

# **ARCHAEOLOGICAL IMPACT ASSESSMENT**

## **PROPOSED AGRICULTURAL DEVELOPMENT ON BOTHAFARM (REMAINDER ERF 4000), PRIESKA NORTHERN CAPE PROVINCE**

Prepared for:

### **Enviro Logic**

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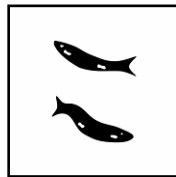
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## **Executive summary**

### *1. Introduction*

ACRM was requested by Enviro Logic to conduct an Archaeological Impact Assessment for the development of new vineyards on the Farm Botha (Rem. Erf 4000), near Prieska in the Northern Cape.

Three pieces of land (Sites A, B & C) collectively measuring about 80ha have been identified for the vineyard development, which will be fed by drip irrigation. Existing access roads will be used and no new roads or infrastructure will need to be constructed for the project.

Google Earth indicates that most of the study area, which is situated close to the old aerodrome, is severely degraded, while the lands between the proposed development site and the Orange River have been transformed by centre pivot agriculture.

The specialist heritage study forms part of an Environmental Impact Assessment (EIA) process that is being conducted by Enviro Logic.

A Palaeontological Impact Assessment (desktop study) for the proposed development has been done by Dr John Almond of Natura Viva.

### *2. Aim of the study*

The aim of the study is to locate archaeological sites and/or remains that may be impacted by the proposed project, to assess the significance of the potential impacts and to propose measures to mitigate the impacts.

The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

### *3. Findings*

Sites A, B and C are covered in a low density scatter of stone tools, dominated by implements assigned to the Middle Stone Age. These include flakes with prepared platforms, irregular cores, prepared cores, retouched blades, and chunks. More than 95% of the tools recorded are in banded ironstone which occurs widely in the region. Most of the pieces counted during the study have been modified and utilized. The majority of the tools were located on large patches of ironstone gravels, some of which were probable sources of raw material (Site B).

A small number of flake tools, chunks and cores in quartzite and indurated shale were noted, while one silcrete blade was also found. No formal tools such as points or scrapers were found, although many of the flakes have been retouched. One possible side scraper was found. One step flaked piece was found, but is not a true adze. No pottery, bone or ostrich eggshell was found. A small ESA biface was found in Site A.

Several hammerstones, an anvil, cores and flaking debris (chunks & flakes) were recorded on the upper slopes in Site C, indicating low levels of stone knapping and domestic activity.

No graves or typical grave markers were identified during the field study.

#### *Significance of the archaeological remains*

As archaeological sites are concerned, the occurrences are lacking in context as most of the remains occur in a disturbed and degraded context.

No evidence of any human settlement was identified, although low density activity areas were recorded in Site C. Gravels in Site B may have been possible sources of raw material.

Overall, the archaeological remains have been rated as having *low* (Grade 3C) significance.

#### *3. Conclusion*

The study has identified no significant impacts to pre-colonial archaeological material that will need to be mitigated prior to the development commencing.

The study has captured a good record of the archaeological heritage present across the proposed development sites.

The results indicate that the majority of the tools recorded are spread very thinly and unevenly over the surrounding landscape, and in a degraded context.

MSA tools dominate the assemblages and most likely represent discarded flakes and flake debris.

A few dispersed scatters of tools occur in places.

Hammerstones, an anvil, cores and flake debris in Site C indicate low levels of stone knapping and domestic activity.

Large concentrations of ironstone gravels in Site B may have been possible sources of raw material for making stone tools.

#### *4. Recommendations*

With regard to the proposed development of new vineyards on the Farm Botha (Rem Erf 4000) near Prieska, the following recommendations are made:

1. No archaeological mitigation is required prior to development activities commencing.
2. Should any unmarked human burials/remains or ostrich eggshell water flask caches for example, be uncovered during preparation of the land for development, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (Ms Natasha Higgitt 021 462 4502).

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## 1. INTRODUCTION

### 1.1. Background and brief

ACRM was requested by Enviro Logic, on behalf of Mr Jan-Philip Botha, to conduct an Archaeological Impact Assessment (AIA) for the development of new vineyards on the Farm Botha (Rem. Erf 4000) located about 1.5kms east of Prieska (Siyathemba Municipality) in the Northern Cape (Figures 1 & 2).

Google satellite imagery indicates that most of the study area comprises old, degraded agricultural land, while the lands between the site and the Orange River have been transformed by centre pivot agriculture (Figure 3).

Three, more or less contiguous pieces of land (Sites A, B & C) measuring about 80ha in extent have been identified for the proposed vineyard development, which will be fed by drip irrigation. Existing access roads will be used and no new roads or additional infrastructure will need to be constructed.

The archaeological study forms part of an EIA process that is being conducted by Enviro Logic.

A Palaeontological Impact Assessment desktop study has been done by Dr John Almond (2017).

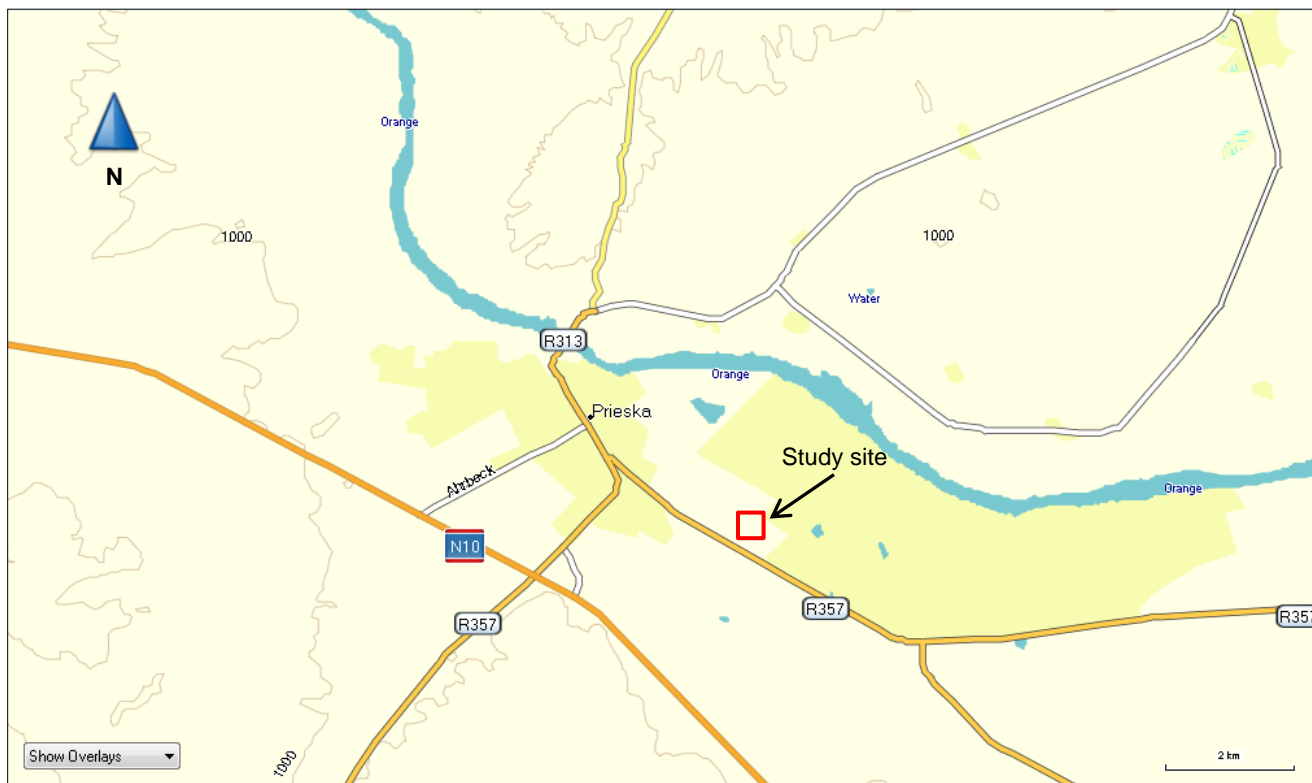


Figure 1. Locality map. Red polygon and arrow indicates the location of the proposed development site near the town of Prieska



Figure 2. Google satellite map indicating the location of the proposed development site (red polygon).

## 2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA No. 25 of 1999) protects archaeological and palaeontological sites and materials, as well as graves/cemeteries, battlefield sites and buildings, structures and features over 60 years old. The South African Heritage Resources Agency (SAHRA) administers this legislation nationally, with Heritage Resources Agencies acting at provincial level. According to the Act (Sect. 35), it is an offence to destroy, damage, excavate, alter or remove from its original place, or collect, any archaeological, palaeontological and historical material or object, without a permit issued by the SAHRA or applicable Provincial Heritage Resources Agency.

Notification of SAHRA is required for proposed developments exceeding certain dimensions (Sect. 38), upon which they will decide whether or not the development must be assessed for heritage impacts that may include an assessment of archaeological (a AIA) or palaeontological heritage (a PIA).

## 3. TERMS OF REFERENCE

The terms of reference for the study were to.

- Determine whether there are likely to be any important archaeological resources that may be impacted by the proposed vineyard development;

- Indicate any constraints that would need to be taken into account in considering the development proposal;
- Identify potentially sensitive archaeological or 'No-Go' areas, and
- Recommend mitigation action.

#### 4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The site for the proposed vineyard development is located about 1.5kms east of Prieska on the R357 to Douglas, and about 2kms south west of the Orange River.

Botha is a large commercial farm that includes centre pivot irrigation, sheep farming and agro-industry. The proposed development site is located close to the old aerodrome (Figure 3). There are no significant landscape features on the proposed development sites. Surrounding land use is agriculture, with large tracts of vacant land



Figure 3. Close up Google satellite map of the approximate boundaries of the proposed development sites (A, B & C)

##### 4.1 Site A

Site A is located in the north western portion of the farm. The upper slopes of the site are covered in thorny vegetation on a substrate of ironstone gravel, while the lower slopes are less vegetated with large patches of gravel occurring in places. A drainage channel in the northwest is covered in dense yellow grass. Most of Site A is severely degraded.

Large gravel pits have been excavated across the northern portion which is also covered in thorny vegetation and yellow grass. Several old farm roads intersect this portion of the proposed development site. In recent years, a large sheep camp has been established in the eastern portion. Piles of gravel are scattered across the site, where the surrounding top soils have been scraped away (Figures 4-7). This is especially evident in the north western portion, alongside the drainage channel.



Figure 4. Site A. View facing north west



Figure 6. Site A. View facing north east



Figure 5. Site 4. View facing north



Figure 7. Site A. View facing north west



#### 4.2 Site B

The largest of the three proposed development sites; much of Site B is severely degraded, particularly across the northern portion, where old farm roads cut across the area, and large scale dumping of old farming equipment and other material is widespread, much of it hidden under dense vegetation and grass. Diggings and more recent bulldozer activity has only added to the disturbance of the surrounding landscape. Large swathes of thorny drie-doring and dense yellow grass cover the stony gravel terrace and north western slopes. This portion of the site has been excluded from the project as the soils are not suitable for vineyard development. Most of the surface area in Site B is covered in ironstone gravel, while sand and limestone dominates much of the southern portion (Figures 8-11).



Figure 8. Site B. View of the site facing north east



Figure 10. Site B. View of the site facing north east



Figure 9. View of the site facing south



Figure 11. Site B. View of the site facing north west

### 4.3 Site C

The northern portion of Site C, alongside a large block of newly established vineyards and a pellet-feed factory, is severely degraded. An old quarry and several smaller dams occupy the north western corner of the site, alongside the factory. The surrounding lands have been scraped and levelled, while numerous small piles of gravel are hidden among the dense yellow grass. The mid-upper slopes are also degraded.

The flatter southern portion of the proposed development site is relatively undisturbed, and covered in dense thorny vegetation on a substrate of ironstone gravels (Figures 12-15). There is some disturbance in this area, however, mostly alongside the western boundary, which will not be developed beyond the powerline servitude. New refuse pits and some dumping are also noticeable alongside an old farm road on this portion of the proposed site.



Figure 12. Site C. View of the site facing south



Figure 14. Site C. View of the site facing north west



Figure 13. Site C. View of the site facing west



Figure 15. Site C. View of the site facing north east

## **5. STUDY APPROACH**

### **5.1 Method of survey**

The purpose of the study is to assess the sensitivity of archaeological resources in the study area, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

A 3-day field assessment was undertaken by ACRM between the 21<sup>st</sup> and 23<sup>rd</sup> June, 2017. The position of identified archaeological resources, were plotted using a hand held GPS unit set on the map datum WGS 84. Individual stone implements were not point plotted, however. A track path of the survey was captured. A literature survey was carried out to assess the heritage context surrounding the proposed development site.

### **5.2 Constraints and limitations**

Overall, archaeological visibility was fairly good, but dense vegetation cover across all three proposed development sites resulted in low archaeological visibility.

### **5.3 Identification of potential risks**

Archaeological resources will be impacted by the proposed development, but it is maintained that the study has captured a good record of the archaeological heritage present, which is representative of findings documented elsewhere in Prieska (see for example Kaplan 2010, 2011, 2013).

## **6. HERITAGE CONTEXT**

According to Morris (2010), the area around Prieska includes several well-known Middle Stone Age (MSA) and Later Stone Age (LSA) sites along the Orange River. A small LSA shelter on Prieska Kop just outside the town has also been documented. Morris (2010) recorded surface scatters of mostly LSA and a few MSA tools in ironstone during an assessment for a new cemetery inside the urban edge.

Beaumont (2005) describes Early, Middle and Later Stone Age material in ironstone north of Prieska, while van Ryneveld (2006) also describes MSA and LSA lithics dominated by banded ironstone near Prieska. Large numbers of MSA and some LSA ironstone tools were recorded by Kaplan (2011) during a study for a proposed solar energy farm alongside the Prieska-Douglas road not far from Botha Farm, while low density scatters of archaeological resources were encountered by Gaigher (2013) during a study for a solar energy farm 25kms east of Prieska. It is a little surprising to note that no archaeological remains were recorded by Magoma (2013) during a HIA for a proposed prospecting licence on a 20 000ha farm south of Prieska. Relatively large numbers of MSA tools in ironstone were also recorded in several proposed powerline servitudes between Prieska and the Orange River (Kaplan 2012).

At Bundu near Copperton ( $\pm 60$  west of Prieska), a series of dried up deflated pans have been excavated by Kiberd (2002, 2006). Pans would have acted as focal points for grazing animals, but also as a source of water. A complex series of sedimentary features and horizons in these pans may be broadly coeval with periods of climatic change in the region (Kiberd 2006). Archaeological material was recovered from throughout the sedimentary sequence. Large numbers of LSA tools occur on the surface of the pan and within the upper red sands and include micro-lithic tools, while below the red sands, MSA lithics mainly in quartzite, and preserved fauna were found. ESA tools, preserved fauna and even the possible discovery of an ESA hearth, which may be older than 300 000 years, was also excavated.

Kaplan (2010) undertook a study for a combined wind and solar energy farm near Copperton, where large numbers of LSA and MSA material were documented. Wiltshire and Kaplan (2011) also recorded large numbers of MSA and LSA tools in banded ironstone during a study for a wind energy farm in the same area. In addition to pre-colonial heritage, several stone walled heritage structures were also mapped. A number of open sites with surface scatters of stone tools dating to the MSA and LSA were located on small hills during an AIA for a wind energy farm south east of Copperton by Van Schalkwyk (2013), while van Ryneveld (2006) also described MSA and LSA lithics near Copperton.

## 7. FINDINGS

A spreadsheet of waypoints and description of archaeological finds is presented in Appendix A. Figure 16 illustrates the overall distribution of archaeological remains documented during the study. It is clear that the majority of resources occur in Site C.

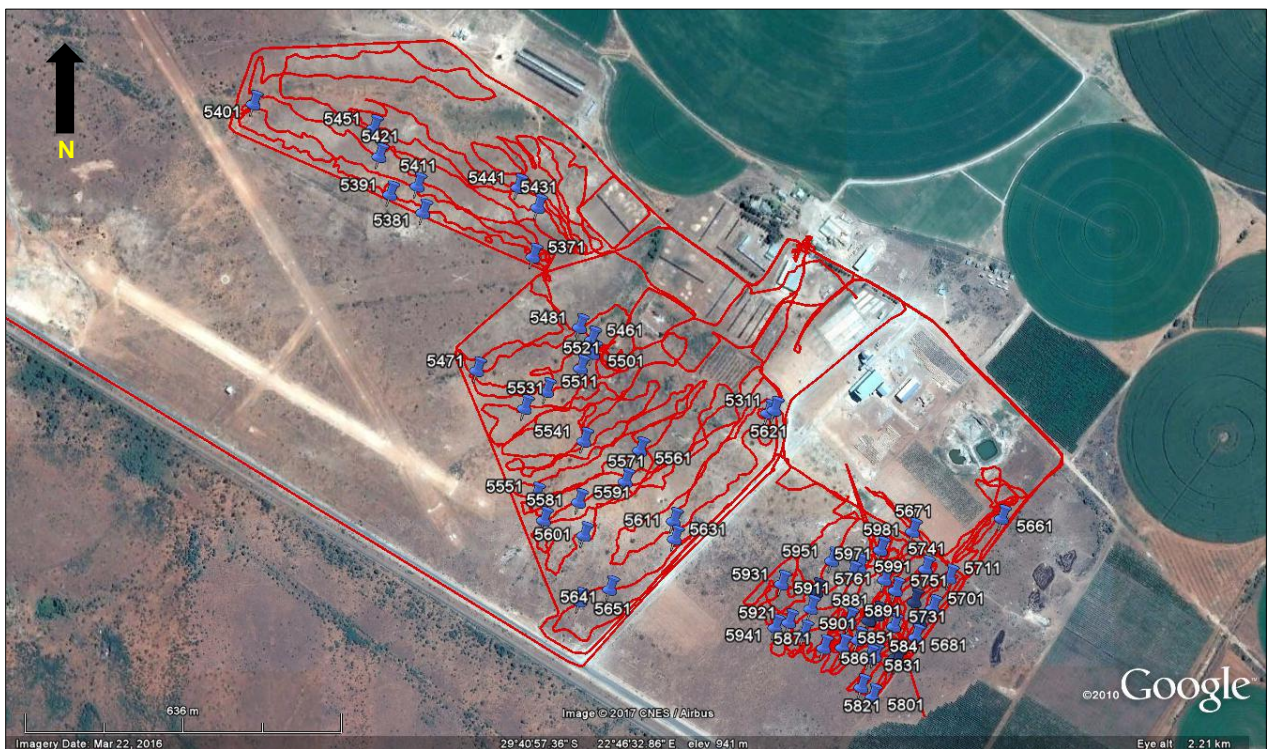


Figure 16. Spreadsheet of waypoints across Sites A-C. Red lines are track paths

## 7.1 Site A

A relatively large number of MSA tools were counted in Site A. The northern portion of the proposed site including the drainage channel has been excluded from the development proposal as is not suitable for the cultivation of grapes (Figure 17).

Most of the tools recorded are spread very thinly and unevenly over the surrounding landscape, although several low-density scatters of tools (e.g. Sites 5381, 5391, 5421 & 5441), comprising irregular and prepared (Levallois) cores, chunks and flakes, were documented. A large, Fauresmith retouched blade was found on Site 5381, while a small ESA biface was recorded on Site 5441. Two grindstones/grindstone fragments (Sites 5431 & 5451) were also found. The majority of archaeological resources were recorded on patches of ironstone gravels, while a few isolated tools were found on soft sands alongside the floodplain of the drainage channel.

Flake debris, including cores, chunks and unmodified flakes were also noted among numerous piles of gravels where the soils have been scraped away. The area around the top end of the drainage channel is especially degraded with several large piles of gravel occurring in this area. Extensive erosion occurs in this area.

More than 95% of the tools counted in Site A are in banded ironstone, with the remainder in fine-grained quartzite and weathered indurated shale.

A collection of tools and the context in which they were found is illustrated in Figures 18-27.

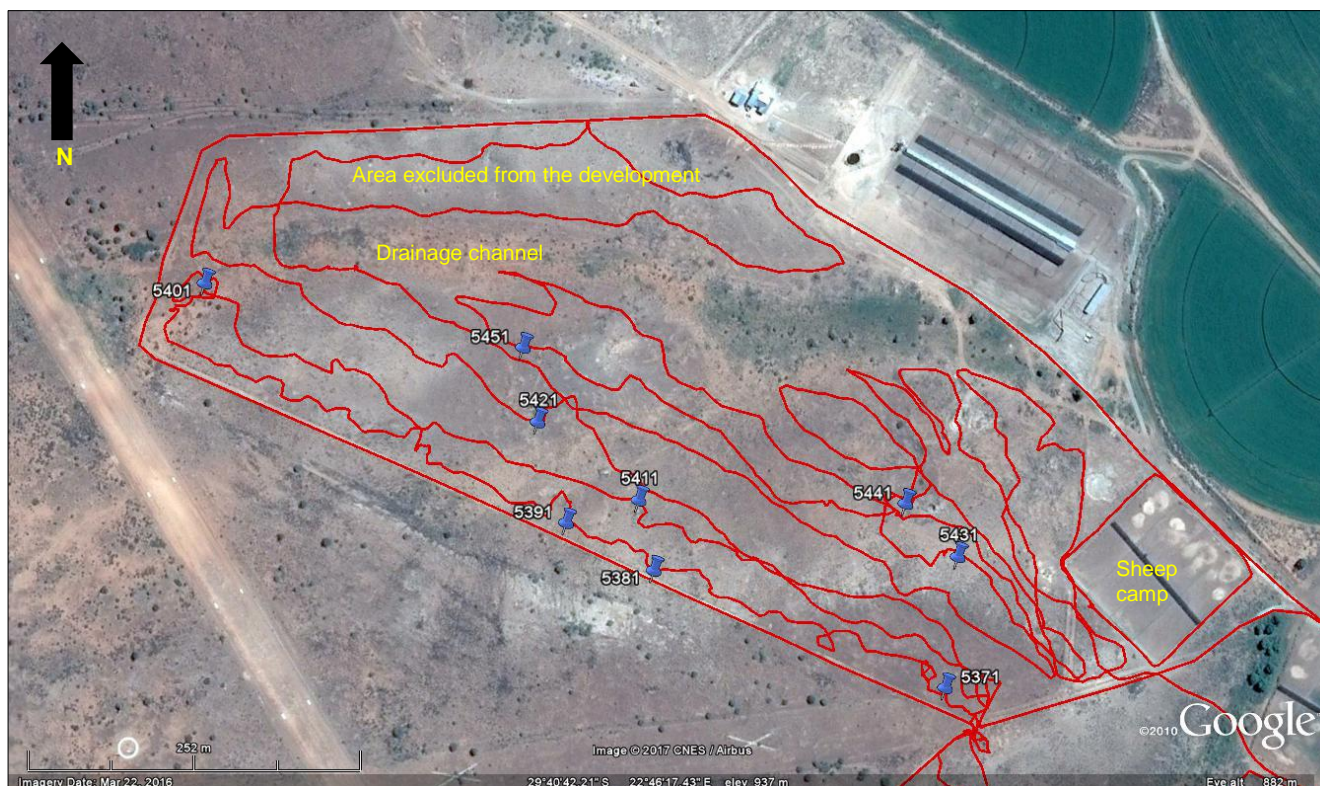


Figure 17. Site A. Archaeological waypoints. Red lines are track paths



Figure 18. Site 5391 Context in which most of the tools were found



Figure 21. Grindstone fragment (Site 5431). Scale is in cm



Figure 19. Collection of tools from Site A. Scale is in cm



Figure 22. Collection of tools from Site A. Scale is in cm



Figure 20. Collection of tools from Site A. Scale is in cm



Figure 23. Collection of tools from Site A. Scale is in cm



Figure 24. Collection of tools from Site A. Scale is in cm



Figure 26. Collection of tools from Site A. Scale is in cm



Figure 25. Collection of tools from Site A. Scale is in cm



Figure 27. Collection of tools from Site A. Scale is in cm

## 7.2 Site B

Given the size of the study area, overall, a relatively small number of tools were counted in Site B, which is severely degraded, especially across the north eastern portion. In addition, according to the soil study, the north western slopes are not suitable for the cultivation of vineyards, while the drainage will also be excluded (Figure 28). The assemblage is dominated by tools in banded ironstone, with smaller numbers in fine-grained quartzite and weathered indurated shale.

Most of the tools recorded in Site B comprise single, isolated finds, spread very thinly and unevenly over the landscape, and occur in an already disturbed and degraded context. A few dispersed scatters of tools (Sites 5461 & 5491) were encountered on patches of gravels, while ephemeral scatters of tools (Sites 5511, 5531 & 5551) occur on the soft sands across the southern portion. The majority of tools comprise MSA flakes with prepared platforms, some retouched and utilized blades, round and prepared cores, and chunks. A lovely double sided retouched blade was also found (Site 5611).

Isolated flakes, chunks and cores (Site 5541) were recorded on beds of ironstone gravels across the central portion of the site, which may have been a possible source of raw material for making tools.

A dispersed scatter of flakes, chunks and a single round core (Site 5601) were recorded on a limestone kopje in the south eastern portion of the site, close to the entrance of the farm.

The ruins of a modern brick and concrete dwelling (Site 5651), probably a worker cottage, was recorded in the south eastern corner of the site, also near the entrance to the farm alongside the Prieska-Douglas Road. Rusted metal, tins, glass fragments, plastic, asbestos, clay bricks and concrete are scattered around a large area (Figures 37 & 38).

A collection of tools and the context in which they were found is illustrated in Figures 29-36).

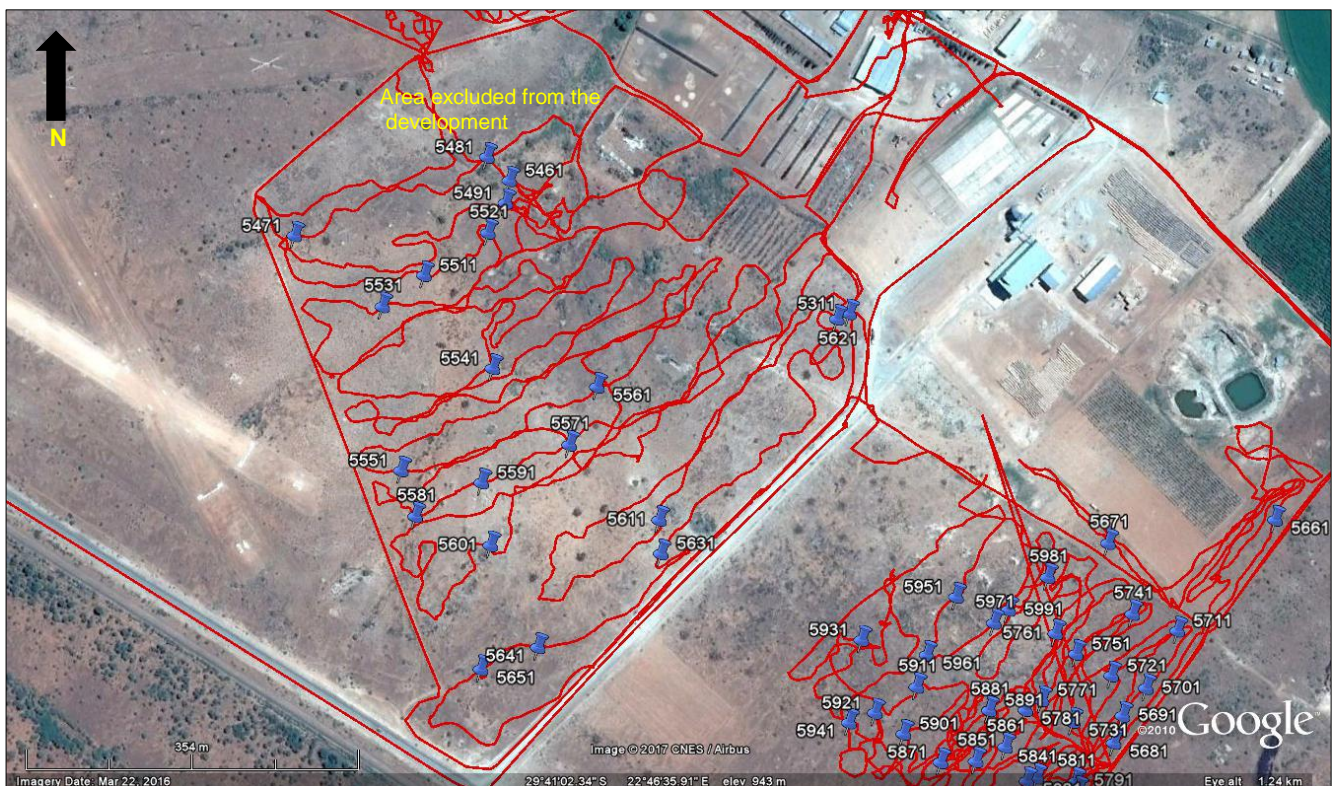


Figure 28. Site B. Archaeological waypoints. Red lines are track paths



Archaeological study proposed agricultural development on Botha Farm, near Prieska



Figure 29. Collection of tools from Site B. Scale is in cm



Figure 32. Collection of tools from Site B. Scale is in cm



Figure 30. Collection of tools from Site B. Scale is in cm



Figure 33. Collection of tools from Site B. Scale is in cm



Figure 31. Site 5541. Also a possible source of raw material



Figure 34. Collection of tools from Site B. Scale is in cm



Figure 35. Collection of tools from Site B. Scale is in cm



Figure 36. Collection of tools from Site B. Scale is in cm



Figure 37. Stone ruins (Site 5651). View facing south east



Figure 38. Stone ruins (Site 5651). View facing south

### 7.3 Site C

The largest numbers of stone implements were recorded and counted in Site C (Figure 39).

Isolated and dispersed MSA flakes, retouched and modified pieces, chunks, blades, split cobbles and cores (Site 5661) were documented in the levelled and scraped lands alongside the new vineyards in the north eastern portion of the proposed site. A step-flake tool was also found, but is not a true adze. Modified and unmodified flakes, chunks and cores were also found among small piles of gravels that are invisible among dense yellow grass in the same area. The majority of these remains are in banded ironstone, with a small numbers of flakes, chunks and cores in fin-grained quartzite and indurated shale. A retouched silcrete blade (Site 5731), and a lovely quartzite blade, flakes, chunks and a miscellaneous grindstone fragment (Site 5771) was also recorded on patches of gravel on the mid slopes of the site.

A retouched point (Site 5981), and a large anvil, several blades, flakes and chunks (Site 5991) were recorded on patches of gravel on the densely vegetated slopes in the northern portion of the proposed development site.

Two hammerstones, an anvil, round and prepared cores, blades, several cortex cores, and large amounts of flaking debris (chunks & unmodified flakes) (Sites 5851-5901) were recorded on extensive patches of ironstone gravels on the flatter, southern portion of Site C, indicating low levels of stone knapping and domestic activity. The tools are spread fairly thinly and unevenly over the surrounding landscape in this area, and appear to be located *in-situ*.

More than 90% of the tools recorded in Site C, are in banded ironstone, with the remainder in quartzite and weathered indurated shale.

A collection of tools and the context in which they were found is illustrated in Figures 40-49.

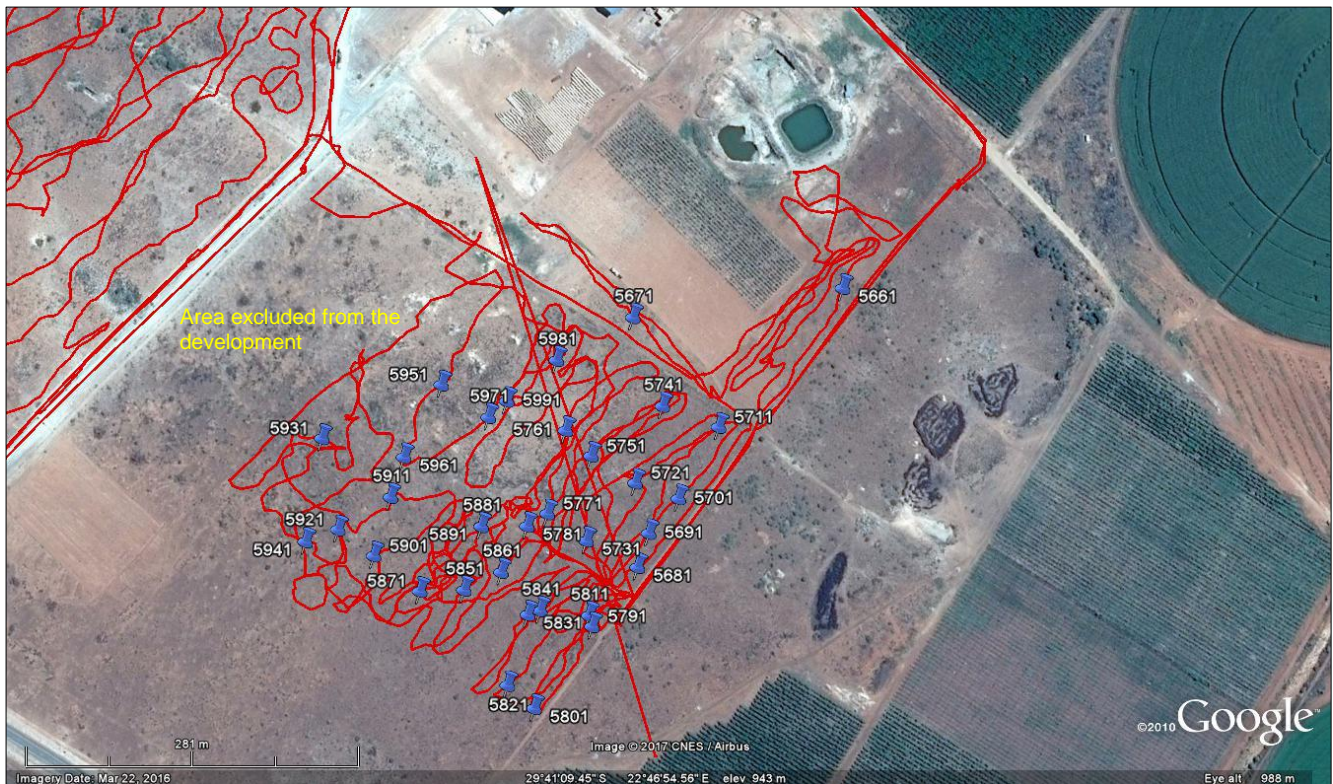


Figure 39. Archaeological waypoints. Red lines are track paths



Figure 40. Collection of tools from Site C. Scale is in cm



Figure 41. Stone tools from Site C. Scale is in cm



Figure 42. Collection of tools from Site C. Scale is in cm



Figure 44. Sites 5851-5901. View facing west



Figure 43. Collection of tools from Site C. Scale is in cm



Figure 45. Collection of tools from Site C. Scale is in cm



Figure 46. Collection of tools from Site C. Scale is in cm



Figure 48. Collection of tools from Site C. Scale is in cm



Figure 47. Collection of tools from Site C. Scale is in cm



Figure 49. Collection of tools from Site C. Scale is in cm

#### 7.4 Significance of the archaeological remains

As archaeological sites are concerned, the occurrences are lacking in context as most of the remains occur in a disturbed and degraded context.

No evidence of any human settlement was identified although low density activity areas (Sites 5851-5901) were recorded in Site C.

Site 5541 (Site B) may have been a possible source of raw material for making stone tools.

Overall, the archaeological remains have been rated as having *low* (Grade 3C) significance.

## **7.5 Graves**

No graves or typical grave markers were encountered during the field study.

## **8. CONCLUSION**

The study has identified no significant impacts to pre-colonial archaeological material that will need to be mitigated prior to the development commencing.

The study has captured a good record of the archaeological heritage present across the proposed development sites.

The results indicate that the majority of the tools recorded are spread fairly thinly and unevenly over the surrounding landscape, and mostly in a degraded context.

MSA tools dominate the assemblages and most likely represent discarded flakes and flake debris.

A few dispersed scatters of tools occur in places.

Hammerstones, an anvil, cores and flake debris in Site C indicate low levels of stone knapping and domestic activity.

Large concentrations of ironstone gravels in Site B may have been possible sources of raw material.

## **9. RECOMMENDATIONS**

With regard to the proposed development of agricultural land on the Farm Botha (Remainder Erf 2000) near Prieska, the following recommendations are made:

1. No further archaeological mitigation is required.
2. Should any unmarked human burials/remains or ostrich eggshell water flask caches for example, be uncovered, or exposed during construction activities, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (Ms Natasha Higgitt 021 462 4502).

## 10. REFERENCES

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Appendix A

Spreadsheet of waypoint and description of archaeological finds

Archaeological study proposed agricultural development on Botha Farm, near Prieska

Site	Name of Farm	Lat/long	Description of finds	Grading	Mitigation
	Botha Farm (Rem. Erf 4000), Prieska				
<b>Site A</b>					
5371		S29° 40.821' E22° 46.419'	Large banded ironstone blade and a few isolated flakes and chunks on ironstone gravels on upper slopes	3C	None required
5381		S29° 40.772' E22° 46.282'	Low density scatter of utilized & retouched flakes, a few weathered indurated shale pieces, a quartzite core, Fauresmith type blade tool on extensive gavel alongside fence	3C	None required
5391		S29° 40.753' E22° 46.241'	A few retouched/utilized flakes and chunks on gravel patch alongside fence. Also weathered & retouched indurated shale flakes, on clay & ironstone gravels	3C	None required
5401		S29° 40.654' E22° 46.071'	Cores, chunks, flakes among collected piles of gravel, near fence	3C	None required
5411		S29° 40.744' E22° 46.275'	Cores, chunks among piles of ironstone gravels	3C	None required
5421		S29° 40.711' E22° 46.228'	Dispersed scatter of chunks, flakes, round core, weathered indurated shale flake, on large patch of gravel, piles of gravel as well. Excavated pit and heaps of stone and flakes and chunks lying about – disturbed	3C	None required
5431		S29° 40.767' E22° 46.425'	Misc. grindstone cobble – quartzite	3C	None required
5441		S29° 40.746' E22° 46.401'	ESA biface, large weathered indurated shale retouched flake, several cores incl. worked out prepared core, on patches of gravel. Also flakes and chunks among several piles of grave	3C	None required
5451		S29° 40.681' E22° 46.221'	Upper grindstone – quartzite	3C	None required
<b>Site B</b>					
5461		S29° 40.911' E22° 46.491'	Dispersed scatter of tools on extensive ironstone gravels – a few retouched & utilized flakes, chunks, round core, hammer stone. Pit and piles of gravel among bush. Surrounding area heavily disturbed.	3C	None required
5471		S29° 40.944' E22° 46.348'	Several weathered retouched and utilized flakes, large flat indurated shale flake	3C	None required
5481		S29° 40.898' E22° 46.476'	Triangular shaped flake and several chunks on patch of gravel surrounded by thick yellow grass	3C	None required
5491		S29° 40.924' E22° 46.489'	Large quartzite flake, quartzite chunk, large weathered indurated shale flake, several ironstone flakes on patches of gravel	3C	None required

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5511		S29° 40.967' E22° 46.435'	Dispersed flakes and chunks in ironstone, quartz and indurated shale on sand and limestone across much of the southern portion of the site. Top soils have also been removed alongside southern fence/farm road. Piles of gravels dotted around. Some soil test pits		
5521		S29° 40.942' E22° 46.477'	A few dispersed flakes and chunks on large patches of ironstone gravels. Levallois quartzite core.	3C	None required
5531		S29° 40.985' E22° 46.407'	Dispersed scatter of ironstone, quartzite and indurated flakes on extensive sand and limestone across southern portion. Also old diggings	3C	None required
5541		S29° 41.021' E22° 46.481'	Flakes, chunk, broken chunk, retouched flake – on extensive ironstone gravel. Lots of cobbles, possible source of raw material	3C	None required
5551		S29° 41.080' E22° 46.421'	Dispersed scatter of isolated flakes, chunks, snapped retouched blade on sandy and kalk surface and some gravels – near drainage channel – sheet wash and erosion from near kopje	3C	None required
5561		S29° 41.031' E22° 46.551'	Round quartzite core, a few isolated ironstone chunks & flakes among scraped gravels surrounded by dense drie-doring. Also a few piles of gravels	3C	None required
5571		S29° 41.065' E22° 46.532'	Indurated shale broken MSA flake, ironstone flake and 2 chunks	3C	None required
5581		S29° 41.106' E22° 46.430'	Indurated shale utilized MSA blade – on sheet wash gravels alongside drainage channel, iron-stone pointed flake, old excavation pit	3C	None required
5591		S29° 41.087' E22° 46.474'	Thick, retouched/utilized blade	3C	None required
5601		S29° 41.123' E22° 46.480'	Dispersed scatter of tools on calcrete and gravel kopje, including a few flakes, chunks and core	3C	None required
5611		S29° 41.108' E22° 46.592'	Beautiful double-sided retouched blade	3C	None required
5621		S29° 40.991' E22° 46.710'	Dispersed scatter of a few flake and chunks on raised calcrete kopje	3C	None required
5631		S29° 41.127' E22° 46.593'	Indurated shale core/chunk		
5641		S29° 41.181' E22° 46.512'	Flake & chunk on heavily disturbed patch of gravel near entrance to farm	3C	None required
5651		S29° 41.194' E22° 46.474'	Ruined building – mostly collapsed, piles of bricks, concrete, plaster, and a few half standing walls. Metal and glass bottles, objects and items.	3C	None required
<b>Site C</b>					
5661		S29° 41.107' E22° 47.001'	Dispersed scatter of MSA flakes, chunks, utilized/retouched pieces, step flake piece/?adze, round cores,	3C	None required

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			flaked chunk, split cobble, mostly banded ironstone, indurated shale blade and flake, on heavily scraped gravels alongside new vineyard development. Small piles of gravel alongside barely invisible among dense yellow grass		
5671		S29° 41.121' E22° 46.890'	Occasional isolated MSA flake and chunk, indurated shale prepared core, on clay and sand substrate	3C	None required
5681		S29° 41.235' E22° 46.893'	Large round quartzite core, dispersed scatter of flakes and chunks	3C	None required
5691		S29° 41.220' E22° 46.899'	Large round quartzite core		
5701		S29° 41.204' E22° 46.915'	Utilized/retouched flake	3C	None required
5711		S29° 41.171' E22° 46.936'	Indurated shale core	3C	None required
5721		S29° 41.197' E22° 46.892'	Chunks and several flake on large gravel patch	3C	None required
5731		S29° 41.223' E22° 46.866'	Side retouched <b>silcrete</b> blade	3C	None required
5741		S29° 41.161' E22° 46.906'	Round core and utilized/retouched flake	3C	None required
5751		S29° 41.184' E22° 46.868'	Utilized/retouched blade		
5761		S29° 41.173' E22° 46.855'	Chunk and flake on patch of gravel	3C	None required
5771		S29° 41.211' E22° 46.845'	Lovely quartzite MSA blade, several flakes and chunks, misc. grindstone fragment - on extensive patch of gravel incl. many small pieces of limestone	3C	None required
5781		S29° 41.216' E22° 46.835'	Flake and chunks in old track	3C	None required
5791		S29° 41.262' E22° 46.869'	Very dispersed scatter of tools on extensive ironstone gravels, incl. retouched & utilized flakes, chunks, several cores, large chunky utilized flake, surrounded by dense bush & tufts of yellow grass	3C	None required
5801		S29° 41.299' E22° 46.839'	Several chunks and flakes and quartzite flake on ironstone gravels surrounded by dense bush	3C	None required
5811		S29° 41.257' E22° 46.868'	Worked out (Levallois) core and a few flakes and chunks on gravels		
5821		S29° 41.289' E22° 46.825'	Retouched flake/scrapper, retouched & utilized blade, flakes, chunks on ironstone gravels	3C	None required
5831		S29° 41.257' E22° 46.835'	Large chunky quartzite MSA flake, several ironstone utilized/retouched flakes and chunks on extensive gravels	3C	None required
5841		S29° 41.255' E22° 46.842'	Weathered indurated shale MSA flake	3C	None required
5851		S29° 41.246' E22° 46.802'	Isolated and dispersed scatter of ironstone flake tools, core and chunks, including several MSA quartzite flakes on extensive ironstone gravels	3C	None required
5861		S29° 41.237' E22° 46.821'	Same as above – including double sided misc. retouched MSA blade,	3C	None required

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			triangular shaped flakes, chunks, round cores, quartzite chunk and flakes		
5871		S29° 41.246' E22° 46.778'	Extensive of above – widely dispersed (low density) scatter of MSA flake tools, chunks, round and worked-out cores, quartzite and indurated shale flakes, quartzite cortex and round cores, chunks, hammerstone – low intensity activity area across wide area on ironstone gravels.		
5881		S29° 41.217' E22° 46.811'	Dispersed scatter of tools on extensive ironstone gravels – incl. split/broken quartzite hammer stone, quartzite chunk, several quartzite cores, anvil, large and smaller quartzite MSA flakes, retouched/utilized ironstone blade, retouched/utilized flakes, several round cores, indurated shale flake.	3C	None required
5901		S29° 41.230' E22° 46.754'	Context same as above, incl. ironstone MSA flakes, chunky quartzite MSA flake, chunks, core, etc.	3C	None required
5911		S29° 41.203' E22° 46.763'	A few ironstone flakes – surrounded by fairly dense bush/drie doring and yellow grass on gravels and limestone	3C	None required
5921		S29° 41.218' E22° 46.735'	Same as above incl. chunks	3C	None required
5931		S29° 41.176' E22° 46.726'	Dispersed and isolated ironstone flakes, chunks on extensive gravels and limestone across western portion		
5941		S29° 41.224' E22° 46.718'	A few isolated flakes and chunks on gravels and limestone bits surrounded by bush and grass	3C	None required
5951		S29° 41.152' E22° 46.789'	Isolated flakes and chunks on gravel	3C	None required
5961		S29° 41.185' E22° 46.770'	Isolated flakes and chunks on gravel patches surrounded by bush and yellow grass	3C	None required
5971		S29° 41.167' E22° 46.814'	Snapped/broken quartzite flake	3C	None required
5981		S29° 41.140' E22° 46.850'	Retouched ironstone blade, retouched point, utilized/side retouched piece, weathered indurated shale flake, small quartzite flake surrounded by thick bush and yellow grass	3C	None required
5991		S29° 41.159' E22° 46.824'	Large quartzite cobble/anvil, retouched MSA blade, several flakes and chunks, core, quartzite chunk and MSA flake on gravel patches surrounded by thick bush and yellow grass across the north western portion of the site	3C	None required

Table 1. Spreadsheet of waypoints and description of archaeological finds