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EXECUTIVE SUMMARY

Ages Limpopo (Pty) Ltd contracted the author to survey the proposed area for proposed agricultural cropland development and produce a scoping report for a Phase 1 heritage study to advise on potential impacts and mitigation measures. The proposed development is located approximately 25km north east of Polokwane, along the R81 on the remainder and portion 2 of the farm Maroelaknop 844 LS. The total area comprises approximately 450ha.

Survey was conducted on foot and aided by a security guard Joshua Potgieter who grew up on farms near the present project and knows the area well. Open areas and areas considered to yield potential heritage resources were carefully surveyed, by Ms L Stegmann on 2 April 2021, from early morning to late afternoon.

A grave area and a historic residential area were recorded during survey and mitigation measures are required.

It is unknown which community the graves belong to and will need to be addressed during public participation, if next of kin family is not located in this manner, it will require advertising to trace the family and to procure the needed permits to move the graves if this is required due to developmental impacts. If re-interment is not needed it is recommended to fence the area and leave the graves undisturbed.

The historical residential area, consists of a number of ruins from various times through the farm's occupation. Most recent is a house built in the 1970's, not protected, and a number of earlier houses that have since been demolished and only a small amount of building rubble and a few foundations remain. An exact date could not be determined, but the ruins are over 60 years old. Regardless, they are protected by NHRA Act 25 of 1999, and will require a permit if demolition is sought. It is however recommended that the ruins remain *in situ*.

Should the recommendations and mitigation measures be accepted, then from a heritage resources point of view, we have no objection to the development taking place.

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1. INTRODUCTION AND TERMS OF REFERENCE

Application purpose: Proposed new agricultural croplands development
Area: Polokwane/ Sebayeng

Size: 450ha

GPS: 4 point

S23° 45' 04.7" E29° 40' 33.6"
S23° 43' 57.9" E29° 39' 58.1"
S23° 43' 38.5" E29° 42' 27.4"
S23° 44' 18.3" E29° 41' 52.0"

Map reference number: 2329 DA

This report will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on heritage resources.

In terms of the National Heritage Resources Act (1999) the following is of relevance:

Historical remains

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeological remains

Section 35(4) 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

Burial grounds and graves

Section 36 (3)(a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

(c) 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; or

(b) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

Culture resource management

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

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

***‘development’** 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-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

****‘place** means a site, area or region, a building or other structure* ...”

****‘structure** means any building, works, device or other facility made by people and which is fixed to the ground, ...”

2. METHOD

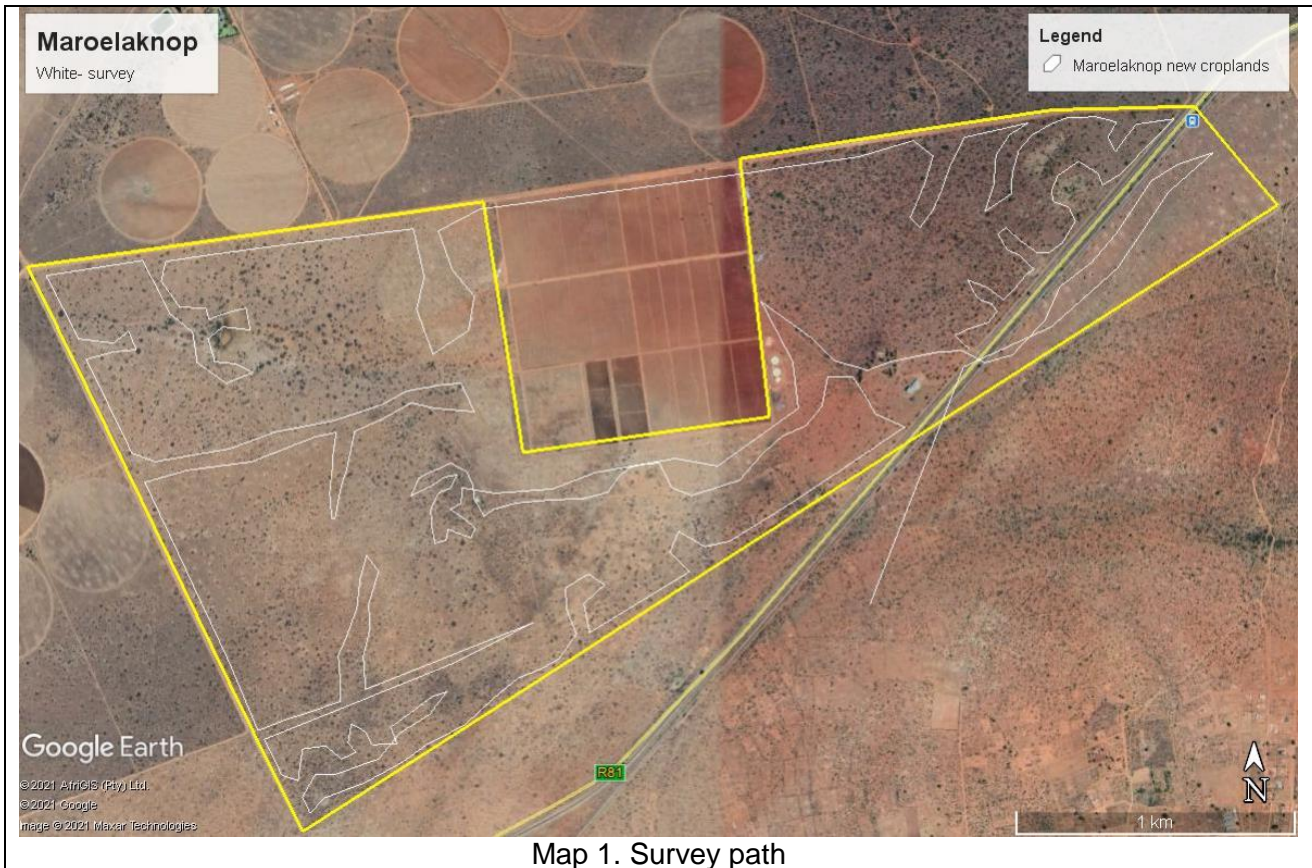
2.1 Sources of information and methodology

The source of information was primarily the field reconnaissance and referenced literary sources.

A pedestrian survey of the area was undertaken, during which standard methods of observation were applied. The area was surveyed on 2 April 2021 by Ms L Stegmann.

Special attention given to any areas displaying soil and or vegetative changes, as well as areas considered to yield potential heritage resources. As most archaeological material occurs in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion. Locations were marked using Google map drop pin technology, correct to 3 meters.

Survey map below, document survey paths taken by the fieldworker.



2.2 Limitations

The scoping survey was thorough, but limitations were experienced due to the fact that archaeological sites are subterranean and only visible when disturbed. Vegetation was moderate to sparse and visibility fair. Due to the size, it is not possible to cover every square meter. Areas indicative of potential yield were carefully traversed; others were spot checked.

2.2 Categories of significance

Level	Details	Action
National (Grade 1)	Site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade 2)	Site is considered to be of Provincial Significance	Nominated to be declared by Provincial Heritage Authority
Local Grade 3A	Site is considered to be of HIGH significance locally	Site should be retained as a heritage site
Local Grade 3B	Site is considered to be of HIGH significance locally	The site should be mitigated and part retained as a heritage site
Generally Protected A	High to Medium significance	Mitigation necessary before destruction
Generally Protected B	Medium significance	Site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording before destruction

The above colour coding's will be used in the results of the survey section (4)

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.

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. Many aspects must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

2.4 Terminology

- Early Stone Age:** Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.
- Middle Stone Age:** Various lithic industries in SA dating from ± 250 000 yr. - 30 000 yrs. before present.
- Late Stone Age:** The period from ± 30 000-yr. to contact period with either Iron Age farmers or European colonists.
- Early Iron Age:** Most of the first millennium AD
- Middle Iron Age:** 10th to 13th centuries AD
- Late Iron Age:** 14th century to colonial period. *The entire Iron Age represents the spread of Bantu speaking peoples.*
- Historical:** Mainly cultural remains of western influence and settlement from AD1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA, though more recent remains can be termed historically significant should the remains hold social significance for the local community.
- Phase 1 assessment:** Scoping surveys to establish the presence of and to evaluate heritage resources in a given area
- Phase 2 assessments:** In depth culture resources management 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.
- Sensitive:** Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious

places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

3. DESCRIPTION OF THE PROPOSED DEVELOPMENT AND TERRAIN

Vegetation: The dominant vegetation type of the research area is Polokwane Plateau Bushveld (SvCB 23). (Mucina and Rutherford: 2006).

The eastern flatlands fall within the Polokwane Plateau Bushveld, previously known as Pietersburg Plateau False Grasslands (Acocks: 1998). This vegetation type is evident on undulating plains and is characterised by a short open tree layer, predominantly *Acacia* species and a well-developed grass layer (Mucina and Rutherford: 2006).

Geology: Migmatites and gneisses of the Hout River Gneiss and the Turfloop Granite (both of Randian Erathem) are dominant.

Terrain: The terrain is generally flatlands with a central northern section used for croplands. Croplands from other farms are evident to the west, north and east of the proposed area. Sebayeng village with associated residential development lies to the south. The wider area is traversed by a railway line and the R81.

Proposed development: Agricultural cropland development



Fig 1: View of area – eastern area



Fig 2. View of area north eastern area



Fig 3. View of area – north western area



Fig 4. View of area – small dam western area



Fig 5. View of area – south west area- security accompanied fieldworker



Fig 6. View of area – historical residential area, south central area

4. RESULTS OF THE SCOPING SURVEY AND DISCUSSION

A. General site description: MK844/01

Graves and midden deposit

1. At least 20 graves were recorded. The graves are a mix of marked with headstones and marked with heaped soil, no headstone.
2. The graves are maintained, as the area had been weeded recently.
3. The area is surrounded with midden deposit, but no stone walling. No historical period foundations could be located.
4. The area is indicated by A marlotti, an indicator species of vegetation of Late Iron Age sites on the Polokwane Plateau, however the sites usually display stone walling.

GPS:

S23° 44' 54.7" E29° 40' 38.5" graves
 S23° 44' 55.4" E29° 40' 37.6" midden

B. Site evaluation

B1. Heritage value

	Yes	No
<u>Historic value</u>		
It has importance to the community or pattern of South Africa's history or precolonial history.	X	
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.	X	
It has significance relating to the history of slavery in South Africa.		X
<u>Aesthetic value</u>		

It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.		X	
Scientific value			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.		X	
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.		X	
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.	Partially		
Social value			
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).	X		
Tourism value			
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.		X	
Rarity value			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.		X	
Representative value			
It is important in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.		X	
B2. Regional context			
Other similar sites in the regional landscape.	X		
B3. Condition of site			
Integrity of deposits/structures.	In good condition		
C. Sphere of significance	High	Medium	Low
International			X
Provincial			X
Local			X
Specific community	X		
D. 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]			X
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
E. General statement of site significance			
Low			
Medium			
High			X
F. Rating of potential impact of development			
None			
Peripheral			X
Destruction			
Uncertain			
G. Recommended mitigation – Tracing of descendants and consultation. It is recommended that the area be excluded and fenced to protect the graves and occupation area. A substantial buffer zone is recommended as per Map 3 to protect heritage resources and potential heritage resources associated with the graves			
H. Applicable legislation and legal requirements- National Heritage Resources Act (Act No. 25 of 1999, Section 36)			
I. Images			



Fig 7. Graves with headstones



Fig 8. Graves no headstones



Fig 9. Midden deposit

A. General site description: MK844/02			
Historical residential area			
1. 1 house built in the mid 1970's was recorded. The house has been robbed of building materials, but is not older than 60 years and thus not protected.			
2. Ruins of at least 2 other residential buildings, displaying earlier building styles, especially with regards to bricks used was recorded in the area. Only foundations and sections of fallen walls are evident on the landscape.			
3. The farm manager mentioned a well that is over 100 years old, however this could not be located at the time of survey despite fervent searching for it, mainly due to the vegetation growth, after good summer rains, in this section of the farm.			
GPS:			
S23° 44' 25.0" E29° 40' 54.1" general central GPS			
B. Site evaluation			
B1. Heritage value		Yes	No
<u>Historic value</u>			
It has importance to the community or pattern of South Africa's history or precolonial history.		partially	
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.			X
It has significance relating to the history of slavery in South Africa.			X
<u>Aesthetic value</u>			
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.			X
<u>Scientific value</u>			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			X
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.			X
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.		Partially	
<u>Social value</u>			
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).			X
<u>Tourism value</u>			
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.			X
<u>Rarity value</u>			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			X
<u>Representative value</u>			
It is important in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			X
B2. Regional context			
Other similar sites in the regional landscape.		X	
B3. Condition of site			
Integrity of deposits/structures.		Poor	
C. Sphere of significance		High	Medium
International			X
Provincial			X
Local			X
Specific community			X
D. 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]		X	
Generally Protected C [Low significance, no further action]			
E. General statement of site significance			
Low		X	

Medium	
High	
F. Rating of potential impact of development	
None	
Peripheral	
Destruction	X
Uncertain	
<p>G. Recommended mitigation – It is recommended that the area be cordoned off and fenced, if possible. Should the area be required, it is recommended that the area be recorded, especially with regard to changing building styles and samples be donated to Polokwane Museums for possible later research. As the buildings have already basically been destroyed over the years, it is the building material composition that is of significance. The location of the well needs to be firmly established, and once established, fenced accordingly and preserved.</p>	
<p>H. Applicable legislation and legal requirements- National Heritage Resources Act (Act No. 25 of 1999)</p>	

I. Images



Fig 10. Remnants of a residential building



Fig 11. Remnants of a residential building (2)

5. BACKGROUND ON THE AREA

INTANGIBLE HERITAGE BACKGROUND

Apartheid history:

The university of Limpopo was one of the main Apartheid struggles areas around Polokwane. Uprisings were attempted during the 1960's, 70's and 80's. The main proponents were the Mankweng Civic Association, Mankweng Youth Organization, COSAS and AZASO, who were especially active during the 1980's.

Socio-religious History:

Sovenga Hill at the entrance to the campus is among the main hills used for ritual and religious activities on the Polokwane Plateau. Sovenga Hill, along with Bambo Hill and the Moletji Hills are known to have been used for rain-making purposes in the past, as well as being used for prayer during the present.

Farming heritage:

The wider area is congruent with agriculture in the Polokwane area. Mills and windmills are still evident on the wider landscape.

HISTORICAL HERITAGE BACKGROUND

The study area lies 15km due north of the University of Limpopo. The University Education Act of 1959 made provision for the establishment of racially exclusive universities for black South Africans. Under the provisions of the Act, the University College of the North was established on 01 August 1959. The College was placed under the academic trusteeship of the University of South Africa. This relationship was maintained until the South African Parliament promulgated the University of the North Act (Act No. 47 of 1969) thus bringing to an end the College status as of 01 January 1970.

On 1 January 2005, the University of the North and the Medical University of South Africa (MEDUNSA) merged. These institutions formed the Turfloop and MEDUNSA campuses of the university, respectively. In 2015 the MEDUNSA campus split, resulting in the establishment of the University of Limpopo.

BUILT ENVIRONMENT BACKGROUND

The wider area around the study area is characterized by agriculture related buildings, remnants of old farmhouses, where these still exist, mills and windmills and water reservoirs. Train stations are also dotted along the railway line from Polokwane, used to transport agricultural goods.

Historically important buildings are located 25km away in Polokwane and 15km away at the University of Limpopo.

IRON AGE HERITAGE BACKGROUND

According to the most recent archaeological cultural distribution sequences by Huffman (2007), this area falls within the distribution area of various cultural groupings originating out of both the Urewe Tradition (eastern stream of migration) and the Kalundu Tradition (western stream of migration). The facies that may be present are:

Urewe Tradition: Kwale branch-	<i>Silver Leaves facies</i>	AD 280-450	(Early Iron Age)
	<i>Mzonjani facies</i>	AD 450 – 750	(Early Iron Age)
Moloko branch-	<i>Icon facies</i>	AD 1300 - 1500	(Late Iron Age)

Kalundu Tradition: Happy Rest sub-branch -	<i>Doornkop facies</i>	AD 750 - 1000	(Early Iron Age)
	<i>Letaba facies</i>	AD 1600 - 1840	(Late Iron Age)

Loubser (1981;1994) has published the only investigations into the archaeology of the area. His layers of occupation Loubser (1994: 66-73) are summarized below:

Layer 1	Initial occupation of the Polokwane Plateau. Dates to around AD 1600-1650. Ellenberger (1937), mentions that some Lete and Po (also Mapo, Bapo, Bambo) settled in the Magaliesberg area around AD 1700. She and Van Warmelo (1944e), also mention that Bambo share ancestry with Mapo communities living with Kgatla in the western Transvaal, however this was not fully demonstrated (Loubser 1981: 5). The AD 1700 date is problematic, as the Matlala stated that the Ndebele were in Polokwane before them.
Layer 2	Movement of Matlala Kone from the south east between AD 1650 and AD 1700. They had contact with the Phalaborwa and Lobedu people in the Lowveld (Krige: 1937; Van Warmelo: 1944a).
Layer 3	Settlement by the Langa or “Black Ndebele” occurred around AD 1820. They claim Hlubi origins but also have Lowveld Phalaborwa (probably Lobedu) and Venda elements in their society. They left Polokwane area in around AD 1825 (Van Warmelo: 1930).
Layer 4	This period is placed around AD 1837. Mungali broke away from Mzilikazi and establish dominancy over local Ndebele headmen such as Bambo and others. Mungali ruled from KaSibindi but was replaced after only 2

	years. The Ledwaba/Maune Ndebele replaced the Sibindi Ndebele around AD 1840 (Ziervogel: 1958).
Layer 5	The Ledwaba (also known as Letaba) ruled from AD 1840 to AD 1855 when Europeans took control of the area (Ziervogel: 1958).

The Koni people began moving from the BaPhalarorwa around AD1650, however the first group who moved to the Polokwane area moved to around gaMaake and became known as Bakgaga. About 1750AD Bakgaga moved to around gaMphahlele. Later Bakgaga moved to gaMothapo.

STONE AGE HERITAGE BACKGROUND

No Stone Age remains were recorded.

The below mentioned is generic background to the area adapted from Deacon and Deacon: 1999:

The Stone Age covers most of southern Africa and the earliest consist of the Oldowan and Acheul artefacts assemblages. Oldowan tools are regularly referred to as “choppers”. Oldowan artefacts are associated with Homo *habilis*, the first true humans. In South Africa definite occurrences have been found at the sites of Sterkfontein and Swartkrans. Here they are dated to between 1.7 and 2 million years old. This was followed by the Acheulian technology from about 1.4 million years ago which introduced a new level of complexity. The large tools that dominate the Acheulian artefact assemblages range in length from 100 to 200 mm or more. Collectively they are called bifaces because they are normally shaped by flaking on both faces. In plain view they tend to be pear-shape and are broad relative to their thickness. Most bifaces are pointed and are classified as handaxes, but others have a wide cutting end and are termed cleavers. The Acheulian design persisted for more than a million years and only disappeared about 250 000 years ago. The project area is approximately 30km north of Chuenespoort dam, where the Pietersburg complex was recorded by Mason.

The change from Acheulian with their characteristic bifaces, handaxes and cleavers to Middle Stone Age (MSA), which are characterized by flake industries, occurred about 250 000 years ago and ended about 30 000 – 22 000 years ago. For the most part the MSA is associated with modern humans; Homo sapiens. MSA remains are found in open spaces where they are regularly exposed by erosion as well as in caves. Characteristics of the MSA are flake blanks in the 40 – 100 mm size range struck from prepared cores, the striking platforms of the flakes reveal one or more facets, indicating the preparation of the platform before flake removal (the prepared core technique), flakes show dorsal preparation – one or more ridges or arise down the length of the flake – as a result of previous removals from the core, flakes with convergent sides (laterals) and a pointed shape, and flakes with parallel laterals and a rectangular or quadrilateral shape: these can be termed pointed and flake blades respectively. Other flakes in MSA assemblages are irregular in form.

The change from Middle Stone Age to Later Stone Age (LSA) took place in most parts of southern Africa little more than about 20 000 years ago. It is marked by a series of technological innovations or new tools that, initially at least, were used to do much the same jobs as had been done before, but in a different way. Their introduction was associated with changes in the nature of hunter-gatherer material culture. The innovations associated with the Later Stone Age “package” of tools

include rock art – both paintings and engravings, smaller stone tools, so small that the formal tools less than 25mm long are called microliths (sometimes found in the final MSA) and Bows and arrows. Rock art is an important feature of the LSA and is abundant in the Waterberg and the Makgabeng.

PALAEONOTOLOGICAL HERITAGE BACKGROUND

The area lies within the grey zone on SAHRIS map. There is no need for a paleo study as the underlying granites and gneiss formations are not conducive to palaeontological remains.

REPORTS LISTED ON SAHRIS FOR THE IMMEDIATE AREA

Case ID 7488- Electrification- no HIA

No other reports are directly related to this area. Personal experience from numerous surveys on the Polokwane Plateau has usually delivered results relating to LIA stone walled sites occurring on the landscape. In this instance, it clearly appears that the area was occupied, but no walling could be located.

6. EVALUATION AND STATEMENT OF SIGNIFICANCE

6.1	<u>Significance</u>	<u>Rating</u>
1	The importance of the cultural heritage in the community or pattern of South Africa's history	High- Graves
2	Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage (Scientific significance).	Low
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	Medium- historical Colonial farm based building methods
4	Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects (Scientific significance)	Low
5	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	Low
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	Low
7	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	High- Graves
8	Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	Low

9	The significance of the site relating to the history of slavery in South Africa.	None
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6.2 Section 38(3) (c) An assessment of the impact of the development on such heritage resources.

Should the areas be excluded from the development footprint, no impact should occur.

6.3 Section 38(3) (d) An evaluation of the impact of the development on heritage resources relative to the sustainable economic benefits to be derived from the development.

Should the areas be excluded from the development footprint, impact should be negligible.

6.4 Section 38(3) (e) The results of consultation with the communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

Social consultative process is ongoing.

6.5 Section 38(3)(f) If heritage resources will be adversely affected by the proposed development the consideration of alternatives.

Should the areas be excluded from the development footprint, no alternative is required.

6.6 Section 38(3)(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Mitigation includes cordoning off heritage areas.

Nature		
A brief description of the impact of the heritage parameter being assessed in the context of the specific border delineated project. Criteria, includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
Topographical Extent		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	Impact limited to site
2	Local/District	Impact limited to district
3	Province/Region	Impact will affect region
4	International/National	Impact is on a national or international scale
Probability		
The probability of the impact occurring		
2	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
4	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).

6	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
8	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).

Reversibility

The degree to which the impact on heritage resources can be reversed after the activity has been completed

1	Completely reversible	The impact is reversible with minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures will be required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible regardless of mitigation measures.

Permanent loss of heritage resources

The degree to which heritage resources will be lost as a result of proposed activity. This applies to destruction of the context of the resource, as excavation could preserve objects but not context.

1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of any resources.
3	Severe loss of resource	The impact will result insignificant loss of resources.
4	Complete loss of resource	The impact is result in a complete loss of all resources.

Duration

The duration of the impact on the heritage parameter. Duration indicates the lifetime of a result of the proposed activity.

1	Short	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0-2 years).
2	Medium	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).
3	Long	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10-50 years).
4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a

		time span that the impact can be considered transient (Indefinite).
<u>Cumulative effect</u>		
The cumulative effect of the impacts on the heritage resource. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects.
<u>Magnitude</u>		
The severity of the impact- it must be considered that once a heritage resource is removed from its original context much of its significance is lost.		
1	Low	Impact affects the quality, use and integrity of the Heritage resource in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the heritage resource but heritage resource still continues and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the heritage resource and the quality, use, integrity and context of heritage resource is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very High	Impact affects the continued viability of the heritage resource and the quality, use, integrity and context of the heritage resource permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation. This would involve a destruction permit or reconstruction- essentially losing the essence of what made the resource significant in the first place.
<u>Significance</u>		
It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. (S) is formulated by adding the sum of numbers assigned to Topographical effect (E), Duration (D), and Magnitude (M) and multiplying the sum by the Probability. S= (E+D+M) P		
<30	Low	Mitigation of impacts is easily achieved where this impact would not have a direct influence on the decision to develop in the area.

30-60	Medium	Mitigation of impact is both feasible and fairly easy. The impact could influence the decision to develop in the area unless it is effectively mitigated.
>60	High	Significant impacts where there is difficult. The impact must have an influence on the decision process to develop in the area.

Impact and rating

<u>Impact</u>	<u>Rating</u>
Nature	New croplands
Topographical effect	1- limited to site
Reversibility	2
Permanent loss of heritage resources	1
Cumulative effect	1
Duration	2
Magnitude	2
Probability	2
Significance S= (E+D+M) P	1+2+2 x2 =8 The area is considered of low significance- should mitigation recommendations be followed
Mitigation	See below

7. RECOMMENDATIONS AND MITIGATION MEASURES

The following is recommended:

<u>Site recorded number</u>	<u>Mitigation measures and recommendations</u>
MK844/01	Tracing of descendants and consultation. It is recommended that the area be excluded and fenced to protect the graves and occupation area. A substantial buffer zone is recommended as per Map 3 to protect heritage resources and potential heritage resources associated with the graves
MK844/02	– It is recommended that the area be cordoned off and fenced, if possible. Should the area be required, it is recommended that the area be recorded, especially with regard to changing building styles and samples be donated to Polokwane Museums for possible later research. As the buildings have already basically been destroyed over the years, it is the building material composition that is of significance. The location of the well needs to be firmly established, and once established, fenced accordingly and preserved.

Should these recommendations and mitigation measures be adhered to, then we have no objections to development taking place.

The discovery of previously undetected subterranean heritage remains on the terrain must be reported to the Limpopo Heritage Authority or the archaeologist, and may require further mitigation measures.

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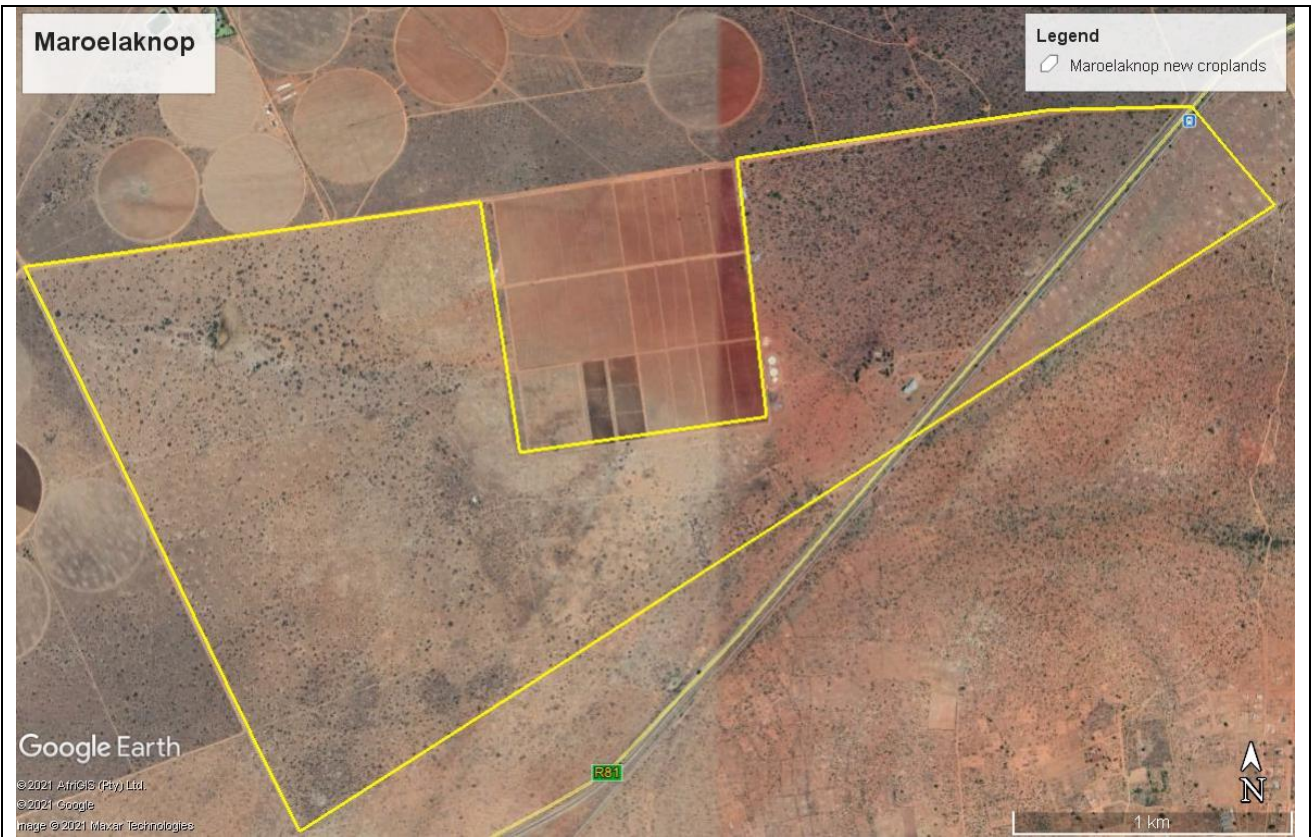
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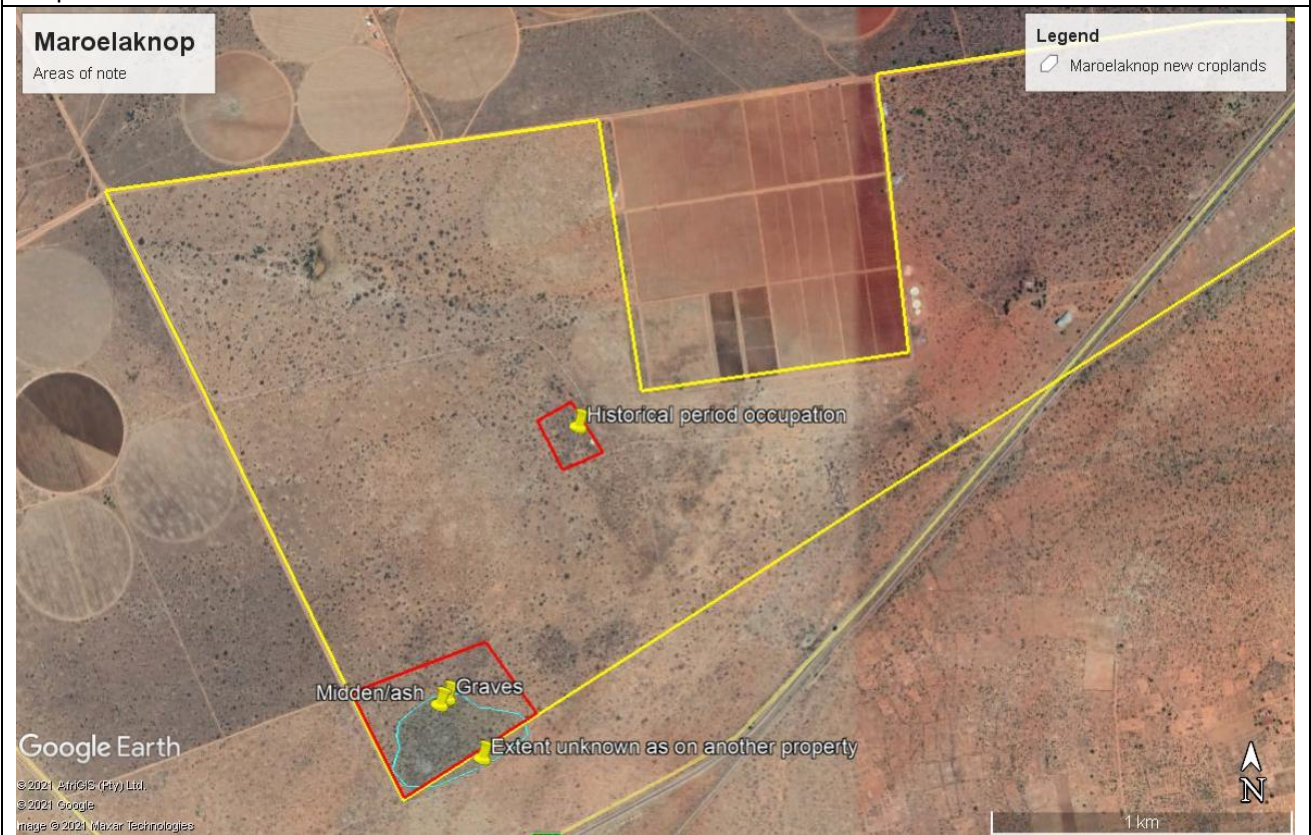
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Map 2. General area



Map 3. Areas noted- Red indicates where the area should be cordoned off

