

Heritage Impact Assessment (including Palaeontological Desktop Assessment) for a Prospecting Right Application on the Remaining Extent of the Farm Brakfontein 276 near Prieska in the Siyathemba Local Municipality, Northern Cape Province



Prepared by

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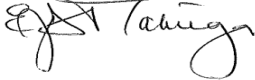
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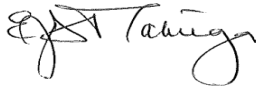
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FIELD WORK & REPORT	E. Matenga		05 July 2023

DECLARATION OF INDEPENDENCE

AHSA Pty Ltd is an independent consultancy: We hereby declare that I have no interest, be it business, financial, personal, or other vested interest in the undertaking of the proposed activity, other than remuneration for work performed in terms of the National Heritage Resources Act (No 25 of 1999).



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ABBREVIATIONS

EIA	Environmental Impact Assessment
HIA	Heritage Impact Assessment
LSA	Late Stone Age
LIA	Later Iron Age
PHRA	Provincial Heritage Resources Authority
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

EXECUTIVE SUMMARY

1. This Heritage Impact Assessment (HIA) report has been prepared on behalf of Northern Spark Trading 428 (Pty) Ltd for a prospecting right application on the Remaining Extent of the Farm Brakfontein 276 in the Siyathemba Local Municipality, Northern Cape Province.
2. The heritage sensitivity of the property is summarised as follows:
3. *The Stone Age*
As a general observation, Stone Age material occurs in the Middle Orange River Valley as background scatters which are testimony to the foraging activities of stone age communities. This pattern was observed on the Farm Brakfontein 276 (Remaining Extent) where eight (8) out of 12 occurrences recorded were lithics. There was an occasional hand-axe (Site BKN12) probably dating to the transition from the Early Stone Age to the Middle Stone Age. Otherwise, the scrapers and blades, commonly encountered date to the Middle Stone Age/Late Stone Age period. None of the sites recorded warrant further action.
4. *The Early Iron Age*
No material dating to the Iron Age was found.
5. *The Later Iron Age*
No material dating to the Later Iron Age was found.
6. *Burial grounds*
No burial grounds were found or reported on the property.
7. *Modern commercial farming*
Two rectangular stone enclosures were recorded (BKN03 & BKN05). There is no reason to destroy these structures that are likely to be treasured in the future as a footprint of the development of commercial farming in the karoo. The chassis of an

American manufactured vehicle was also noted an asset that commercial farmers would own in the 1950s and 1960s (BKN04).

8. *Ranking of sites and Risk Assessment*

	Grading	Description	No of Sites
1a	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2, or 3A heritage resources	0
1b		Burial Grounds and Graves. Public sensibilities about the sanctity of graves	0
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 2 heritage resources	0
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources	0
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	0
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	12
		TOTAL	12

9. Inventory of heritage sites.

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BKN01	29°21'34.90"S	23°15'00.80"E	MSA/LSA	On a ridge on the northwest end of the property. 1 triangular scraper/blade.	3C	No further action
BKN02	29°21'41.60"S	23°15'30.90"E	MSA/LSA	On a ridge on the northwest end of the property. 3 lithics – 1 blade, 2 scrapers	3C	No further action
BKN03	29°21'40.80"S	23°15'35.30"E	Modern	Livestock enclosure located on the foot of the ridge and edge of a sand-filled basin.	3C	Protect
BKN04	29°21'37.30"S	23°15'35.50"E	20th century	Chassis of a vehicle dating to the 1950s and 1960s	3C	No further action
BKN05	29°22'42.60"S	23°17'02.20"E	20th Century	Livestock enclosure of drystone masonry.	3C	Protect
BKN06	29°22'01.10"S	23°15'56.80"E	MSA/LSA	In a sand pan. 1 large scraper, small triangular scraper, 5 flakes	3C	No further action
BKN07	29°22'14.60"S	23°16'06.50"E	MSA/LSA	Near the base of a ridge and on the southern flank of the sand pan. 5 lithics: 2 cleavers, 1 blade and 2 flakes.	3C	No further action
BKN08	29°22'42.20"S	23°16'20.80"E	MSA/LSA	Near the base of a ridge an on the southern flank of a sand pan. 3 lithics: 2 blades and a scraper.	3C	No further action
BKN09	29°22'45.70"S	23°16'31.9"E	MSA/LSA	Near the base of a ridge and on the southern flank of a sand pan. 3 lithics: 2 blades and a scraper	3C	No further action
BKN10	29°22'20.60"S	23°16'30.10"E	MSA/LSA	In a pan-like depression flanked by ridges. 6 lithics – 2 blades, 3 scrapers and a flake.	3C	No further action
BKN11	29°22'57.00"S	23°16'51.90"E	Modern	Flat terrain, surface gravel mixed with calcrete. A long line of stones possibly marking the position of an underground installation, likely to be a water pipe.	3C	No further action
BKN12	29°22'54.30"S	23°16'04.30"E	MSA/LSA	Below a ridge in a pan-like depression. A cleaver and 3 flakes.	3C	No further action

10. Conclusions and Recommendations

There is no compelling reason to destroy the two stone enclosures that are likely to be treasured in the future as a footprint of the development of commercial farming in the Karoo. Other than the stone walls, the sites recorded warrant no further action. The Prospecting Right application can therefore be approved subject to precautions taken on the stone wall enclosures. Since archaeological deposits may be buried underground, should important artefacts or skeletal material be exposed in the area during operations, such activities should be halted, and the provincial heritage resources authority or SAHRA notified for an investigation and evaluation of the finds undertaken.

1. INTRODUCTION

This document is a Heritage Impact Assessment (HIA) report prepared on behalf of Northern Spark Trading 428 (Pty) Ltd for a Prospecting Right application on the Remaining Extent of the Farm Brakfontein 276 in the Siyathemba Local Municipality, Northern Cape Province. An HIA is required in terms of Section 38 of the National Heritage Resources Act (25/1999). This entailed a site visit and ground survey undertaken on 23 September 2022 to assess the heritage sensitivity of the area and to determine the potential adverse impacts of prospecting activities on the heritage.

Prospecting for minerals may entail the following activities:

- Open excavations and trenches
- Test pits
- Drilling
- Opening of temporary service roads
- Location of processing plant

Such physical works may result in the disturbance or destruction of heritage resources. A clear understanding of what is significant about a place when mitigating the impact of these activities.

1.1. Location and physical setting

The Remaining Extent of the farm Brakfontein 276 is situated on the north side of the R357 road from Douglas to Prieska, a distance of 60 km and 67 km respectively from the two towns. The southern part of the farm is an elevated plain with exposures of calcrete in places mixed with red-brown stones/grit. The plain hosts karoo scrub vegetation dominated by blackthorn. In a few places stands of the blackthorn *Acacia mellifera subsp. Detinens* (*haakbos* in Afrikaans) are dense, and they constrained foot surveys. In the middle of the farm there is a sand basin that controls drainage by channels starting on the high plain. The basin opens northwest towards the Orange River, a distance of 6 km. The sand deposit appears to be largely derived from windblown Kalahari sands. On the north end of the property there is

another ridge and on this side lies the Saxendrift Mine an area that has been heavily scoured by mining operations ongoing.



Fig 1. Google-Earth map shows the location of the Farm Brakfontein 276 (Remaining Extent) on the north side of the R357 road from Douglas to Prieska, Northern Cape Province.

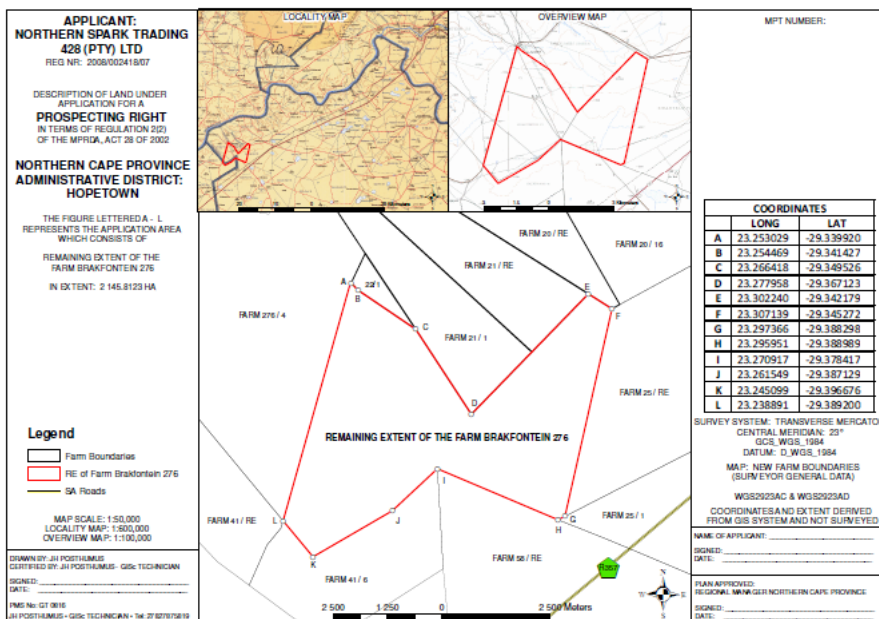


Fig 2. A standard map shows the locality of the farm Brakfontein (Remain Extent) in 3 different scales



Fig 3. On an elevated plain which occupies a southwestern portion of the farm, red gravel on the surface and blackthorn scrub in moderate density



Figure 4: View of the elevated plain from the basin



Fig 5. Sand-filled basin occupying the northern half of the property



Fig 6. The north-eastern boundary of the property, shows the grass-covered sand basin

2. LEGAL FRAMEWORK

This heritage impact assessment fulfils a public responsibility to safeguard heritage resources. This is a legal requirement in terms of Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999), which form the context in which this HIA report has been prepared.

2.1. Section 38 of NHRA: Heritage Impact Assessments

Section 38 of the NHRA states the nature and scale of development which triggers an HIA:

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—*

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any development or other activity which will change the character of a site—

*(i) **exceeding 5 000 m² in extent**¹; or*

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m² in extent; or

(e) any other category of development provided for in the regulations by SAHRA or a provincial heritage resources authority,

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

2.2. Definition of heritage (National Estate)

¹ Areal extent of the proposed development triggers the HIA.

Section 3 lists a wide range of cultural phenomena which could be defined as heritage, or the *National Estate* (3(2)). Section 3(3) outlines criteria upon which heritage value is ascribed. This Section is useful as a field checklist for the identification of heritage resources.

2.3. Protection of buildings and structures older than 60 years

Section 34 provides automatic protection for buildings and structures more than 60 years old until it can be proven that they do not have heritage value:

- (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.*

2.4. Protection of archaeological sites

Section 35 (4) of the NHRA prohibits the destruction of archaeological, palaeontological and meteorite sites:

No person may, without a permit issued by the responsible heritage resources authority—

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

2.5. Graves and burial grounds

Section 36 of the NHRA provides for the protection of certain graves and burial grounds.

Graves are generally classified under the following categories:

- Graves younger than 60 years;
- Graves older than 60 years, but younger than 100 years;
- Graves older than 100 years; and
- Graves of victims of conflict

- Graves of individuals of royal descent
- Graves that have been specified as important by the Ministers of Arts and Culture.

This study is mindful of public sensibilities about the sanctity of graves and burial grounds whether they are protected by the law or not.

2.6. The National Environmental Management Act (No 107 of 1998)

This act states that a survey and evaluation of cultural resources must be done in areas where development projects that will affect the environment will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management is a much broader undertaking to cater for cultural and social needs of people. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

2.7. The Burra Charter on Conservation of Places of Cultural Significance

Generic principles and standards for the protection of heritage resources in South Africa are drawn from international charters and conventions. In particular South Africa has adopted the **ICOMOS Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)** as a benchmark for best practices in heritage management.

3. METHODOLOGY AND THEORETICAL APPROACHES

3.1. Literature survey

A review of available literature relevant to the study included reports of previous HIAs conducted in the locality of the study area, historical books, and project planning documents. A lot of material was researched on internet portals, in particular the HIA reports that are referred to in this report have been obtained from the internet.

This author is familiar with the area having conducted a number of Heritage Impact Assessment studies in the last five years (see map in Figure 7):

Matenga E. 2019. *Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) Requested in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Mine Prospecting on a Portion of the Remaining Extent of the Farm Remhoogte 152 Prieska, Northern Cape Province.* As with Saxendrift 120, the farm Remhoogte 152 is located between the Orange River and the R357 road from Douglas to Prieska, 33 km west of Brakfontein. Scatters of stone tools comprising mainly scrapers, cores, flake waste and blades were recorded. A relatively high frequency of blades was noticed in comparison to encounters during other studies in the area. The predominant raw material was chert; dolomite was encountered in one instance. There was a significant occurrence of cores suggesting manufacturing activity. A grinding stone was a rare find.

Matenga, E. 2019. *Phase I Heritage Impact Assessment (including palaeontological assessment) requested in terms of section 38 of the national heritage resources act no 25/1999 for the proposed mine prospecting and application for a mining right on a portion of the remaining extent of the farm Kransfontein 19 & portion 2 (de rust) of the farm Kransfontein 19.* These properties are set against the south bank of the Orange River 7 km east of the farm Brakfontein. Low-density scatters of lithics were observed comprising mainly scrapers, flakes and a few blades and cores. Twenty-one (21) sites were recorded. Sites in the central part of the property indicate possible raw material source areas, but no specific workshop locales could be defined to warrant further investigation. A burial ground with 22 graves was recorded (page 8).

Matenga, E. 2017. *Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) Requested in terms of Section 38 of the National Heritage Resources Act (No 25/1999) for the Proposed Mine Prospecting on the Remaining Extent of Portion 1 of the Farm Viegulands Put 42, Prieska District, Northern Cape Province.* The farm Viegulands Put 42 is located, 10 km southwest of Brakfontein. Low-density scatters of lithics were recorded on the property. The stone tools comprised mainly scrapers, flakes and a few blades and cores. The artifacts were of a Middle Stone Age/ Late Stone Age date, except for a single occurrence of a handaxe which possibly dated to the Early Stone Age (Page 22).

Matenga, E. 2022. *Heritage Impact Assessment (including Palaeontological Desk Assessment) for a Mining Right Application on the Remaining Extent of Portion 1 (Paals Werf) of the farm Saxendrift 120, near Prieska, Northern Cape.* Saxendrift is located on the opposite side of the Orange River. Stone Age tools occurred in all but four of the 24 recorded instances. Typology is dominated by scrapers, while there are a few blades. Handaxes were recorded in two instances; A majority of the finds date from the Middle Stone Age (MSA) to the Late Stone Age (LSA).

Matenga, E. 2022. *Heritage Impact Assessment for a Mining Right Application on Portion 23 (a Portion of Portion 15) of the Farm Lanyon Vale 376 near Douglas in the Siyancuma Local Municipality, Northern Cape.* Portion 23 of the farm Lanyon Vale 376 is located 9 km north of the farm Brakfontein on the north bank of the Orange River. Eleven (11) occurrences were recorded in this instance. The Stone Age material comprises scrapers, blades, cores, and flakes typologically dating to the Middle Stone Age/Late Stone Age period. A single occurrence of a cleaver and hand-axe may represent a transitional period from the Early Stone Age to the Middle Stone Age. A burial ground was known and recorded on the farm with ±30 cairn burials arranged in two rows. The deceased were farm workers.

Matenga, E. 2022. *Heritage Impact Assessment for a Mining Right Application on Portion 3 (Beatrys) of the Farm Lanyon Vale 376 near Douglas in the Siyancuma Local Municipality, Northern Cape.* Portion 3 (Beatrys) is located 10 km north of the farm Brakfontein on the north bank of the Orange River. A burial ground with at least 7 graves and a portion with rectangular settings of stones was recorded.

Other researchers have undertaken HIA studies in the area:

De Cock, S & G Narainne. 2016. *Integrated Heritage Impact Assessment in terms of section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for the proposed development of Humansrus Solar PV Facility 3 on the Farm Humansrus 147, Prieska District and Pixley Ka Seme District.* The study reported a diffuse spread of ESA and MSA stone artefacts across the study area for Humansrus Solar PV Facility 3. There are no buildings or graveyards on the property (page 12);

Mlilo, T. 2018. *Phase I Archaeological Impact Assessment for the proposed 958m 22kv De-Villiers Powerline in the Douglas Area within Siyancuma Local Municipality in the Northern Cape Province.* The study identified sparse scatters of stone tools occurring as isolated finds mostly along streams. These included cores, scrapers, flakes, and flake blades (page 30).

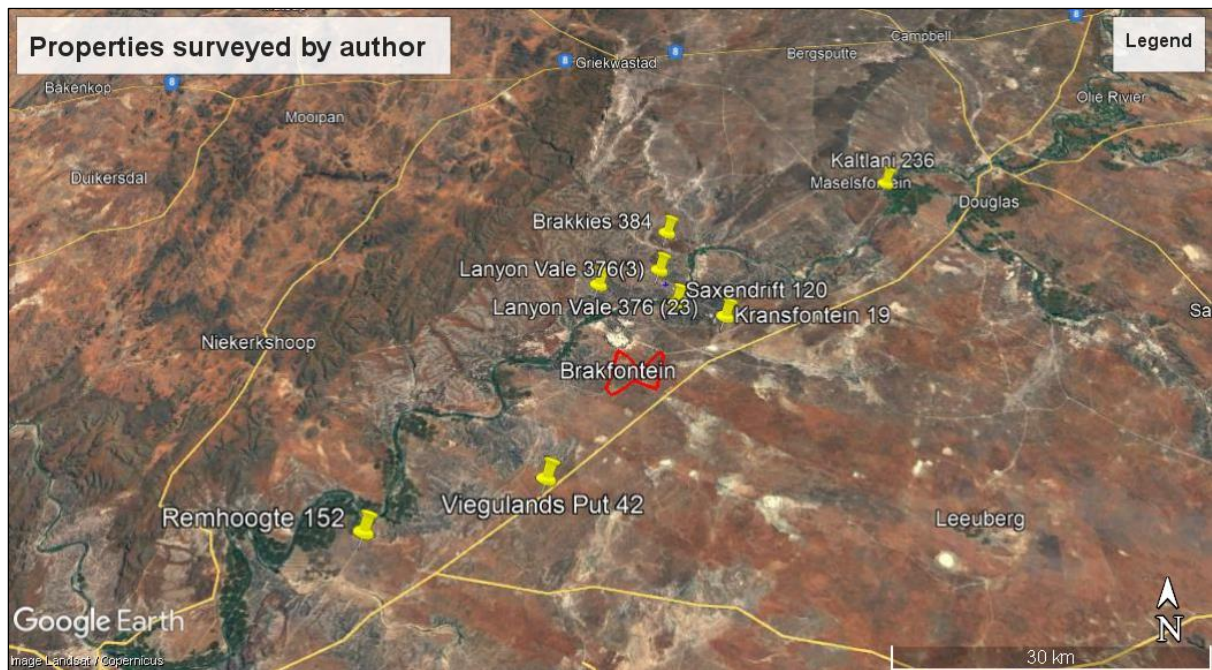


Figure 7: Google Earth map shows properties surveyed by the author between 2017 and 2022

3.2. Fieldwork

The author and a field assistant conducted a ground survey on 23 September 2022. The ground survey was facilitated by a vehicle and as we drove along the farm tracks areas were chosen for intensive foot surveys. Photographs were taken to show the general character of the landscape as well as artefacts and features seen. A Catalogue of the findings is presented in Appendix 1 of this report. See Figure 8 for a map of the track log.

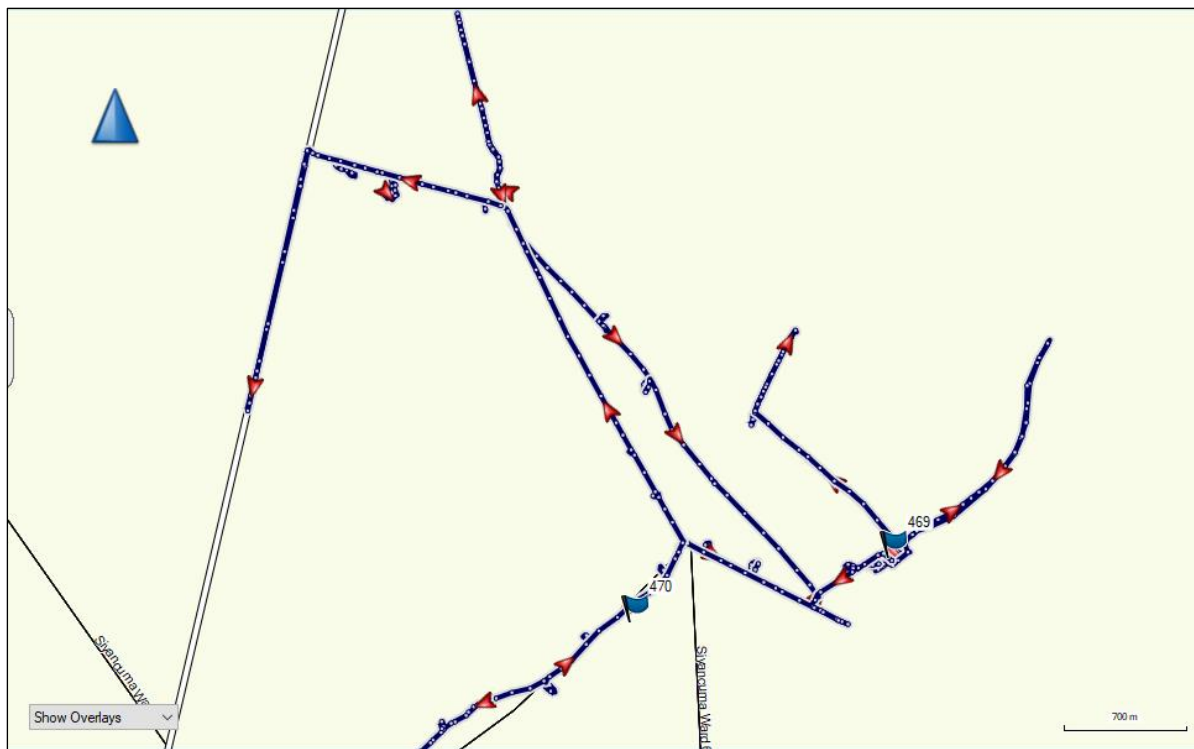


Figure 8: Map of the tracklog

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa is presented here as a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest.

4.1. Cultural sequence summary²

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens</i> including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.

² Adapted from Exigo Consultancy. 2015. Frances Baard District Municipality: Proposed Nkandla Extension 2 Township Establishment, Erf 258 Nkandla, Hartswater, Northern Cape Province.

Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier)	Holocene	Iron Age Farmers	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Later Iron Age 900ADff	Holocene	Iron Age Farmers, emergence of complex state systems	Typically distinct ceramics, evidence of long distance trade and contacts
(ii) Mapungubwe (K2)	1350AD		Metals including gold, long distance exchanges
(ii) Historical period	Tswana / Sotho, Nguni people	Iron Age Farmers	Stone walls Mfecance / Difaqane
(iii) Colonial period	19 th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

4.2. Appearance of hominids

South Africa has yielded a very good record of fossil hominids. These are remains of proto-humans which appeared in South Africa more than 3 million years ago. Three famous sites in Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and inscribed as UNESCO World Heritage Site as a serial nomination.³ One of these sites Taung near Vryburg is 250 km northeast of the study area. To my knowledge no hominid sites have been reported in the vicinity of the study area.

4.3. The Early Stone Age

4.3.1. The Early Stone Age (2 million to 250 000 years BP)

The Stone Age dates back more than 2 million years representing a more explicit beginning of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early people made stone and bone implements. Material evidence is found in caves, rock-shelters and on river sides and edges of streams, and very rarely seen in open country.⁴ Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). These tool industries have been called Oldowan and Acheulean and were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. Acheulean artefacts are usually found near sites where they were

³ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.

⁴ <http://archaeology.about/od/bterms/g/bordercave.htm>

manufactured and thus in close proximity to the raw material or at kill sites. The early hunters are classified as hominids meaning that they had not evolved to the present human form.

Progressively a good profile of the Stone Age in the Northern Cape has been reconstructed from many heritage impact assessments that have been conducted in recent years. Locals along and adjacent to the Orange – Vaal River systems have yield evidence of great interest.⁵ Further north the Wonderwerk Cave has become a benchmark for the characterisation of the Stone Age. Excavations reveal a long sequence of occupation spanning the Early (ESA), Middle (MSA) and Later Stone Ages.⁶

4.3.2. Middle Stone Age (MSA) [250 000 yrs – 30 000 yrs BP]

The Middle Stone Age (MSA), which appeared 250 000 years ago, is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland. It is also believed that by then, humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. Furthermore, there is archaeological evidence from some of the caves indicating that people had mastered the art of making fire.⁷

4.3.3. Later Stone Age (LSA)[40 000 yrs to ca2000 yrs BP]

By the beginning of the LSA, humans are classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. LSA technology is characterised by microlithic scrapers and segments made from very fine-grained rock. Spear hunting continued, but LSA people also hunted small game with bows and poisoned arrows. Because of poor preservation, open sites become of less value compared to rock shelters. The

⁵ Morris, D. 2009. Phase 1 Archaeological Impact Assessment at Bucklands Settlement near Douglas, Northern Cape, p3.

⁶ <http://www.southafrica.net/za/en/articles/entry/article-southafrica.net-the-wonderwerk-cave>.

⁷ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

practitioners of the Late Stone Age as with Rock Art are ancestors of the Khoisan.⁸ A number of rock engravings have been reported in the vicinity of Lime Acres and Danielskuil 130 km north of the farm Brakfontein.⁹

4.4. The Iron Age Culture [ca. 2000 years BP]

The Iron Age culture supplanted the Stone Age at least 2000 years ago, associated with the introduction of farming and use of several metals and pottery. Iron Age communities are believed to have been speakers of Bantu languages who practiced agriculture and kept domestic animals such as cattle, sheep, goat and chickens. There is however increasing evidence that sheep and probably cattle as well might have moved into the area much earlier than the Iron Age.¹⁰

4.4.1. Early Iron Age

According to Huffman (2007) there were two migration streams of Early Iron Age (EIA) communities converging in South Africa, one originating in eastern Africa which has been called the *Urewe-Kwale Tradition* (or the eastern stream) and another from the west, spreading through Zambia and Angola, which he termed the *Kalundu Tradition* (or western stream). An alternative perspective is to see the IA as a gradual spread or expansion of settlement of different groups of people indigenous to the continent which took place over a long period of time. There are few if any sites attributed to the EIA in the western parts of the country. Most IA settlements are concentrated in the eastern part of South Africa. The woodland zone was preferred for settlement, but there is strong possibility that transhumant pastoralism was practiced and seasonal hunting camps were established in the inhospitable western regions of the country.

4.4.2. The Later Iron Age

⁸ Gaigher, S. 2012. Heritage Impact Assessment Report for the proposed establishment of the Prieska Solar Energy facility located east of Prieska on Portion 3 of the Farm Holsoot 47, Northern Cape Province, p15.

⁹ Collins, S. 1973. Rock-engravings of the Danielskuil Townlands. *South African Archaeological Bulletin* 109-110: 49-57.; Eastwood, E.B. & Smith, B.W. 2005. Fingerprints of the Khoekhoen: geometric and handprinted rock art in the Central Limpopo Basin, southern Africa. *South African Archaeological Society Goodwin Series* 9: 63–76.

¹⁰ Evers, T. M. 1988. *Recognition of Groups in the Iron Age of Southern Africa*. Unpublished PhD Thesis, University of Witwatersrand. Huffman 2007. *A Handbook on the Iron Age*. Scottsville: UKZN Press

The LIA is marked by the presence of extensive stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.¹¹

4.5. Historical Context

The study area is historically home to the several groups of Tswana speakers descending from the Iron Age and possibly with some having roots in the Stone Age communities which had inhabited the area for several millennia. Prieska was established in the 1870s becoming a municipality in 1878. The town is historically associated with a Cape Afrikaner revolt in 1900, which was suppressed by Lord Kitchener. This happened at the time of the Anglo-Boer War, and the rebels involved were moved to the Transvaal. As a precaution the British forces established a fort on the hills outside the town. There is a British Military memorial garden in town.¹²

The above is context for the identification of heritage resources in the study area.

5. FINDINGS OF THE HERITAGE SURVEY

The heritage sensitivity of the property is summarised as follows:

5.1. The Stone Age

Stone Age material occurs on the Middle Orange River Valley as background scatters which are testimony to the foraging activities of stone age communities. This pattern was also observed on the Farm Brakfontein 376 (Remaining Extent) where eight (8) out of 12 occurrences recorded were lithics. There was an occasional hand-axe (BKN12) probably dating to the transition from the Early Stone Age to the Middle Stone Age. Otherwise, the

¹¹ De Jong 2010: De Jong, R.C. 2010. Heritage impact assessment report: proposed manganese and iron ore mining right application in respect of the remainder of the farm Paling 434, Hay Registration Division, Northern Cape. Unpublished report prepared for Kai Batla Minerals Industry Consultants. Pretoria: Cultmatrix, p 36

¹² Gaigher, S. 2012. Heritage Impact Assessment Report for the proposed establishment of the Prieska Solar Energy facility located east of Prieska on Portion 3 of the Farm Holsoot 47, Northern Cape Province.

scrapers and blades, commonly encountered date to the Middle Stone Age/Late Stone Age period. None of the sites were found to warrant further action.

5.2. The Early Iron Age

No material dating to the Iron Age was found.

5.3. The Later Iron Age

No material dating to the Later Iron Age was found.

5.4. Burial grounds

No burial grounds were found or reported on the property.

5.5. Modern commercial farming

Two rectangular stone enclosures were recorded (BKN03 & BKN05). There is no reason to destroy these structures that are likely to be treasured in the future as a footprint of the development of commercial farming in the karoo. The chassis of an American manufactured vehicle was also noted an asset that commercial farmers would own in the 1950s and 1960s (BKN04).

5.6. Ranking of sites and Risk Assessment

Table 2. Ranking of sites

	Grading	Description	No of Sites
1a	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2, or 3A heritage resources	0
1b		Burial Grounds and Graves. Public sensibilities about the sanctity of graves	0
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 2 heritage resources	0

3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources	0
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	0
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	12
		TOTAL	12

Table 3: Inventory of heritage sites.

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BKN01	29°21'34.90"S	23°15'00.80"E	MSA/LSA	On a ridge on the northwest end of the property. 1 triangular scraper/blade.	3C	No further action
BKN02	29°21'41.60"S	23°15'30.90"E	MSA/LSA	On a ridge on the northwest end of the property. 3 lithics – 1 blade, 2 scrapers	3C	No further action
BKN03	29°21'40.80"S	23°15'35.30"E	Modern	Livestock enclosure located on the foot of ridge and on the edge of a sand -filled basin.	3C	Protect
BKN04	29°21'37.30"S	23°15'35.50"E	20th century	Chassis of a vehicle dating to the 1950s and 1960s	3C	No further action
BKN05	29°22'42.60"S	23°17'02.20"E	20th Century	Livestock enclosure of drystone masonry.	3C	Protect
BKN06	29°22'01.10"S	23°15'56.80"E	MSA/LSA	In a sand pan. 1 large scraper, small triangular scraper, 5 flakes	3C	No further action
BKN07	29°22'14.60"S	23°16'06.50"E	MSA/LSA	Near the base of a ridge an on the southern flank of the sand pan. 5 lithics: 2 cleavers, 1 blade and 2 flakes.	3C	No further action
BKN08	29°22'42.20"S	23°16'20.80"E	MSA/LSA	Near the base of a ridge an on the southern flank of a sand pan. 3 lithics: 2 blades and a scraper.	3C	No further action
BKN09	29°22'45.70"S	23°16'31.9"E	MSA/LSA	Near the base of a ridge and on the southern flank of a sand pan. 3 lithics: 2 blades and a scraper	3C	No further action
BKN10	29°22'20.60"S	23°16'30.10"E	MSA/LSA	In a pan-like depression flanked by ridges. 6 lithics – 2 blades, 3 scrapers and a flake.	3C	No further action
BKN11	29°22'57.00"S	23°16'51.90"E	Modern	Flat terrain, surface gravel mixed with calcrete. A long line of stones possibly marking the position of an underground installation, likely to be a waterpipe.	3C	No further action
BKN12	29°22'54.30"S	23°16'04.30"E	MSA/LSA	Below a ridge in a pan-like depression. A cleaver and 3 flakes.	3C	No further action

5.7. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework

Section 38 of the NHRA

Section 38 (Subsection 3) of the National Heritage Resources Act also provides a schedule of tasks to be undertaken in an HIA process:

Section 38(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7

There are no Grade I or Grade II sites on the property.

(c) An assessment of the impact of the development on such heritage resources

The heritage sites recorded are of low significance, although there is no compelling reason to destroy stone enclosures (BKN03 and BKN05), which are likely to be treasured in the future as a footprint of the development of commercial farming in the karoo.

(i) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

There is a remarkable shift in investment towards mining in the Northern Cape. This brings much needed diversification of the local economy that has been dependent on farming. In recent years, the Karoo region has been hit by droughts probably linked to a major shift in the climate.

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

Public participation was undertaken within the ambit of the broader environmental impact assessment process, a basic assessment report (BAR) which will be submitted with this HIA Report.

(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives

The stone enclosures must be protected. A 30 m buffer must be reserved.

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

In the event of the discovery of other heritage resources deemed of significance, the Provincial Heritage Resources Authority or SAHRA will be informed immediately and an archaeologist or heritage expert called to attend.

5.8. Risk Assessment of the findings

EVALUATION CRITERIA	RISK ASSESSMENT
Description of the potential impact	Negative impacts range from partial to destruction of surface and under-surface movable/immovable relics.
Nature of Impact	Negative impacts can both be direct and indirect.
Legal Requirements	Sections 34, 35, 36, 38 of National Heritage Resources Act No. 25 (1999).
Stage/Phase	Prospecting for minerals (test pits, drilling).
Extent of Impact	Drilling, excavations and the opening of roads may result in damage and destruction of important archaeological resources above and below the surface not seen during the survey.
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.

Level of significance of impacts before mitigation	Medium.
Mitigation measures	If archaeological or other heritage relics deemed of high significance are found, SAHRA or the Provincial Heritage Authority will be notified immediately and a heritage specialist will be called to attend. The Site Manager will keep a heritage Chance Finds Procedure.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

6. CONCLUSION AND RECOMMENDATIONS

There is no compelling reason to destroy the two stone enclosures that are likely to be treasured in the future as footprint of the development of commercial farming in the karoo. Other than the stone walls, the sites recorded warrant no further action. The prospecting right application can therefore be approved subject to precautions taken about the stone walls. Since archaeological deposits may be buried underground, should important artefacts or skeletal material be exposed in the area during operations, such activities should be halted, and the provincial heritage resources authority or SAHRA notified for an investigation and evaluation of the finds undertaken.

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Legislation and Policies

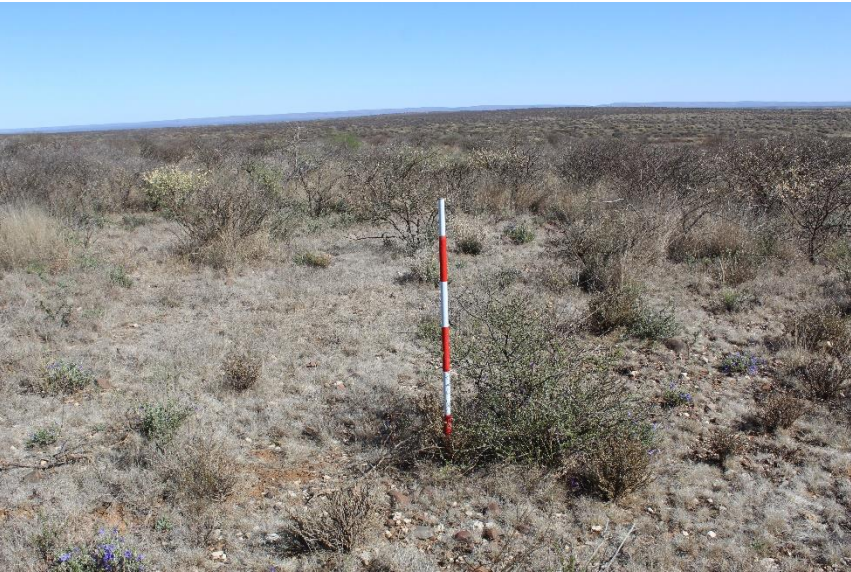
National Heritage Resources Act (No 25: 1999)

National Environmental Management Act (No 107/1998)

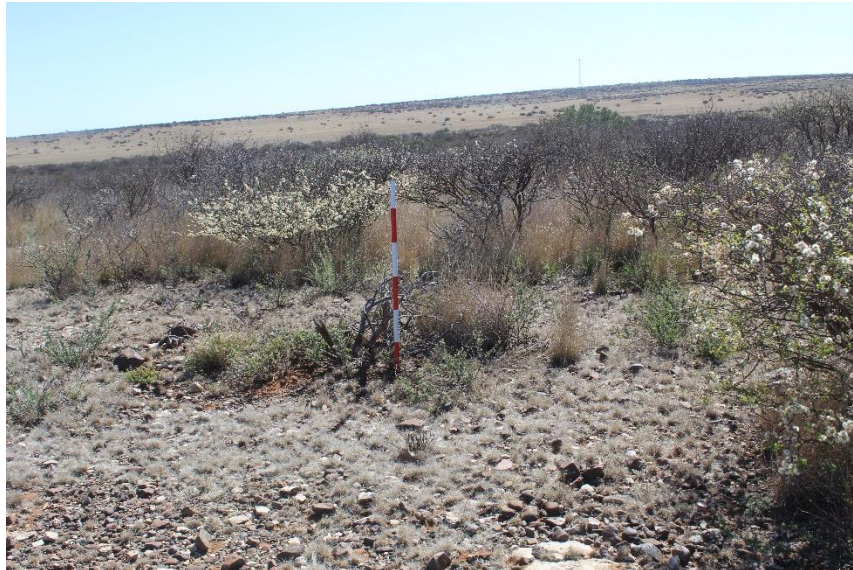
ICOMOS Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)

The ICOMOS Charter for the Conservation of Historic Towns and Urban Areas (the Washington Charter 1987)

APPENDIX I: BRAKFORTEIN - CATALOGUE OF HERITAGE SITES

SITE NO	COORDINATES		PERIOD
BKN01	29°21'34.90"S	23°15'00.80"E	MSA/LSA
<div style="text-align: center;">   </div>			
<p>DESCRIPTION: On a ridge on the northwest end of the property. 1 triangular scraper/blade.</p>			
HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA		
MITIGATION	No further action is required.		

SITE NO	COORDINATES		PERIOD
BKN02	29°21'41.60"S	23°15'30.90"E	MSA/LSA




DESCRIPTION: On a ridge on the northwest end of the property. 3 lithics – 1 blade, 2 scrapers.

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
BKN03	29°21'40.80"S	23°15'35.30"E	Modern
			
<p>DESCRIPTION: Livestock enclosure located on the foot of ridge and on the edge of a sand-filled basin.</p>			
HERITAGE SIGNIFICANCE		Modern commercial farming	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
BKN04	29°21'37.30"S	23°15'35.50"E	20 th century



DESCRIPTION: Chassis of a vehicle dating to the 1950s and 1960s.

HERITAGE SIGNIFICANCE

Age of commercial farmers

MITIGATION

Collectible

SITE NO	COORDINATES		PERIOD
BKN05	29°22'42.60"S	23°17'02.20"E	20 th Century



DESCRIPTION: Livestock enclosure of drystone masonry.

HERITAGE SIGNIFICANCE	Commercial farming infrastructure
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MITIGATION	No further action is required.
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SITE NO	COORDINATES		PERIOD
BKN06	29°22'01.10"S	23°15'56.80"E	MSA/LSA



DESCRIPTION: In a sand pan. 1 large scraper, small triangular scraper, 5 flakes

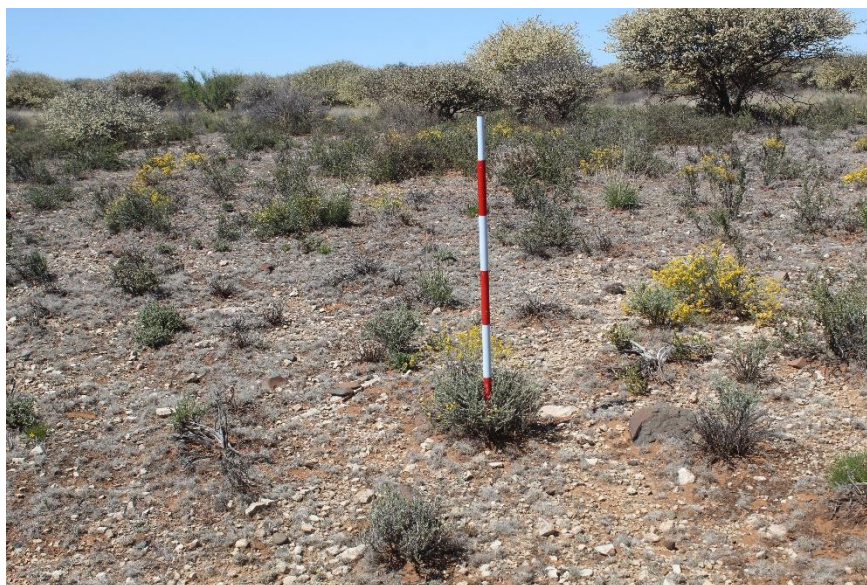
HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
BKN07	29°22'14.60"S	23°16'06.50"E	MSA/LSA



DESCRIPTION: Near the base of a ridge an on the southern flank of a sand pan. 5 lithics: 2 cleavers, 1 blade and 2 flakes.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
BKN08	29°22'42.20"S	23°16'20.80"E	MSA/LSA



DESCRIPTION: Near the base of the ridge and on the southern flank of a sand pan. 3 lithics: 2 blades and a scraper.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
BKN09	29°22'45.70"S	23°16'31.9"E	MSA/LSA



DESCRIPTION:

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION

No further action is required.

SITE NO	COORDINATES		PERIOD
BKN10	29°22'20.60"S	23°16'30.10"E	MSA/LSA




DESCRIPTION: In a pan-like depression flanked by ridges. 6 lithics – 2 blades, 3 scrapers and a flake.

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
BKN11	29°22'57.00"S	23°16'51.90"E	Modern
			
<p>DESCRIPTION: Flat terrain, surface gravel mixed with calcrete. A long line of stones possibly marking the position of an underground installation, likely to be a waterpipe.</p>			
HERITAGE SIGNIFICANCE	-		
MITIGATION	No further action required.		

SITE NO	COORDINATES		PERIOD
BKN12	29°22'54.30"S	23°16'04.30"E	MSA/LSA



DESCRIPTION: On an elevated plain in the southwestern part of the property. Scattered acacia scrub. A hand axe.

HERITAGE SIGNIFICANCE

Possibly dating to the Early Stone Age (ESA).

MITIGATION

No further action required.

GLOSSARY

Archaeological material: remains resulting from human activity left as evidence of their presence which, as proscribed by South African heritage legislation, are older than 100 years, which are in the form of artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Artefact/Ecofact: Any movable object that has been used, modified or manufactured by humans.

Catalogue: An inventory or register of artefacts and/or sites.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This includes intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: “the combined works of nature and man” and demonstrate “the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external”.

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 2Myr yrs – 250 000 yrs. before present.

Early Iron Age: Refers cultural period of the first millennium AD associated with the introduction of metallurgy and agriculture in Eastern and Southern Africa

Later Iron Age: Refers to the period after 1000AD marked by increasing social and political complexity. Evidence of economic wealth through trade and livestock keeping especially cattle

Excavation: A method in which archaeological materials are extracted, involving systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

Grave: a place of burial which include materials such as tombstone or other marker such as cross etc.

Historic material: means remains resulting from human activities, which are younger than 100 years and no longer in use, which include artefacts, human remains and artificial features and structures.

Intangible heritage: Something of cultural value that is not primarily expressed in a material form e.g. rituals, knowledge systems, oral traditions, transmitted between people and within communities.

Historical archaeology: the study of material remains from both the remote and recent past in relationship to documentary history and the stratigraphy of the ground in which they are found; or archaeological investigation on sites of the historic period. In South Africa it refers to the immediate pre-colonial period, contact with European colonists and the modern industrial period.

In situ material: means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Later Iron Age: The period from the beginning of the 2nd millennium AD marked by the emergence of complex state society and long-distance trade contacts.

Late Stone Age: The period from ± 30 000-yr. to the introduction of metals and farming technology

Middle Stone Age: Various stone using industries dating from ± 250 000 yr. - 30 000 yrs. ago

Monuments: architectural works, buildings, sites, sculpture, elements or structures of an archaeological nature, inscriptions, cave dwellings which are outstanding from the point of view of history, art and science.

Place: means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.

Preservation: means protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Sherd: ceramic fragment.

Significance grading: Grading of sites or artefacts according to their historical, cultural or scientific value.

Site: a spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.