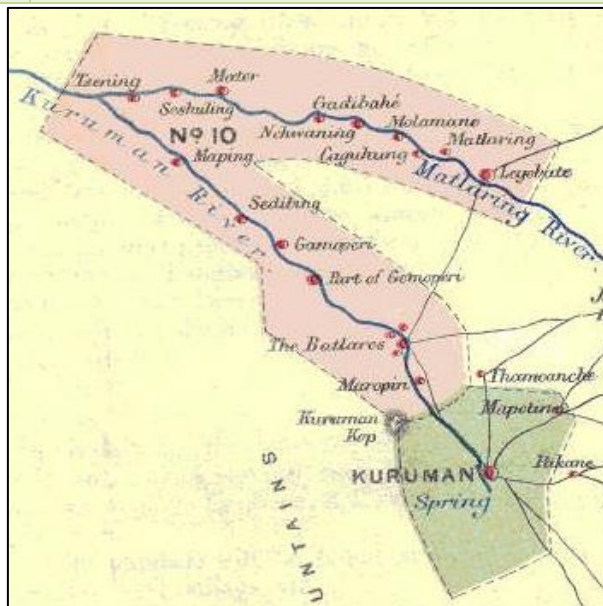


Figure 6 – Map showing the original demarcation of the Lower Kuruman Native Reserve.

1836	The Great Trek of the Boers from the Cape brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society.was
1860s-1870s	The conflict between Boer and Tswana communities escalated when the Korana and Griqua communities became involved and later also the British government.
1897	Although some white farmers did travel down the Kuruman River to settle in the vicinity of Boeredraai during the latter part of the 19th century, by 1897 most of them had moved away again.
1916	Establishment of the location which is now referred to as the “Old Location” within the buffer zone between Kuruman and Wrenchville (Snyman, 1992). The remains of which can be seen on Google earth. The present day hospital has built over parts of the old location.
1918	The move of the African inhabitants of the Gasegonyane settlement near the Eye to the “Old Location” was completed. With the help of Henry Wrench, a lawyer, the coloured community established a separate settlement east of the African location. This settlement became known as Wrenchville in the 1960s.
1938	The “new location was established (Snyman, 1992).
1952	The Group Areas Act passed
1958	Population in the New location was high and service delivery poor. Relocation of the community to Mothibistad began and desired buffer zone of 1.6 km between Kuruman and trust ground was established.
1959	A whole village was constructed on the farm, and the Hotazel mine was officially opened
1964	The community of the “New Location” completely relocated to Mothibistad.

4.2 Previous Archaeological and Heritage Research Studies Undertaken within the Study Area

A search of the SA Heritage Resources Information System (SAHRIS) database identified only two HIA reports for the study area and general surrounding town. The details of the heritage resources identified in the different reports are provided below, in ascending order:

- **A Report on Archaeological Impact Assessments (AiA's) for Proposed Housing Developments On Erven 83 and 2467, Kuruman, in the Northern Cape. (Pelser, 2012)**

This study records an archaeological survey of a property located in the north western section of Kuruman some 1.5km to the northwest of the current study area. The two properties were characterised by historical houses and structures most probably older than 100 years.

- **Archaeological Impact Assessment Report for the proposed Metals Industrial Cluster near Kuruman, Northern Cape (Van der Walt, 2016)**

This study records an archaeological survey of a property located some 1.5km to the northeast of the current study area. Only recent historic semi-permanent structures were found in the study.

5 FIELD WORK FINDINGS

Due to the nature of cultural remains, with the majority of artefacts occurring below the surface, a controlled-exclusive surface survey was conducted over a period of one day, on foot and by vehicle, by one archaeologist from PGS. The fieldwork was conducted on the 2nd of June 2017.

The track logs (in blue) for the survey are indicated on the map below (**Figure 7**).

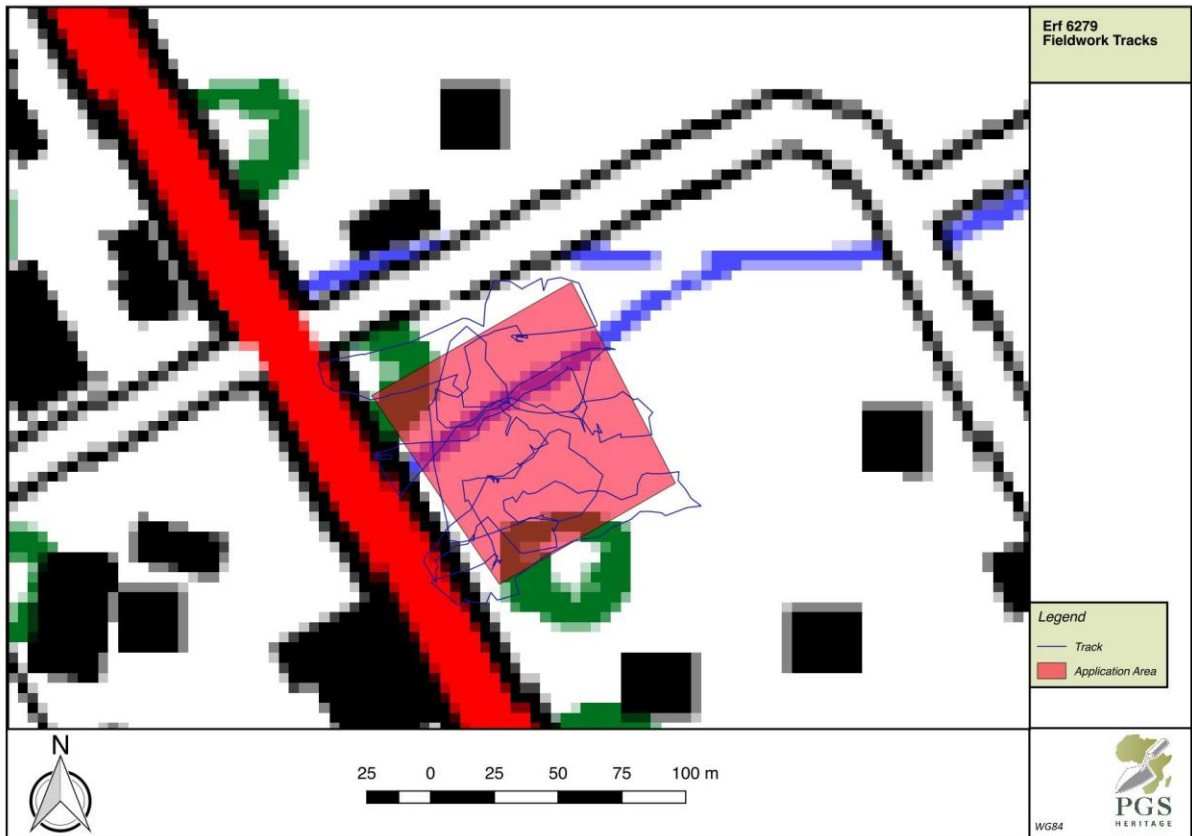


Figure 7 - Map indicating track logs (blue) of the fieldwork undertaken

5.1 Heritage Findings

The property was surveyed by an archaeologist of PGS on the 2nd of June 2017. The site was found to be disturbed in the north-western, western and southwestern sections while the rest of the site to the east was densely vegetated. The area covered by the archaeologist was tracked with a GPS as can be seen in **Figure 7**.

No heritage or archaeological sites were identified within the proposed project area.

6 OVERALL IMPACT EVALUATION

The study has identified that the proposed project activities will not have an impact on heritage resources as no heritage or archaeological resources were identified in the project area.

6.1 Status Quo and “No Go” Areas

6.1.1 Status Quo

No heritage or archaeological sites were identified within the proposed development area for the pipeline route alternatives.

6.1.2 “No go” Areas

There are no areas considered to be “no go” areas and no further mitigation is required.

6.2 Project Impact (Unmitigated)

Since no heritage sites were identified, no impacts are expected to occur to heritage resources as a result of the project. However, there is a possibility that construction activities, such as topsoil stripping, excavations and vegetation clearing could uncover chance finds of heritage resources previously unidentified.

The combined weighted project impact to the heritage resources (prior to mitigation) will probably be of a low to negligible significance.

No mitigation measures are required unless chance finds of heritage resources are uncovered.

6.3 Cumulative Impact

Since no heritage resources were identified, the baseline impacts are considered to be low to insignificant and additional project impacts (if no mitigation measures are implemented) are not expected to increase the significance of the existing baseline impacts.

7 SUMMARY IMPACT ASSESSMENT TABLE

POTENTIAL IMPACTS (in order of impact as described in Impact Matrix)	ASPECT (refer to Impact Matrix)	Nature	Type	Extent	Duration	Severity	Reversibility	Irreplaceable Loss	Probability	MITIGATION POTENTIAL	IMPACT SIGNIFICANCE		MITIGATION MEASURES
											Without Mitigation	With Mitigation	
CONSTRUCTION PHASE													
Impacts on archaeological sites – chance finds	Heritage Resources	Negative	Direct	Site	Permanent	Low	Irreversible	Resource cannot be replaced	Unlikely	High	Low	Low	Refer to Section 8
Impact on burial grounds – chance finds	Heritage Resource	Negative	Direct	Site	Permanent	High negative	Irreversible	Resource cannot be replaced	Unlikely	Moderate or Partially Mitigatable	High	Low	Refer to Section 8

8 HERITAGE MANAGEMENT GUIDELINES

8.1 General Management Guidelines

1. The NHRA (Act 25 of 1999) states that, any person who intends to undertake a development categorised as-
 - (a) the construction of a road, wall, transmission line, 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 m² 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 m² in extent; or
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

In the event that an area, previously not included in an archaeological or cultural resources survey is to be disturbed, the SAHRA needs to be contacted. An enquiry must be lodged with them into the necessity for an HIA.

2. In the event that a further heritage assessment is required it is advisable to utilise a qualified heritage practitioner, preferably registered with the Cultural Resources Management Section (CRM) of the Association of Southern African Professional Archaeologists (ASAPA).

This survey and evaluation must include:

- (a) The identification and mapping of all heritage resources in the area affected;
- (b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7 of the National Heritage Resources Act;
- (c) An assessment of the impact of the development on such heritage resources;
- (d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

- (f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
 - (g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.
3. It is advisable that an information section on cultural resources be included in the SHEQ training given to contractors involved in surface earthmoving activities. These sections must include basic information on:
- a. Heritage;
 - b. Graves;
 - c. Archaeological finds; and
 - d. Historical Structures.

This module must be tailor made to include all possible finds that could be expected in that area of construction.

Possible finds include:

- a. Open air Stone Age scatters, disturbed during vegetation clearing. This will include stone tools.
 - b. Palaeontological deposits such as bone, and teeth in fluvial riverbank deposits.
4. In the event that a possible find is discovered during construction, all activities must be halted in the area of the discovery and a qualified archaeologist contacted.
5. The archaeologist needs to evaluate the finds on site and make recommendations towards possible mitigation measures.
6. If mitigation is necessary, an application for a rescue permit must be lodged with SAHRA.
7. After mitigation, an application must be lodged with SAHRA for a destruction permit. This application must be supported by the mitigation report generated during the rescue excavation. Only after the permit is issued may such a site be destroyed.
8. If during the initial survey sites of cultural significance are discovered, it will be necessary to develop a management plan for the preservation, documentation or destruction of such a site. Such a program must include an archaeological/palaeontological monitoring programme, timeframe and agreed upon schedule of actions between the company and the archaeologist.
9. In the event that human remains are uncovered, or previously unknown graves are discovered, a qualified archaeologist needs to be contacted and an evaluation of the finds made.
10. If the remains are to be exhumed and relocated, the relocation procedures as accepted by SAHRA need to be followed. This includes an extensive social consultation process.

Table 4: Roles and responsibilities of archaeological and heritage management when heritage resources are discovered during construction

ROLE	RESPONSIBILITY	IMPLEMENTATION
A responsible specialist needs to be allocated and should attend all relevant meetings, especially when changes in design are discussed, and liaise with SAHRA.	The client	Archaeologist and a competent archaeology support team
If chance finds and/or graves or burial grounds are identified during construction or operational phases, a specialist must be contacted in due course for evaluation.	The client	Archaeologist and a competent archaeology support team
Comply with defined national and local cultural heritage regulations on management plans for identified sites.	The client	Environmental Consultancy and the Archaeologist
Consult the managers, local communities and other key stakeholders on mitigation of archaeological sites, when discovered.	The client	Environmental Consultancy and the Archaeologist
Implement additional programs, as appropriate, to promote the safeguarding of our cultural heritage. (i.e. integrate the archaeological components into the employee induction course).	The client	Environmental Consultancy and the Archaeologist,
If required, conservation or relocation of burial grounds and/or graves according to the applicable regulations and legislation.	The client	Archaeologist, and/or competent authority for relocation services
Ensure that recommendations made in the Heritage Report are adhered to.	The client	The client
Provision of services and activities related to the management and monitoring of significant archaeological sites (when discovered). The client with the specialist needs to agree on the scope and activities to be performed	The client	Environmental Consultancy and the Archaeologist
When a specialist/archaeologist has been appointed for mitigation work on discovered heritage resources, comprehensive feedback reports should	Client and Archaeologist	Archaeologist

be submitted to relevant authorities during each phase of development.

8.2 All phases of the project

8.2.1 Archaeology

The project will encompass a range of activities during the construction phase, including ground clearance, establishment of construction camps area.

It is possible that cultural material will be exposed during operations and may be recoverable, but this is the high-cost front of the operation, and so any delays should be minimised. Development surrounding infrastructure and construction of facilities results in significant disturbance, but construction trenches do offer a window into the past and it thus may be possible to rescue some of the data and materials. It is also possible that substantial alterations will be implemented during this phase of the project and these must be catered for. Temporary infrastructure is often changed or added to during the subsequent history of the project. In general, these are low impact developments as they are superficial, resulting in little alteration of the land surface, but still need to be catered for.

During the construction phase, it is important to recognise any significant material being unearthed, and to make the correct judgment on which actions should be taken. In the event that possible heritage resources are identified a qualified archaeologist/palaeontologist must be contacted to evaluate the finds and make recommendations on the mitigation required.

In addition, feedback reports can be submitted by the archaeologist to the client and SAHRA to ensure effective monitoring. This archaeological monitoring and feedback strategy should be incorporated into the Environmental Management Plan (EMP) of the project. Should an archaeological/palaeontological site or cultural material be discovered during construction (or operation), such as graves or burial grounds, the project needs to be able to call on a qualified expert to make a decision on what is required and if it is necessary to carry out emergency recovery. SAHRA would need to be informed and may give advice on procedure. The developers therefore should have some sort of contingency plan so that operations could move elsewhere temporarily while the material and data are recovered. The project thus needs to have an archaeologist/palaeontologist available to do such work. This provision can be made in an archaeological monitoring programme.

In the case where archaeological material is identified during construction the following measures must be taken:

- Upon the accidental discovery of archaeological material, a buffer of at least 20 meters should be implemented.
- If archaeological material is accidentally discovered during construction, activities must cease in the area and a qualified archaeologist be contacted to evaluate the find. To remove the material permit must be applied for from SAHRA under Section 35 of the NHRA.

8.2.2 Graves

In the case where a grave is identified during construction the following measures must be taken:

- Upon the accidental discovery of graves, a buffer of at least 50 meters should be implemented.
- If graves are accidentally discovered during construction, activities must cease in the area and a qualified archaeologist be contacted to evaluate the find. To remove the remains a permit must be applied for from SAHRA (Section 36 of the NHRA) and other relevant authorities (National Health Act and its regulations). The local South African Police Services must immediately be notified of the find.
- Where it is recommended that the graves be relocated, a full grave relocation process that includes comprehensive social consultation must be followed.

The grave relocation process must include:

- i. A detailed social consultation process, that will trace the next-of-kin and obtain their consent for the relocation of the graves, that will be at least 60 days in length;
- ii. Site notices indicating the intent of the relocation;
- iii. Newspaper notices indicating the intent of the relocation;
- iv. A permit from the local authority;
- v. A permit from the Provincial Department of Health;
- vi. A permit from the South African Heritage Resources Agency, if the graves are older than 60 years or unidentified and thus presumed older than 60 years;
- vii. An exhumation process that keeps the dignity of the remains intact;
- viii. The whole process must be done by a reputable company that is well versed in relocations;

The exhumation process must be conducted in such a manner as

9 CONCLUSIONS AND RECOMMENDATIONS

PGS was appointed by Kalara to undertake an HIA that forms part of the BA Report for the proposed Construction of a Filling Station and Associated Facilities On Erf 6279, District Municipality of John Taolo Gaetsewe District, Ga-Segonyana Local Municipality Northern Cape Province.

No heritage sites were identified within the proposed development area.

No mitigation measures and permits are therefore required and there are “no go” areas identified.

However, should any chance finds of heritage sites and/or objects be located or observed, a heritage specialist must immediately be contacted and the General Management guidelines will apply (Refer to Section 8 for guidelines).

10 PREPARERS

Wouter Fourie – Principal Heritage Specialist

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11.3 Archival Records

NTS, 7752, 22/335

11.4 Archival Maps

National Archives, Maps, 2/1085

National Archives, Maps, 3/302

National Archives, Maps, 3/533

11.5 Google Earth

All the aerial depictions used in this report are from Google Earth.

LEGISLATIVE REQUIREMENTS – TERMINOLOGY AND ASSESSMENT CRITERIA**1 General principles**

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and paleontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the NHRA, permits are required to damage, destroy, alter, or disturb them. People who already possess material are required to register it. The management of heritage resources is integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a formal burial ground (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have an interest in the graves - they should be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle are to be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the construction company's cost. Thus, the construction company will be able to proceed without uncertainty about whether work will have to be stopped if an archaeological or heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32) it is stated that -

An object or collection of objects, or a type of object or a list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including –

- objects recovered from the soil or waters of South Africa, including archaeological and paleontological 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;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives; and
- any other prescribed category.

Under the National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection to, all historic and pre-historic cultural remains, including graves and human remains.

2 Graves and burial grounds

Graves younger than 60 years fall under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are under the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

Graves older than 60 years, but younger than 100 years, fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are under the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal burial ground administered by a local authority.

Graves in the category located inside a formal burial ground administered by a local authority will also require the same authorisation as set out for graves younger than 60 years, over and above SAHRA authorisation.

If the grave is not situated inside a formal burial ground but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the burial ground authority must be adhered to.

CURRICULUM VITAE OF TEAM

WOUTER FOURIE

Professional Heritage Specialist and Professional Archaeologist and Director PGS Heritage

Summary of Experience

Specialised expertise in Archaeological Mitigation and excavations, Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including *inter alia* -

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave “rescue” excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments, within South Africa, including -

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects
- Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring
- Involvement with various Heritage Impact Assessments, outside South Africa, including -
 - Archaeological Studies in Democratic Republic of Congo
 - Heritage Impact Assessments in Mozambique, Botswana and DRC
 - Grave Relocation project in DRC

Key Qualifications

BA [Hons] (Cum laude) - Archaeology and Geography - 1997

BA - Archaeology, Geography and Anthropology – 1996

MPhil – Conservation of the Built Environment - Current

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

CRM Accreditation (ASAPA) -

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Accredited with Amafa KZN
- Field Supervisor – Colonial Period and Stone Age

Key Work Experience

2003- current - Director – PGS Heritage (Pty) Ltd

2007 – 2008 - Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand

2005-2007 - Director – Matakoma Heritage Consultants (Pty) Ltd

2000-2004 – CEO – Matakoma Consultants

1998-2000 - Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998 - Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

Worked on various heritage projects in the SADC region including, Botswana, Mozambique and the Democratic Republic of the Congo