HERITAGE IMACT ASSESSMENT FOR THE PROPOSED CULTIVATION OF NEW LANDS AT UPINGTON, GORDONIA MAGISTERIAL DISTRICT, NORTHERN CAPE

Required under Section 38 (8) of the National Heritage Resources Act (No. 25 of 1999).

Report for:

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EXECUTIVE SUMMARY

ASHA Consulting (Pty) Ltd was appointed by Pieter Badenhorst Professional Services to conduct an assessment of the potential impacts to heritage resources that might occur through the proposed development of new agricultural lands on the farm Vaal Koppies No. 40, at Upington, Northern Cape. The farm lies on the southern side of the Orange River, to the southeast of the town. The lands are proposed for the planting of vineyards.

The study area was generally flat, but the western part was more undulating where one of the non-perennial stream beds had incised into the underlying geology. The ground surface is covered in much gravel and in some places bedrock protrudes. Vegetation cover is minimal, although along the largest stream in the west there was a fairly dense but narrow band of bush.

Archaeological stone artefacts were identified across the site but the vast majority were isolated occurrences that formed part of the background scatter in the area. There were two places where it appears that Later Stone Age people may have camped close to a stream but both scatters were very low density and not of further concern. No mitigation is suggested. The N10 was also identified as a scenic route of limited significance. The development would contribute positively to the agricultural landscape, although, being 800 m from the N10, this will not make much difference to the scenic qualities of this section of the N10.

Because there will not be any significant impacts to heritage resources, it is recommended that the development be allowed to proceed as planned with no further heritage work being required. It should be noted, however, that if any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

Glossary

Background scatter: Artefacts whose spatial position is conditioned more by natural forces than by human agency

Early Stone Age: Period of the Stone Age extending approximately between 2 million and 20 000 years ago.

Hand-axe: A bifacially flaked, pointed stone tool type typical of the Early Stone Age.

Later Stone Age: Period of the Stone Age extending over the last approximately 20 000 years.

Middle Stone Age: Period of the Stone Age extending approximately between 200 000 and 20 000 years ago.

Abbreviations

ASAPA: Association of Southern African Professional Archaeologists

BAR: Basic Assessment Report

BIF: Banded iron formation

CRM: Cultural Resources Management

ESA: Early Stone Age

GPS: global positioning system

HIA: Heritage Impact Assessment

LSA: Later Stone Age

MSA: Middle Stone Age

NEMA: National Environmental Management Act (No. 107 of 1998)

NHRA: National Heritage Resources Act (No. 25) of 1999

SAHRA: South African Heritage Resources Agency

SAHRIS: South African Heritage Resources Information System

Contents

1. INTRODUCTION

ASHA Consulting (Pty) Ltd was appointed by Pieter Badenhorst Professional Services to conduct an assessment of the potential impacts to heritage resources that might occur through the proposed development of new agricultural lands on the farm Vaal Koppies No. 40, at Upington, Northern Cape (Figure 1). The farm lies on the southern side of the Orange River, to the southeast of the town (Figure 2).

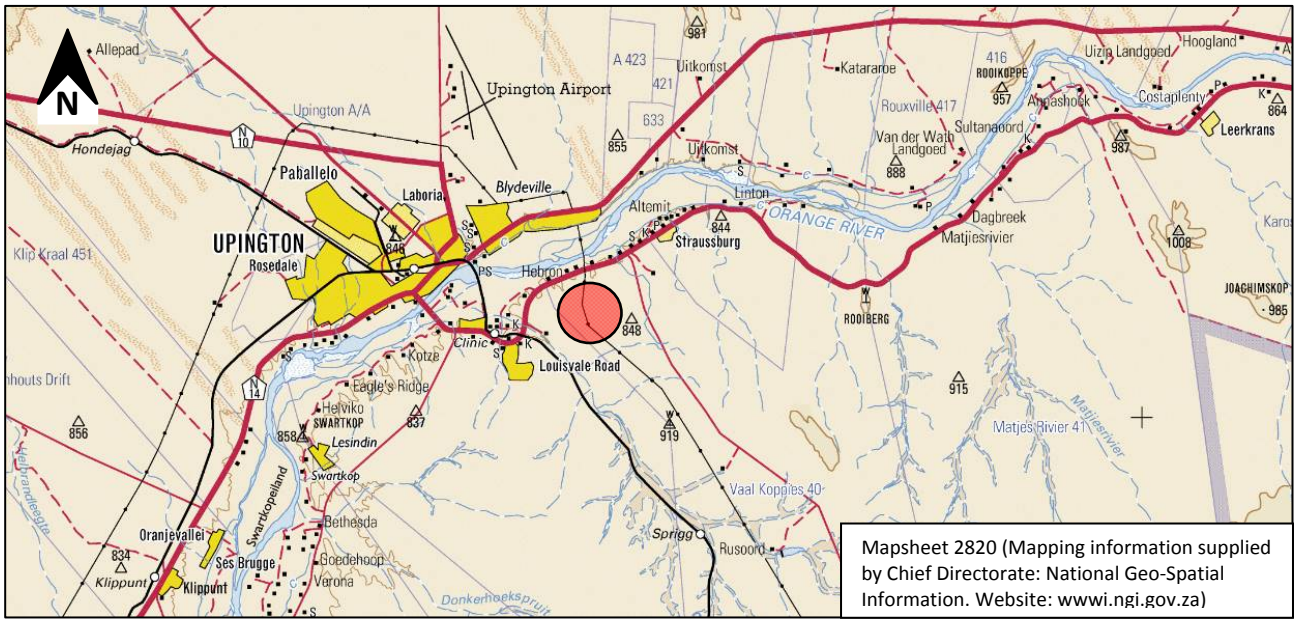

Figure 1: *Map showing the approximate location of the site (red oval).*

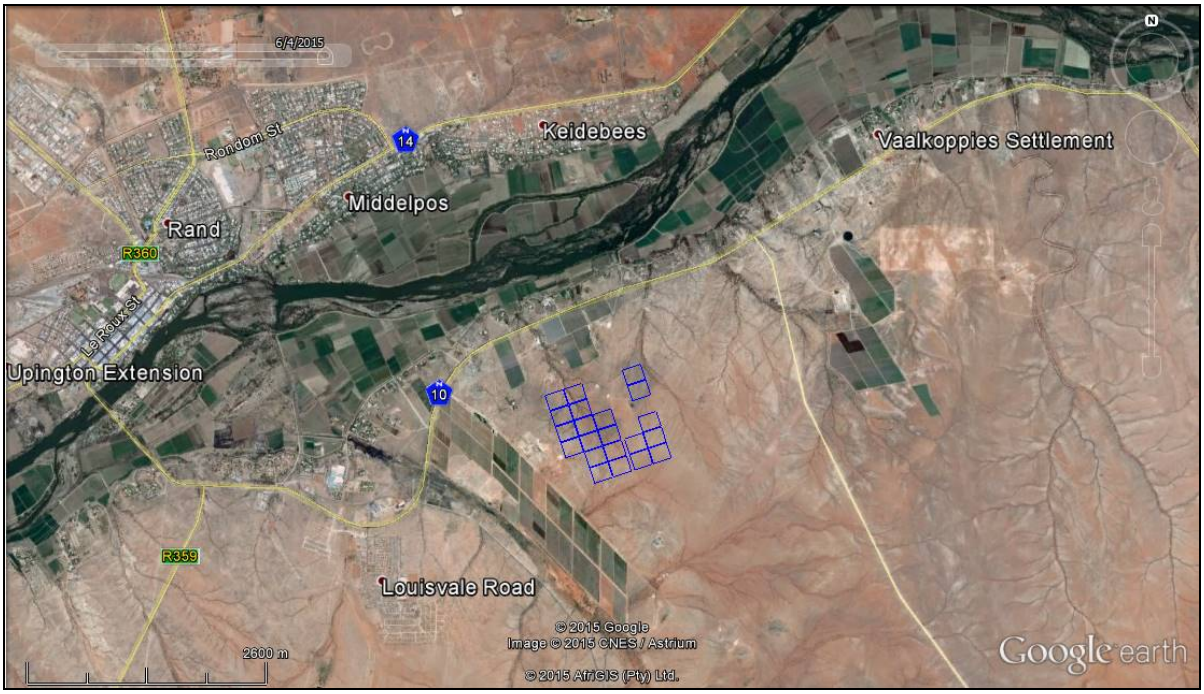

Figure 2: *Aerial view of the Upington area showing the location of the study area (proposed vineyard blocks shown in blue).*

1.1. Project description

It is intended to develop new agricultural lands for the cultivation of vineyards. The new lands will comprise of twenty-one blocks of approximately 3.4 ha each and will serve as an expansion of the existing agricultural activities on the farm.

1.2. Terms of reference

ASHA Consulting was asked to conduct a heritage impact assessment (HIA) that would meet the requirements of the relevant heritage authorities such that a decision on any further heritage work might be made.

1.3. Scope and purpose of the report

A heritage impact assessment (HIA) is a means of identifying any significant heritage resources before development begins so that these can be managed in such a way as to allow the development to proceed (if appropriate) without undue impacts to the fragile heritage of South Africa. This HIA report aims to fulfil the requirements of the heritage authorities such that a comment can be issued for consideration by the Northern Cape Department of Environment and Nature Conservation who will review the Basic Assessment Report (BAR) and grant or withhold authorisation. The HIA report will outline any mitigation requirements that will need to be complied with from a heritage point of view and that should be included in the conditions of authorisation should this be granted.

1.4. The author

Dr Jayson Orton has an MA (UCT, 2004) and a D.Phil (Oxford, UK, 2013), both in archaeology, and has been conducting Heritage Impact Assessments and archaeological specialist studies in the Western Cape and Northern Cape provinces of South Africa since 2004. He has also conducted research on aspects of the Later Stone Age in these provinces and published widely on the topic. He is accredited with the Association of Southern African Professional Archaeologists (ASAPA) CRM section (Member #233) as follows:

- Principal Investigator: Stone Age, Shell Middens & Grave Relocation; and
- Field Director: Colonial Period & Rock Art.

1.5. Declaration of independence

ASHA Consulting (Pty) Ltd and its consultants have no financial or other interest in the proposed development and will derive no benefits other than fair remuneration for consulting services provided.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;

- Section 35: palaeontological, prehistoric and historical material (including ruins) more than 100 years old;
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority; and
- Section 37: public monuments and memorials.

Following Section 2, the definitions applicable to the above protections are as follows:

- Structures: “any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith”;
- Palaeontological material: “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”;
- Archaeological material: a) “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”; b) “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”; c) “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 respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), 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”; and d) “features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found”;
- Grave: “means a place of interment and includes the contents, headstone or other marker of such a place and any other structure on or associated with such place”; and
- Public monuments and memorials: “all monuments and memorials a) “erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government”; or b) “which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.”

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list “historical settlements and townscapes” and “landscapes and natural features of cultural significance” as part of the National Estate. Furthermore, Section 3(3) describes the reasons a place or object may have cultural heritage value.

Section 38 (2a) states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted. This report fulfils that requirement.

Under the National Environmental Management Act (No. 107 of 1998; NEMA), as amended, the project is subject to a BAR. Ngwao-Boswa Ya Kapa Bokoni (Heritage Northern Cape; for built environment and cultural landscapes) and the South African Heritage Resources Agency (SAHRA for archaeology and palaeontology) are required to provide comment on the proposed project in

order to facilitate final decision making by the Northern Cape Department of Environment and Nature Conservation.

3. METHODS

3.1. Literature survey

A survey of available literature was carried out to assess the general heritage context into which the development would be set. This literature included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

3.2. Field survey

The site was subjected to a detailed foot survey on 4th June 2015 by two archaeologists (Dr Jayson Orton & Chester Kaplan). The proposed block layout for the new vineyards was provided by the environmental consultant. The entire area containing blocks was treated as the study area because it is likely that peripheral activities outside of and between the actual planted blocks could also result in impacts to heritage resources. During the survey the positions of finds were recorded on a hand-held GPS receiver set to the WGS84 datum. Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape setting of the proposed agricultural development.

3.3. Grading

Section 7 of the NHRA provides for the grading of heritage resources into those of National (Grade 1), Provincial (Grade 2) and Local (Grade 3) significance. Grading is intended to allow for the identification of the appropriate level of management for any given heritage resource. Grade 1 and 2 resources are intended to be managed by the national and provincial heritage resources authorities, while Grade 3 resources would be managed by the relevant local planning authority. These bodies are responsible for grading, but anyone may make recommendations for grading – something that is, at times, required in HIAs.

It is intended that the various provincial authorities formulate a system for the further detailed grading of heritage resources of local significance but this is generally yet to happen. Heritage Western Cape (2012), however, uses a system in which resources of local significance are divided into Grade 3A, 3B and 3C. These approximately equate to high, medium and medium-low local significance, while sites of low or very low significance (and generally not requiring mitigation or other interventions) are referred to as ungradeable.

3.4. Assumptions and limitations

The study is carried out at the surface only and hence any completely buried archaeological sites will not be readily located. Similarly, it is not always possible to determine the depth of archaeological material visible at the surface. Some parts of the study area had already been disturbed and were not physically examined. This limitation is not likely to have affected the outcome of the overall assessment.

4. PHYSICAL ENVIRONMENTAL CONTEXT

4.1. Site context

The site is in a rural context, with the immediately surrounding land being either under vineyards or completely undeveloped. A few blocks of vines were already present in the eastern part of the broader study area at the time of assessment, but these blocks were not part of the present application. A power line crosses the centre of the study area from north to south

4.2. Site description

Most of the study area was relatively flat land coated by sand and gravel (Figure 3), but the western part was more undulating and generally very rocky (Figure 4). Throughout the site rock outcrops were noted with some being granite (Figure 5) and others quartz (Figure 6). A few exposures of calcrete were also noted in places. A number of non-perrennial stream beds cross the site with channels of varying size evident (Figure 7 & 8). These feed into tributary streams which, because of agricultural development on the banks of the Orange River, no longer flow into that river.

Figure 3: *Flat, sandy surface in the southern part of the study area.*

Figure 4: *Rocky substrate in the south-western part of the study area.*

Figure 5: *Example of a granite outcrop.*

Figure 6: *Example of a quartz outcrop.*

Figure 7: *One of the smaller non-perennial streams crossing the study area.*

Figure 8: *A larger non-perrennial stream in the western part of the study area.*

5. CULTURAL HERITAGE CONTEXT

This section of the report establishes what is already known about heritage resources in the vicinity of the study area. What is found during the field survey may then be compared with what is already known in order to gain an improved understanding of the significance of the newly reported resources.

5.1. Archaeological aspects

The archaeological record in this region tends to be quite sparse with the majority of finds being isolated stone artefacts (e.g. Morris 2014; Van Schalkwyk 2014a, 2014b). However, in areas attractive to prehistoric people, such as bedrock outcrops with hollows that accumulate water after rains, artefact densities can be significantly elevated (e.g. Morris 2012). Based on findings in undisturbed areas elsewhere (e.g. Orton & Webley 2014), it is highly likely that much precolonial

occupation was once present close to the Orange River but the environment along the edge of the river is so heavily transformed that such resources would have been long lost.

5.2. Historical aspects

Upington owes its roots to a mission station started in 1875 by Reverend Christiaan Schröder. The town was founded in 1884 and originally known as Olyfenhoudtsdrif because of the many olive wood trees growing there. The town was renamed after Sir Thomas Upington, Prime Minister of the Cape between 1884 and 1886 (Wikipedia 2015). The alluvial soils along the banks of the Orange River are extensively cultivated, largely with vineyards, and this lends the area a strong sense of place.

Aerial photography from 1932 reveals that an irrigation canal was already present along the southern bank of the Orange River but its alignment has been considerably altered in subsequent years. Agriculture was already strongly practised at the time, but this was largely confined to the northern bank of the river. Although some agriculture is evident to the east and west of the study area, there was none in place within about 1 km of the study area and all was north of the canal. It is only with more modern irrigation methods that areas further from the river have been cultivated.

6. FINDINGS OF THE HERITAGE STUDY

This section describes the heritage resources recorded in the study area during the course of the project.

6.1. Palaeontology

The study area is underlain by igneous geology and has no palaeontological sensitivity.

6.2. Archaeology

The site inspection revealed archaeological resources scattered across the entire study area. Table 1 describes each observation recorded during the study, while Figure 9 shows their locations.

Table 1: *List of archaeological observation made during the field survey.*

Waypoint	Co-ordinates	Description	Archaeological significance
609	S28 28 15.0 E21 18 05.4	Slightly higher density background scatter.	Low
610	S28 28 22.2 E21 17 56.7	Quartz outcrop quarry site. Many flakes evident around the outcrop.	Low
611	S28 28 16.5 E21 17 51.6	Quartz outcrop quarry site.	Low
612	S28 28 13.6 E21 17 52.6	Quartz outcrop quarry site. There was also a hammer stone / core in an igneous cobble.	Low
613	S28 28 12.3 E21 17 54.9	Light scatter of artefacts around a granite outcrop. These are quite likely just a higher density area of background scatter.	Low

614	S28 28 06.2 E21 18 17.9	An isolated ESA hand-axe made on an igneous rock.	Low
615	S28 27 53.8 E21 18 06.5	A scatter of LSA stone artefacts and some ostrich eggshell in an open area to the north of a large mound of granite boulders.	Low-medium
616	S28 27 54.3 E21 18 07.2	A low rock shelter under a perched boulder on the northeast side of the granite outcrop. Floor had a few flakes, an upper grindstone / chopper, a lower grindstone fragment, two potsherds and a horse shoe on it. One of the potsherds had a wall thickness of about 5 mm, while the second varies between 8 mm and 10 mm thick. There is a lower grindstone and several more flaked artefacts in the open just outside the shelter.	Low-medium
617	S28 27 55.4 E21 18 06.8	A few flaked artefacts and one potsherd in a small rock shelter on the south side of the granite outcrop.	Low
618	S28 27 54.8 E21 18 07.5	A few flaked stone artefacts and two potsherds (one a neck sherd with a red burnished exterior) amongst some boulders on the east side of the granite outcrop.	Low
619	S28 27 47.8 E21 18 07.7	A very small quartz outcrop quarry with one part of the outcrop flaked.	Low
620	S28 27 54.3 E21 17 40.6	Historical graffiti chipped into a granite outcrop.	Low
621	S28 28 03.8 E21 17 42.0	Scatter of artefacts made on BIF. One hornfels artefact among them. Age uncertain.	Low
622	S28 28 07.9 E21 17 47.4	A small quartz outcrop quarry.	Low
623	S28 28 01.9 E21 17 50.9	LSA artefact scatter in an open sandy area alongside an ephemeral non-perennial stream. The artefacts are in quartz, BIF and ‘other’.	Low
624	S28 27 58.1 E21 17 51.1	LSA artefact scatter in an open sandy area alongside an ephemeral non-perennial stream. The artefacts are in quartz and ‘other’.	Low

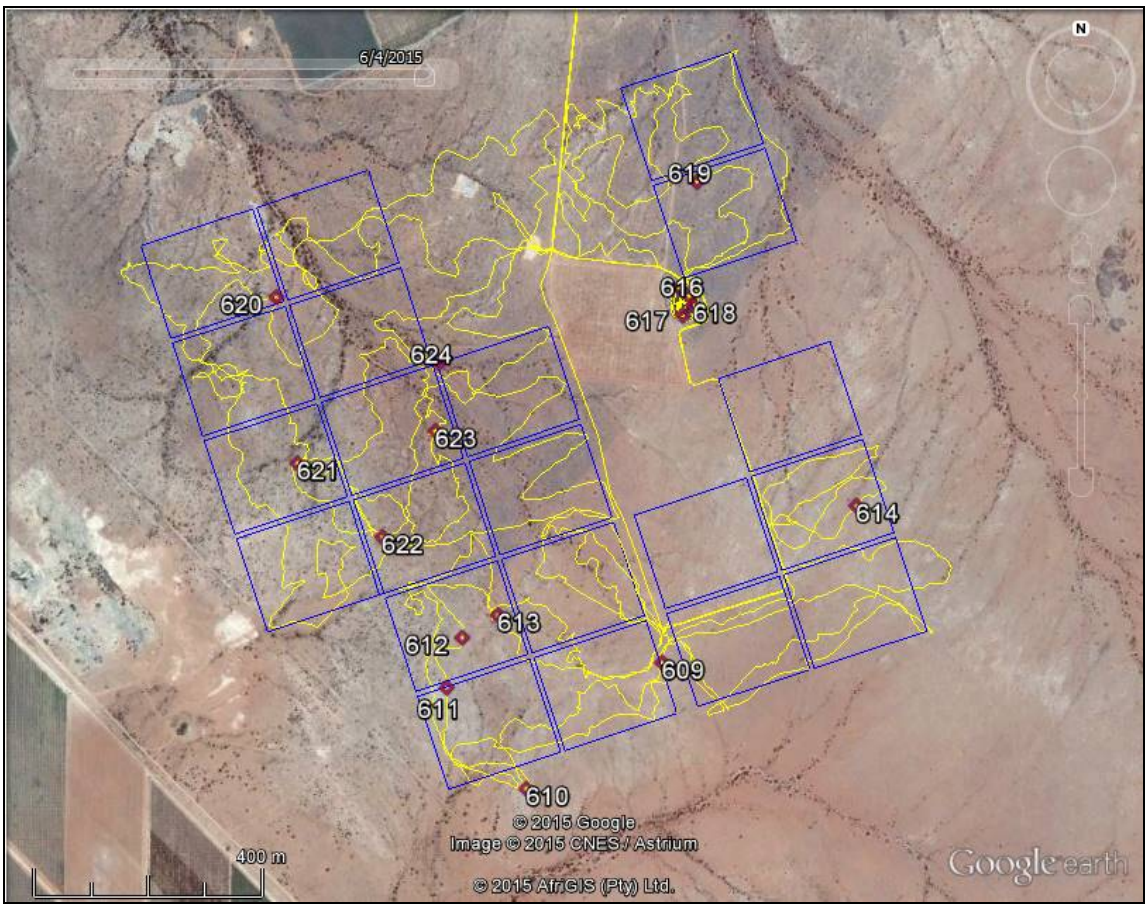

Figure 9: *Aerial view of the study area showing the proposed vineyard blocks (blue rectangles), the walk paths (yellow lines) and the way points (numbered red symbols) recorded during the field survey. Note that those blocks not walked were already disturbed at the time of the survey.*

The majority of the artefacts found were determined to be part of the background scatter in the area and are of no consequence. These were generally not recorded and mapped. Figures 10 to 16 show examples of the range of artefacts recorded. The stone artefacts date to the ESA, MSA and LSA and are made from quartz, banded iron formation (BIF) and quartzite. The majority cannot be assigned to any specific age as they do not bear diagnostic features. However, several artefacts were clearly ESA in age, while many others from their generally smaller size and degree of weathering, likely pertain to the MSA. Two historical ceramic fragments were also noted, one with blue decoration (Figure 15) and the other plain white. Some tin cans were also seen, one bearing the embossed text "PACKED IN CANADA'. These were not modern, but certainly date within the 20th century. A large number of glass fragments were also seen but these appeared to be modern, mostly pale green wine bottle glass. A few horse shoes (or fragments) were also noted.

Figures 10 & 11: *Stone artefacts considered to be part of the background scatter across the study area. Figure 11 is from waypoint 609. The large flake on the left of Figure 10 is likely ESA, while most of the remainder are probably MSA. Scale bars in 10 mm intervals.*

Figure 12: *Two views of an ESA hand-axe (way-point 614). The scale is in 10 mm intervals.*

Figure 13: *An MSA radial core. The scale bar is in 10 mm intervals.*

Figure 14: *Two views of an ESA flake that has been reused. The scale is in 10 mm intervals.*

Figure 15: *A pebble with a possibly ground surface and which has also been flaked. It is likely LSA. The scale bar is in 10 mm intervals.*

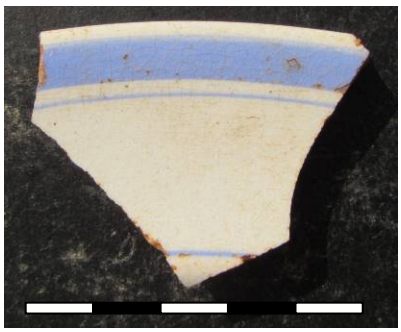

Figure 16: *One of two historical ceramic fragments seen on the site. The scale bar is in 10 mm intervals.*

A number of occurrences that were best termed archaeological sites were also recorded, although none of them was significant or contained large assemblages. Some of these were located at the large outcrop of granite boulders in the north-eastern part of the study area. Figures 17 and 18 show one of these sites and a few of the artefacts. It is likely that many more artefacts are present in the sand and grass.

Figure 17: *View of the sandy area to the north of the boulder outcrop in which the scatter at waypoint 615 was found.*

Figure 18: *Ostrich eggshell fragments (three at top left) and stone artefacts from waypoint 615. The Scale bar is in 10 mm intervals.*

More relevant to the present study are three artefact scatters found in the western part of the study area. One was in a less gravelly area (Figure 19) and had many BIF artefacts (Figure 20). Although it was not possible to be certain, the artefacts are more likely MSA than LSA. Although one cannot be certain on the evidence available, the other two scatters were more likely of LSA antiquity and both were located alongside non-perennial streams in sandy patches (Figure 21) that contrast strongly with the generally rocky substrate across the majority of the study area. Their artefacts were made of quartz, BIF and an igneous rock obtained in pebble form that would commonly be referred to as 'other' during analysis (Figure 22).

Figure 19: *The open area ay waypoint 621. There are stream beds to the left and right in the background.*

Figure 20: *The artefacts at waypoint 621. Most are in BIF but that at top right is hornfels. The scale bar is in 10 mm intervals.*

Figure 21: *The sandy area at waypoint 624. There is a non-perennial stream in the background (visible to the right).*

Figure 22: *Artefacts from waypoint 624. They are in quartz, BIF and 'other'. The scale is in 10 mm intervals.*

6.3. Historical / recent graffiti

A single instance of graffiti chipped into a granite outcrop was encountered at waypoint 620. Its age is unknown, but it does not seem very old.

Figure 23: *Graffiti at waypoint 620. The total width of the graffiti is about 65 cm.*

6.4. Cultural landscape and scenic route

The landscape around the site takes two general characters. One is the relatively nondescript character that the undeveloped lands have with the flat to gently undulating topography and very sparse vegetation cover. This is a natural landscape. The second is the highly cultivated landscape of viticulture that is so prevalent along the margins of the Orange River in this area. The very strong contrast between these two landscape types is evident in Figure 2. Because of the large number of vineyards in the general area, the proposed land use is in keeping with the surroundings and is deemed appropriate to the site. Although agriculture goes back to the early 20th century, the southern side of the river saw very little agriculture until more recently. Figure 24 shows comparative views of the landscape in 1944 and 2013. It is quite evident that the local cultural landscape is essentially modern.

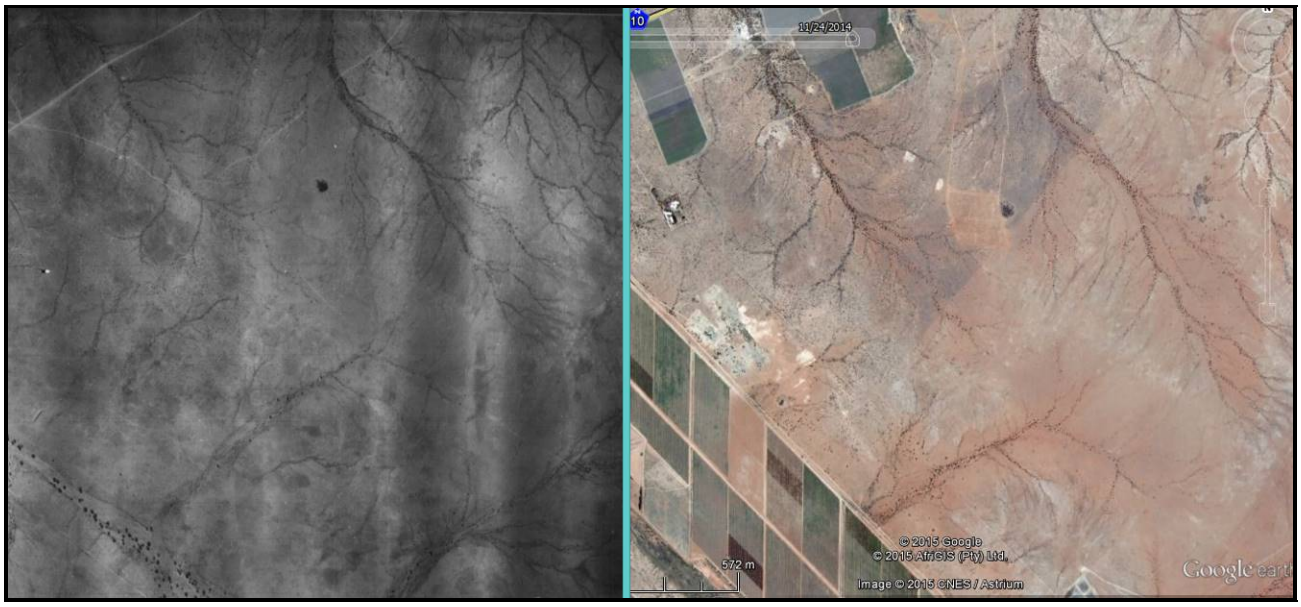

Figure 24: *Comparative views of the landscape around the study area in 1924 (left) and 2013 (right). The outcrop of dark rocks is clearly visible in the centre.*

The N10 national road runs past the northern side of the site some 800 m away. It is not considered a scenic route of great significance, although elements of the landscape can be quite spectacular for those not familiar with South Africa's arid interior.

6.5. Other heritage

There are no structures on the site and no evidence of graves was found. Although graves can be entirely unmarked and impossible to predict, it seems highly unlikely in this very rocky terrain that graves would be present.

6.6. Statement of significance

Section 38(3)(b) requires an assessment of the significance of all heritage resources. In terms of Section 2(vi) of the NHRA, ''cultural significance'' means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

The archaeological resources are deemed to have low cultural significance for their scientific value, while the local landscape and the N10 road (as a scenic route) are considered to have low-medium significance for the aesthetic value of the landscape.

6.7. Summary of heritage indicators and provisional grading

The archaeological resources are not considered to be of anything more than low significance and are deemed to be ungradeable. The natural and viticultural landscape can be considered as of low-medium significance and assigned a provision grading of 3C.

7. ASSESSMENT OF IMPACTS

The only heritage impacts requiring further consideration here are those to archaeology and the cultural landscape.

7.1. Archaeology

Direct impacts to archaeological resources will occur when ground is broken for the new planting. Artefacts will be moved around and possibly damaged during implementation of agricultural activities. However, the archaeological significance of the artefacts is very low. There are thus no fatal flaws and cumulative impacts of significance are not expected. Overall, the significance of impacts to archaeological resources is deemed to be very low (Table 1) and no mitigation or other management measures are required. No new impacts would occur during operation of the vineyard or during rehabilitation, although the latter is highly unlikely to occur in the foreseeable future.

Table 1: *Assessment of archaeological impacts for the proposed development (construction phase).*

	Before mitigation	**After mitigation**
Extent	Site specific	n/a
Intensity	Negligible	n/a
Duration	Permanent	n/a
Probability	Probable	n/a
Significance	Very low	n/a
Status	Negative	n/a
Reversible	No	
Cumulative impacts	The archaeological material present in the immediate vicinity is of very low significance and the loss of larger areas containing such material is not significant.	

7.2. Cultural landscape

The planting of vineyards would result in a replacement of the natural landscape by a cultural landscape. During the construction phase there would be very minor impacts to the scenic qualities of the landscape, but the site is quite far from the nearest public road so this negative impact is seen as being of very low significance (Table 2). There are no fatal flaws. No mitigation or management measures are suggested aside from best practice considerations such as keeping the area free of unsightly materials, litter and the like. The vineyards of the Orange River region add scenic value and sense of place to the environment; once the vineyards are established it is expected that the impacts to the landscape will be positive so long as the area is retained in a tidy, attractive state but, again, because of the distance to the nearest public road, the significance is very low. Rehabilitation would result in the landscape reverting to the status quo and no new impacts would be expected.

Table 2: *Assessment of cultural landscape impacts for the proposed development (construction phase).*

	Before mitigation	**After mitigation**
Extent	Local	Local
Intensity	Low	Negligible
Duration	Long term	Long term
Probability	Definite	Definite
Significance	Very low	Very low
Status	Negative	Positive
Reversible	Yes	
Cumulative impacts	The proposed land use is consistent with other parts of the local area. Because vineyards add scenic value to the landscape (but replace the natural landscape), the cumulative impacts are seen as being neutral in status and of very low significance.	

Table 3: Assessment of cultural landscape impacts for the proposed development (operation phase).

	Before mitigation	**After mitigation**
Extent	Local	Local
Intensity	Negligible	Negligible
Duration	Long term	Long term
Probability	Definite	Definite
Significance	Very low	Very low
Status	Neutral	Positive
Reversible	Yes	
Cumulative impacts	The proposed land use is consistent with other parts of the local area. Because vineyards add scenic value to the landscape (but replace the natural landscape), the cumulative impacts are seen as being positive but of very low significance.	

8. CONCLUSIONS

Impacts to archaeological resources and to the cultural landscape are both expected to be of very low significance with the latter being a positive impact because of the contribution to the scenic value of the local area that is expected. There are no significant issues that will require any further heritage input.

9. RECOMMENDATIONS

Because there will not be any significant impacts to heritage resources, it is recommended that the development be allowed to proceed as planned with no further heritage work being required. It should be noted, however, that if any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

10. REFERENCES

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