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 MINING RIGHT ON A PORTION OF THE REMAINING EXTENT OF THE FARM KRANSFONTEIN 19 & PORTION 2 (DE RUST) OF THE FAR KRANSFONTEIN 19, PRIESKA DISTRICT, NORTHERN CAPE PROVINCE

Prepared by

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Monday, 24 September 2018

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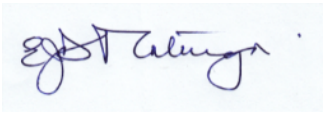
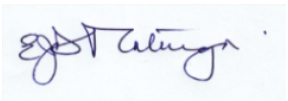
FIELD WORK & REPORT	E. Matenga		24/09/2018

DECLARATION OF INDEPENDENCE

AHSA Pty Ltd is an independent consultancy: I 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 fair remuneration for work performed, in terms the National Heritage Resources Act (No 25 of 1999).

DISCLAIMER

All possible care was taken to identify and document heritage resources during the survey in accordance with best practices in archaeology and heritage management. However it is always possible that some hidden or subterranean sites are overlooked during a survey. AHSA will not be held liable for such oversights and additional costs thereof.



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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

GLOSSARY

Archaeological material: remains older than 100 years, resulting from human activities left as evidence of their presence, which are in the form of structure, artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces etc.

Artefact: 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 or place including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistoric 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. These include intangible resources such as religious practices, ritual ceremonies, oral histories, memories, indigenous knowledge.

Cultural landscape: a stretch of land that reflects "the combined works of nature and man" and demonstrates "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".[1]

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management and sustainable utilization for present and future generations.

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

[1] This definition is taken from current terminology as listed on the World Heritage Convention website, URL: http://whc.unesco.org/en/culturallandscape/#1 accessed 17 March 2016.

Early Iron Age: refers to cultural remains dating to the first millennium AD associated with the introduction of metallurgy and agriculture.

Early Stone Age: a long and broad period of stone tool cultures with chronology ranging from around 3 million years ago up to the transition to the Middle Stone Age around 250 000 years ago.

Excavation: a method in which archaeological materials are extracted from the ground, which involves systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

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

Historical: means belonging to the past, but often specifically the more recent past, and often used to refer to the period beginning with the appearance of written texts.

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

***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 years ago up until the introduction of metals and farming technology around 2000 years ago, but overlapping with the Iron Age in many areas up until the historical period.

Middle Stone Age: a period of stone tool cultures with complex chronologies marked by a shift towards lighter, more mobile toolkit, following the Early Stone Age and preceding the Late Stone Age; the transition from the Early Stone Age was a long process rather than a specific event, and the Middle Stone Age is considered to have begun around 250 000 years ago, seeing the emergence of anatomically modern humans from about 150 000 years ago, and lasting until around 30 000 years ago.

Monuments: architectural works, buildings, sites, sculpture, elements, structures, inscriptions or cave dwellings of an archaeological nature, 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 the protecting and maintaining of the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Rock Art: various patterned practices of placing markings on rock surfaces, ranging in Southern Africa from engravings to finger paintings to brush-painted imagery.

Sherds: ceramic fragments.

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.

Site Recording Template: a standard document format for site recording.

EXECUTIVE SUMMARY

1. This document is a Heritage Impact Assessment (HIA) Report prepared in support of a mine prospecting right on a Portion of the Remaining Extent of the Farm Kransfontein 19 & Portion 2 (De Rust) of the Farm Kransfontein 19 in the Prieska District, Northern Cape Province.

2. The Report fulfils an onus placed on developers to safeguard heritage resources. This obligation has been legislated with Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) forming the context in which this HIA report has been prepared.

3. This entailed a site visit on 10-11 September 2018 and a ground survey to assess the heritage sensitivity of the area and to determine potential adverse impacts of the proposed activities on the heritage.

4. The Farm Kransfontein 19 is straddles the R357 highway from Douglas to Prieska a distance of 50km and 75km respectively from the two towns.

5. The property may be described as forming part of a typical Karoo cultural landscape characterised by flat and wide open spaces with sparse, low-growing vegetation. From an archaeological standpoint, the area was used by hunter-gatherers throughout the three epochs of the Stone Age and later the transition to stock farming (cattle and sheep) possibly starting during the Late Stone Age. Afrikaner farmers entered the area in the 1830s with a larger population of stock and established permanent farmsteads as focal points of commercial farms. The farmhouse and associated buildings will not be affected by the proposed activities, and generally no significant historical attributes in the landscape will be lost.

6. *The Stone Age*
   Twenty-one (21) Stone Age sites were recorded all of which exhibit widespread scatter of lithics. The stone tools, which comprise mainly cores, scrapers, flakes and a few blades are spread throughout the property without any significant

concentrations to demonstrate regular activity. Areas in the central part of the property indicate possible raw material source areas, but no specific settlement locales could be defined to warrant further investigation.

7. *The Iron Age*
   No Iron Age sites were found on the property.

8. *Early commercial farming*
   The farmhouse and storehouse take forms typical in the area and exemplify the rural lifestyle of commercial farmers. These will not be affected by the proposed development.

9. *Burial ground*

There is a burial ground (KFN24) containing 22 graves protected by barbed wire fencing reinforced by exotic fencing bushes. Graves / burial grounds are protected in terms of Section 36 of the National Heritage Resources Act.

10. *Significance ranking of findings*

The significance ranking (with a colour scheme) refers to significance of the heritage resources weighed against potential impacts and risks of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

	RANKING	SIGNIFICANCE	NO OF SITES
1	High	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	0
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	22
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	1
		TOTAL	**24**

11. Inventory of heritage sites.

SITE NO	LATITUDE	LONGITUDE	PERIOD	TYPE	DESCRIPTION	RANKING
KFN01	29°20'02.6"S	23°21'18.4"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Calcretic grit. Flake/waste material, blade. Jaspilite.	Medium B
KFN02	29°19'57.3"S	23°21'12.6"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Red-brown grit. Flake tools, chert.	Medium B
KFN03	29°19'51.7"S	23°21'18.0"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Gritty surface with calcrete. Flake material, core and scrapers.	Medium B
KFN04	29°19'55.1"S,	23°21'24.5"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Calcrete. Chert core/scraper, flake waste.	Medium B
KFN05	29°20'01.9"S	23°21'31.4"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Waste material and jaspilite stone.	Medium B
KFN06	29°20'07.0"S	23°21'28.2"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Fine soils with heavy lime content. Scraper and waste material.	Medium B
KFN07	29°19'56.54"S	23°21'56.03"E	MSA/LSA	Artefacts	Flat terrain, acacia. Blade and flaked material.	Medium B
KFN08	29°19'44.59"S	23°22'45.60"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Chert core, blades and waste material.	Medium B
KFN09	29°19'33.05"S	23°24'6.45"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia (haakbos). Chert core, scarper and waste material.	Medium B
KFN10	29°19'14.8"S	23°21'58.0"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Calcrete and red-brown grit. Flake waste / scrapers.	Medium B
KFN11	29°19'0.32"S	23°22'32.41"E	MSA/LSA	Artefacts	Flat terrain, sparse bush. Blades and scraper.	Medium B
KFN12	29°18'46.86"S	23°23'39.12"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Scrapers and waste material.	Medium B
KFN13	29°18'32.33"S	23°22'54.39"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Scrapers / waste material.	Medium B
KFN14	29°18'13.52"S	23°22'26.14"E	MSA/LSA	Artefacts	Flat terrain, calcrete, acacia trees. Scraper, blade and waste material.	Medium B
KFN15	29°18'35.2"S	23°21'29.5"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Red-brown grit. Scraper and waste material.	Medium B

KFN16	29°17'20.22"S	23°21'41.13"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Calcrete. Scrapers and waste material.	Medium B
KFN17	29°16'18.84"S	23°20'43.24"E	MSA/LSA	Artefacts	Near the southern bank of the Orange River, Confluence with a stream cutting across the tillite ridges. Fine chert blade.	Medium B
KFN18	29°16'31.45"S	23°20'56.61"E	MSA/LSA	Artefacts	Hills near the southern bank of the Orange River, acacia (haakbos). Two blades.	Medium B
KFN19	29°20'34.3"S	23°23'27.2"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, calcrete, sparse acacia. Blade and scraper.	Medium B
KFN20	29°20'33.6"S	23°23'19.4"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, sparse acacia, calcrete. Scrapers & flake.	Medium B
KFN21	29°21'37.39"S	23°22'43.40"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, sparse acacia. Scraper.	Medium B
KFN22	29°20'21.9"S	23°21'25.3"E	19th/20th C	Buildings	Flat terrain. Main farmhouse has T layout. Hipped roof. Veranda flanks the east, north and west sides. Rectangular storehouse with gabled roof.	Medium B
KFN2+A25:E363	29°20'15.4"S	23°21'16.1"E	19th/20th C	Buildings	Flat terrain. Rectangular structure with gabled roof and a veranda facing east, was probably a shop. Wooden window and door lintels.	Low
KFN24	29°20'11.8"S	23°21'19.6"E	20th C	Burial ground	Flat terrain, burial ground holds 22 graves including Katharina E J Latsky. DOB: 29 March 1879; DOD: 8 Oct 1966 & Rosa Trytsman (Van Niekerk) DOB 25/01/1875 DOD: 28/12/1957).	High

12. Evaluation of the HIA Report in terms of 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

Twenty-four sites (24) sites were recorded a majority of which represent scatters of Stone Age tools and waste material.

(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

In the area there are no Grade I or Grade II sites declared in terms of Section 7 of the NHRA.

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

The risk ranking is a definition of potential risks based on perceived value of the heritage and potential threats posed by the proposed development. No sites need to be protected.

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

Mining is an important lever of economic development in South Africa. The country has vast mineral wealth which can provide stimulus for rapid socio-economic development in the Northern Cape Province in particular and the country as a whole. Mining is labour intensive and can contribute immensely to alleviate the current high rate of employment. General improvement in the quality of livelihoods in local communities and the country at large is expected.

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

N/A

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

N/A

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

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

13. Conclusion and recommendations

The mine prospecting can go ahead, mindful that archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during development activities, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

1. INTRODUCTION

This document is a Heritage Impact Assessment (HIA) Report prepared in support of a mine prospecting right application on a Portion of the Remaining Extent of the Farm Kransfontein 19 & Portion 2 (De Rust) of the Farm Kransfontein 19 in the Prieska District, Northern Cape Province. An HIA is required in accordance with Section 38 of the National Heritage Resources Act (25/1999). This entailed a site visit on 10-11 September 2018 and a ground survey to assess the heritage sensitivity of the area and to determine potential adverse impacts of the proposed 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

The risk to heritage resources is escalated during the mining phase particularly if opencast methods are used. Such physical works likely result in the disturbance or destruction of heritage resources. For this reason it is important to have a clear understanding beforehand of what is significant about a place, and hence the statutory heritage impact statement.

1.1. Location and physical setting

The Farm Kransfontein 19 straddles the R357 highway from Douglas to Prieska a distance of 50km and 75km respectively from the two towns. A larger portion of the farm lies to the north of the R357. The terrain is generally flat with extenive expsoures of calcrete, in the northern portion of the farm mixed with red-brown stones/grit. Vegetation is karoo scrub dominated by acacia. In the northern half of the farm the short hooked thorn, *Acacia mellifera subsp. Detinens* (*haakbos* in Afrikaans), predominates; the stubborn hooks tended to slow down the ground survey. Drainage channels start on the plain trending north to the Orange River, cutting across the

glacial tilllite deposits that form ridges and spurs flanking the Orange River incising relatively deep channels in this section (Figures 1-6).

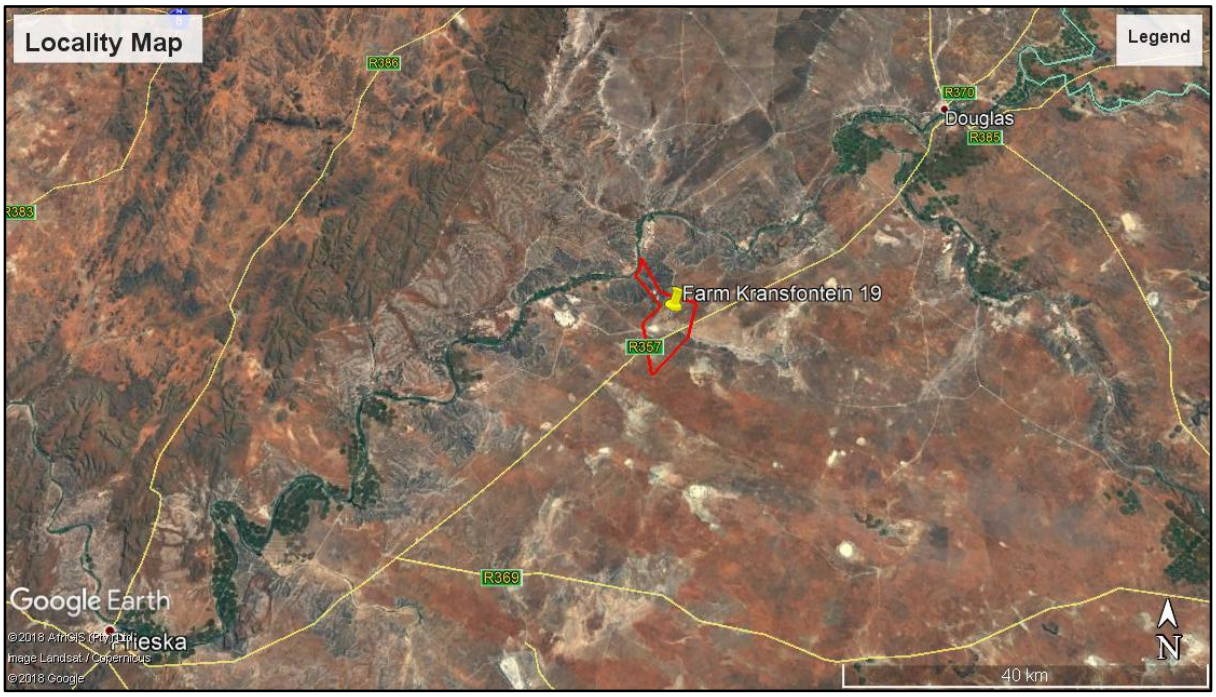


Figure 1: Google-Earth map shows the location the Farm Kransfontein 19 along the R357 from Douglas to Prieska, Northern Cape Province.

Figure 2: Google-Earth Overview shows the glacial till deposition flanking the Orange River through which water has incised channels in the postglacial period to form ridges and spurs.

Figure 3: Exposures of calcrete found in the southern part of the farm.

Figure 4: Red-brown grits with cherts found on the edge if the glacial till ridges.

Figure 5: Flat terrain with sparse bush is typical of the southern part of the farm.

Figure 6: Glacial till deposition forms ridges and spurs overlooking the Orange River.

2. LEGAL FRAMEWORK

This heritage impact assessment fulfils an onus on developers to safeguard heritage resources. This obligation has been legislated with Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) forming the context in which this HIA report has been prepared.

2.1. Section 38 of National Heritage Resources Act on Heritage Impact Assessments

Section 38 of the NHRA states the nature and scale of development which triggers a 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[2];*** *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)

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—

[2] Areal extent of the proposed development triggers the HIA.

(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 however 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

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 practice in heritage management.

3. METHODOLOGY AND THEORETICAL APPROACHES

3.1. Literature survey

A review of relevant literature included reports of previous HIAs conducted in the general locality of the study area. Over the last three years the author has carried out a number of heritage impact assessment studies in the broader region:

Matenga, E. 2017. 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 on the Remaining Extent of Portion 1 of the Farm Viegulands Put 42, Prieska District, Northern Cape Province.

The Farm Viegulands Put 42 is situated in the same locality being 25km to the west also straddling the R357 road from Douglas to Prieska. On the farm, MSA/LSA lithics were found to be widely distributed indicating general hunter-gatherer foraging activities. There was single occurrence of a handaxe which may date back to the Early Stone Age. There were buildings and a burial ground on the property both associated with the pioneer commercial farmers.

Matenga, E. 2017: Phase I Heritage Impact Assessment Requested (including Palaeontological Assessment) in terms of Section 38 of the National Heritage Resources Act No 25/1999 for a Mining right on Vaalbos Island on the Vaal River near Longlands, Barkly West District, Northern Cape Province**.**

Matenga, E. 2016. 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 on a Portion of the Remaining Extent of the Farm 84 & Portion of farm 393, Barkly West District, Northern Cape Province.

Matenga, E. 2017. 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 on a Portion of Farm 393, Barkly West District, Northern Cape Province.

Matenga E. 2018. Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of Section 38 of the National Heritage Resources Act No 25/1999 for Mining Permit and related Infrastructural Activities on a piece of the Farm Longlands 350 situated in the Magisterial District of Barkly West, Northern Cape Province.

The following HIA reports referred to in this report have been obtained from the internet:

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).

3.2. Fieldwork

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 Section 8 of this Report.

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa is provides a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest. As summary of the reconstructed cultural sequence is given below:

4.1. Cultural sequence summary[3]

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: *Australopithecines* *Homo habilis* *Homo erectus*	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First *Homo sapiens* species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	*Homo sapiens* including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
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	19th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

4.2. Appearance of hominids

South Africa has a yielded a very good record of fossil hominids. These are remains of proto-humans which appeared in South Africa more than 3million years ago. Three

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

famous sites in Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and inscribed as a serial UNESCO World Heritage Site.[4] One of these sites Taung near Vryburg is 250 km northwest of the study area. To my knowledge although vertebrate fossils are known in this area, 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 record of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early humans 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.[5] 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 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.[6] 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.[7]

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

[4] Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.
[5] http://archaeology.about/od/bterms/g/bordercave.htm
[6] Morris, D. 2009. Phase 1 Archaeological Impact Assessment at Bucklands Settlement near Douglas, Northern Cape, p3.
[7] http://www.southafrica.net/za/en/articles/entry/article-southafrica.net-the-wonderwerk-cave.

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.[8] A number of field surveys have been carried out around Danielskuil 130km northwest of Kimberley confirming significant hunter gatherer activity in the area from the MSA onwards.

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 practitioners of the Late Stone Age as with Rock Art are ancestors of the Khoisan. A number of rock engravings have been reported in the vicinity of Lime Acres and Danielskuil north of the Vaal River.[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]

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

[9] Collins, S. 1973. Rock-engravings of the Danielskuil Townlands. *South African Archaeological Bulletin* 109-110: 49-57.

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

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 various groups of Tswana speakers certainly descending from the Iron Age and possibly some with Stone Age roots.

Douglas was original the site of a mission station established in 1848 by the Reverend Isaac Hughes. In 1867 European settlers from Griquatown submitted an application to establish a town strategically near the confluence of the Orange and Vaal Rivers, which they named after Sir Percy Douglas, at the time Lieutenant Governor of the Cape Colony.[12]

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

[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] Douglas, Northern Cape. Found at: https://www.experiencenortherncape.com/visitor/citiesandtowns/douglas Consulted Sep 2018.

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.[13]

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

5. FINDINGS OF THE HERITAGE SURVEY

5.1. Cultural landscape attributes

The concept of cultural landscapes gained currency from the 1990s and is of relevant application in Heritage Impact Assessment Studies. Paragraph 47 of the Operational Guidelines for the Implementation of the World Heritage Convention (2015 edition) defines Cultural Landscapes as “cultural properties that represent the combined works of nature and of man" …. They are illustrative of 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 external and internal.”[14]

The property may be described as forming part of a typical Karoo landscape defined by flat and wide open spaces with sparse, low-growing vegetation. From an archaeological standpoint, the site formed part of an area mostly used by hunter-gatherers throughout the three epochs of the Stone Age and later the transition to stock farming (cattle and sheep) possibly starting during the Late Stone Age. When Boer farmers entered the area in the 1830s the population of stock increased coupled with the establishment of permanent farmsteads with modern buildings as the focal point of the farms. Other modern man-made features are noted including shallow pans, fences, wind pumps and reservoirs are now integral features of the landscape. The farmhouse will not be affected by the proposed activities and generally no significant historical attributes in the landscape will be lost (Figure 7-8).

[13] 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.
[14] UNESCO. 2015. Operational Guidelines for the Implementation of the World Heritage Convention.

Figure 7: Typical natural landscape on the plains.

Figure 8: Relatively dense bushes on the tillite hills facing the Orange River.

5.2. The Stone Age

Twenty-one (21) Stone Age sites were recorded all of which represent widespread scatter of lithics. The stone tools, which comprise mainly cores, scrapers, flakes and

a few blades are spread throughout the property without any significant concentrations to demonstrate regular activity. In the central part of the property areas indicate possible sources of raw materials, but no specific settlement locales could be defined to warrant further investigation. While on the Farm Viegulands Put 42, c. 25km to the west of this property (referred to earlier) a handaxe diagnostic of the Early Stone Age was found, no material of this period was found on the property.

5.3. The Iron Age

No Iron Age sites were found on the property.

5.4. Early commercial farming

The farmhouse and storehouse in design are typical and exemplify the rural lifestyle of commercial farmers. These will not be affected by the proposed development.

5.5. Burial ground

There is a burial ground (KFN24) containing 22 graves protected by barbed wire fencing reinforced by exotic fencing bushes. Graves / burial grounds are protected in terms of Section 36 of the National Heritage Resources Act.

5.6. Significance ranking of findings

The significance ranking (with a colour scheme) refers to significance of the heritage resources weighed against potential impacts and risks of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

	RANKING	SIGNIFICANCE	NO OF SITES
1	High	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	0

3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	21
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	1
		TOTAL	**24**

Table 1: Inventory of heritage sites.

SITE NO	LATITUDE	LONGITUDE	PERIOD	TYPE	DESCRIPTION	RANKING
KFN01	29°20'02.6"S	23°21'18.4"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Calcretic grit. Flake/waste material, blade. Jaspilite.	Medium B
KFN02	29°19'57.3"S	23°21'12.6"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Red-brown grit. Flake tools, chert.	Medium B
KFN03	29°19'51.7"S	23°21'18.0"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Gritty surface with calcrete. Flake material, core and scrapers.	Medium B
KFN04	29°19'55.1"S,	23°21'24.5"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Calcrete. Chert core/scraper, flake waste.	Medium B
KFN05	29°20'01.9"S	23°21'31.4"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Waste material and jaspilite stone.	Medium B
KFN06	29°20'07.0"S	23°21'28.2"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Fine soils with heavy lime content. Scraper and waste material.	Medium B
KFN07	29°19'56.54"S	23°21'56.03"E	MSA/LSA	Artefacts	Flat terrain, acacia. Blade and flaked material.	Medium B
KFN08	29°19'44.59"S	23°22'45.60"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia. Chert core, blades and waste material.	Medium B
KFN09	29°19'33.05"S	23°24'6.45"E	MSA/LSA	Artefacts	Flat terrain, sparse acacia (haakbos). Chert core, scarper and waste material.	Medium B
KFN10	29°19'14.8"S	23°21'58.0"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Calcrete and red-brown grit. Flake waste / scrapers.	Medium B
KFN11	29°19'0.32"S	23°22'32.41"E	MSA/LSA	Artefacts	Flat terrain, sparse bush. Blades and scraper.	Medium B
KFN12	29°18'46.86"S	23°23'39.12"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Scrapers and waste material.	Medium B
KFN13	29°18'32.33"S	23°22'54.39"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Scrapers / waste material.	Medium B
KFN14	29°18'13.52"S	23°22'26.14"E	MSA/LSA	Artefacts	Flat terrain, calcrete, acacia trees. Scraper, blade and waste material.	Medium B

KFN15	29°18'35.2"S	23°21'29.5"E	MSA/LSA	Artefacts	Flat terrain, acacia (haakbos). Red-brown grit. Scraper and waste material.	Medium B
KFN16	29°17'20.22"S	23°21'41.13"E	MSA/LSA	Artefacts	Flat terrain, sparse trees. Calcrete. Scrapers and waste material.	Medium B
KFN17	29°16'18.84"S	23°20'43.24"E	MSA/LSA	Artefacts	Near the southern bank of the Orange River, Confluence with a stream cutting across the tillite ridges. Fine chert blade.	Medium B
KFN18	29°16'31.45"S	23°20'56.61"E	MSA/LSA	Artefacts	Hills near the southern bank of the Orange River, acacia (haakbos). Two blades.	Medium B
KFN19	29°20'34.3"S	23°23'27.2"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, calcrete, sparse acacia. Blade and scraper.	Medium B
KFN20	29°20'33.6"S	23°23'19.4"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, sparse acacia, calcrete. Scrapers & flake.	Medium B
KFN21	29°21'37.39"S	23°22'43.40"E	MSA/LSA	Artefacts	South of the R357 highway. Flat terrain, sparse acacia. Scraper.	Medium B
KFN22	29°20'21.9"S	23°21'25.3"E	19th/20th C	Buildings	Flat terrain. Main farmhouse has T layout. Hipped roof. Veranda flanks the east, north and west sides. Rectangular storehouse with gabled roof.	Medium B
KFN2+A25:E363	29°20'15.4"S	23°21'16.1"E	19th/20th C	Buildings	Flat terrain. Rectangular structure with gabled roof and a veranda facing east, was probably a shop. Wooden window and door lintels.	Low
KFN24	29°20'11.8"S	23°21'19.6"E	20th C	Burial ground	Flat terrain, burial ground holds 22 graves including Katharina E J Latsky. DOB: 29 March 1879; DOD: 8 Oct 1966 & Rosa Trytsman (Van Niekerk) DOB 25/01/1875 DOD: 28/12/1957).	High

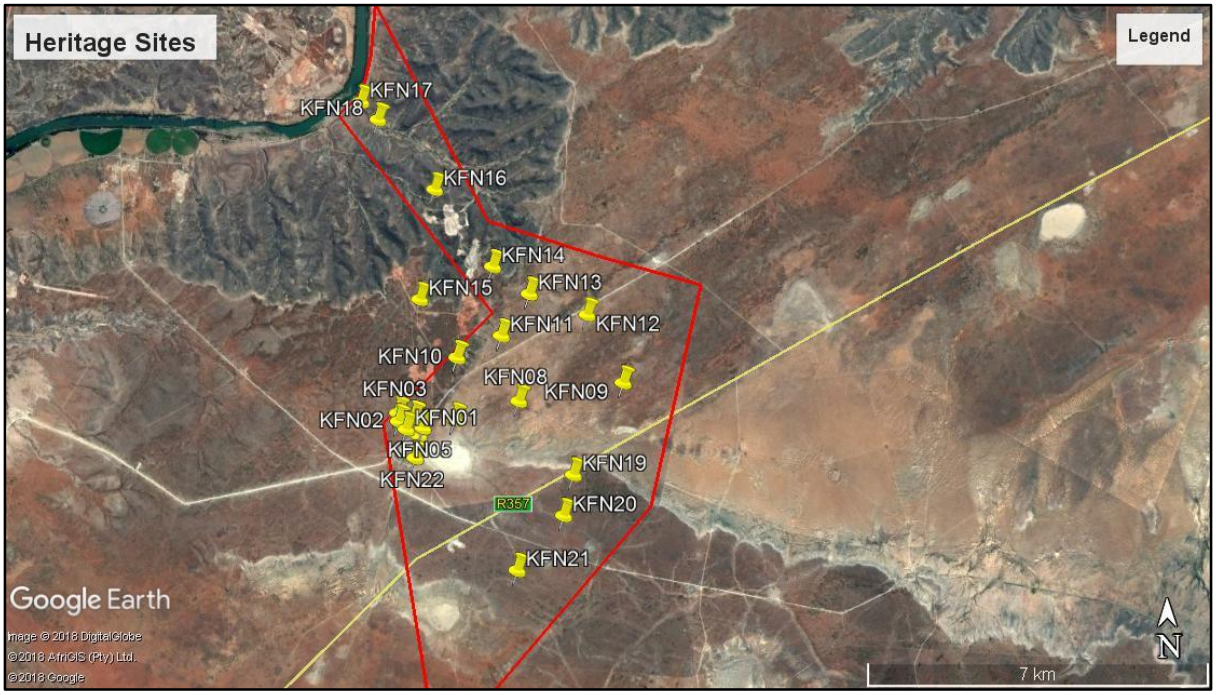


Figure 9: Location of heritage sites.

5.7. Evaluation of the HIA Report in terms of 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

Twenty-four sites (24) sites were recorded a majority of which represent scatters of Stone Age tools and waste material.

(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 declared in terms of Section 7 of the NHRA.

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

The risk ranking is a definition of potential risks based on perceived value of the heritage and potential threats posed by the proposed development. No sites need to be protected.

(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

Mining is an important lever of economic development in South Africa. The country has vast mineral wealth which can provide stimulus for rapid socio-economic development in the Northern Cape Province in particular and the country as a whole. Mining is labour intensive and can contribute immensely to alleviate the current high rate of employment. General improvement in the quality of livelihoods in local communities and the country at large is expected.

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

N/A

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

N/A

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

In the event of discovery of other heritage resources during prospecting and the mining phase, 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 potential impact	Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics.
Nature of Impact	Negative impacts can both be direct or indirect.
Legal Requirements	Sections 34, 35, 36, 38 of National Heritage Resources Act (25/1999).
Stage/Phase	Prospecting for minerals (test pits, drilling). Mining by opencast or shaft methods
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Test pits, drilling, opencast excavation and trenching have potential to damage heritage 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	High.
Mitigation measures	If heritage resources are discovered during prospecting the heritage resources authorities must be informed and a heritage expert called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

6. CONCLUSION AND RECOMMENDATIONS

The mine prospecting can go ahead, mindful that archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during development activities, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

7. CATALOGUE OF HERITAGE SITES

SITE NO	COORDINATES	PERIOD
KFN01	29°20'02.6"S, 23°21'18.4"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse trees. Calcretic grit. Flake/waste material, blade. Jaspilite.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN02	29°19'57.3"S, 23°21'12.6"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse acacia. Red-brown grit. Flake tools, chert.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN03	29°19'51.7"S, 23°21'18.0"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse trees. Gritty surface with calcrete. Flake material, core and scrapers.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN04	29°19'55.1"S, 23°21'24.5"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse acacia. Calcrete. Chert core/scraper, flake waste.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN05	29°20'01.9"S, 23°21'31.4"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse trees. Waste material and jaspilite stone.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN06	29°20'07.0"S, 23°21'28.2"E	MSA.LSA

DESCRIPTION: Flat terrain, sparse acacia. Fine soils with heavy lime content. Scraper and waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN07	29°19'56.54"S, 23°21'56.03"E	MSA/LSA

DESCRIPTION: Flat terrain, acacia. Blade and flaked material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN08	29°19'44.59"S, 23°22'45.60"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse acacia. Chert core, blades and waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN09	29°19'33.05"S, 23°24'6.45"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse acacia (haakbos). Chert core, scarper and waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN010	29°19'14.8"S, 23°21'58.0"E	MSA/LSA

DESCRIPTION: Flat terrain, acacia (haakbos). Calcrete and red-brown grit. Flake waste / scrapers.

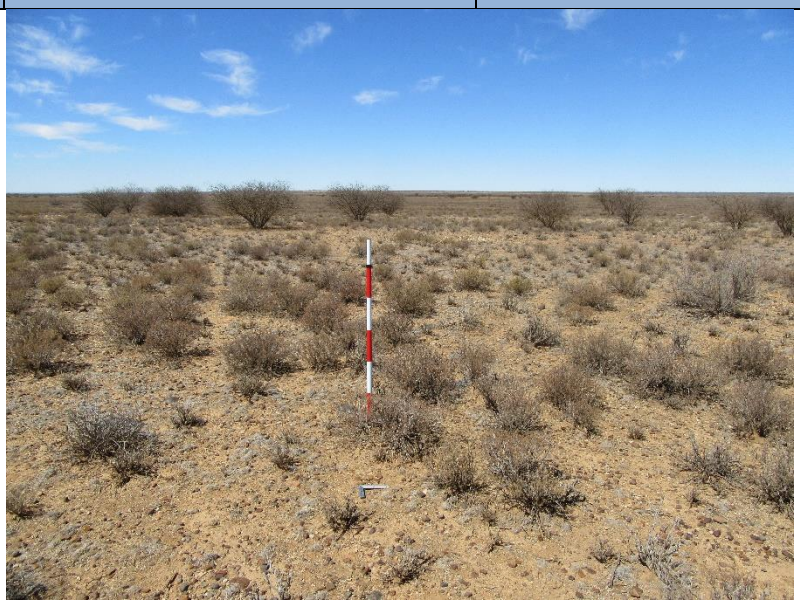
HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN11	29°19'0.32"S, 23°22'32.41"E	MSA/LSA

DESCRIPTION: Flat terrain, sparse bush. Blades and scraper.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN12	29°18'46.86"S, 23°23'39.12"E	MSA/LSA



DESCRIPTION: Flat terrain, sparse trees. Scrapers and waste material.

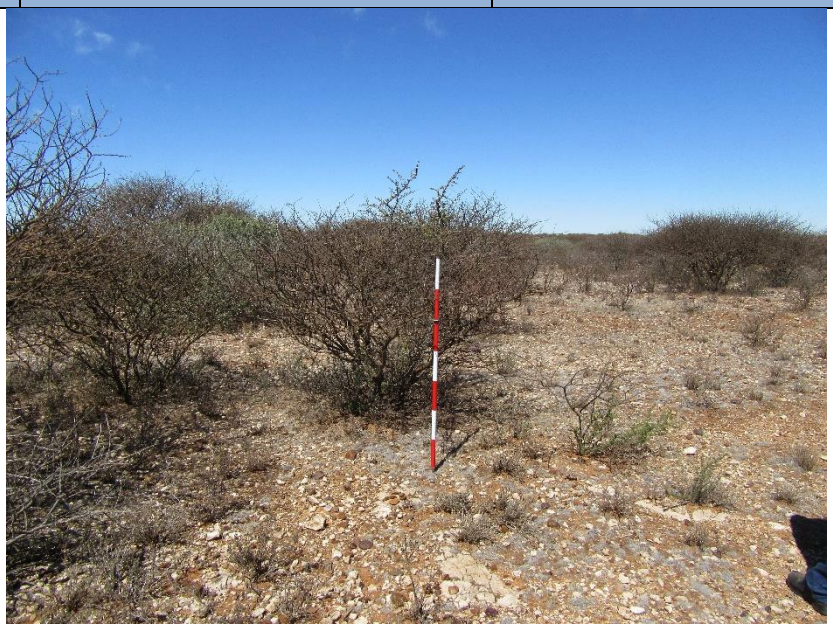
HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN13	29°18'32.33"S, 23°22'54.39"E	MSA/LSA

DESCRIPTION: Flat terrain, acacia (haakbos). Scrapers / waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

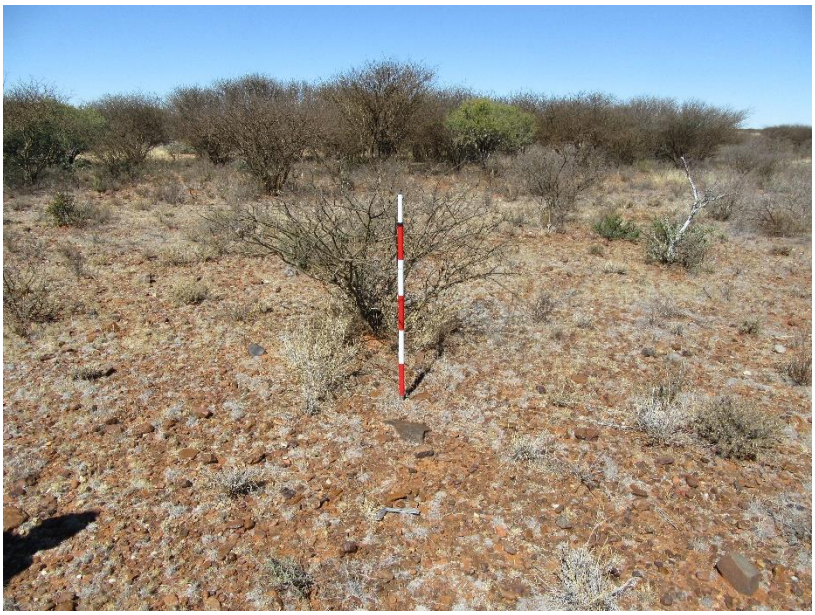
SITE NO	COORDINATES	PERIOD
KFN14	29°18'13.52"S, 23°22'26.14"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, acacia trees. Scraper, blade and waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

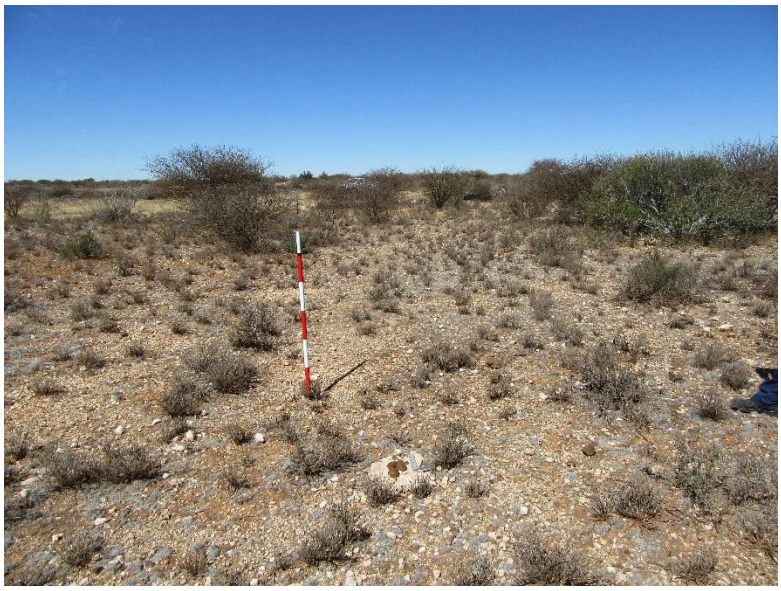
SITE NO	COORDINATES	PERIOD
KFN15	29°18'35.2"S, 23°21'29.5"E	MSA/LSA



DESCRIPTION: Flat terrain, acacia (haakbos). Red-brown grit. Scraper and waste material.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN16	29°17'20.22"S, 23°21'41.13"E	MSA/LSA



DESCRIPTION: Flat terrain, sparse trees. Calcrete. Scrapers and waste material.

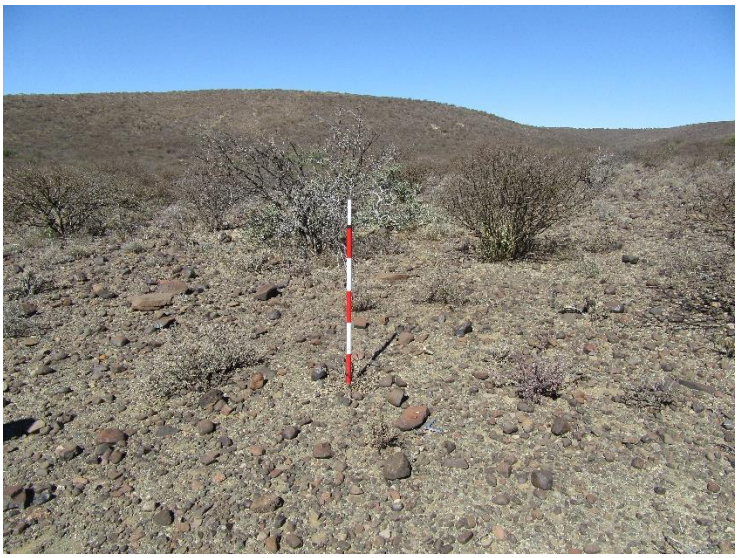
HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN017	29°16'18.84"S, 23°20'43.24"E	MSA/LSA

DESCRIPTION: Near the southern bank of the Orange River, Confluence with a stream cutting across the tillite ridges. Fine chert blade.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN18	29°16'31.45"S, 23°20'56.61"E	MSA/LSA



DESCRIPTION: Hills near the southern bank of the Orange River, acacia (haakbos). Two blades.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN19	29°20'34.3"S, 23°23'27.2"E	MSA/LSA

DESCRIPTION: South of the R357 highway. Flat terrain, calcrete, sparse acacia. Blade and scraper.

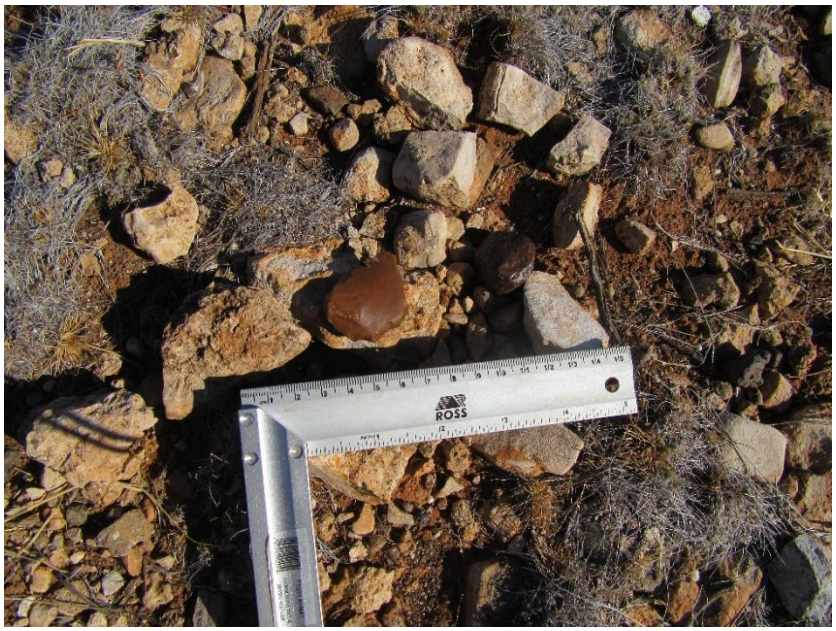
HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN20	29°20'33.6"S, 23°23'19.4"E	MSA/LSA

DESCRIPTION: South of the R357 highway. Flat terrain, sparse acacia, calcrete. Scrapers & flake.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN21	29°21'37.39"S, 23°22'43.40"E	MSA/LSA



DESCRIPTION: South of the R357 highway. Flat terrain, sparse acacia. Scraper.

HERITAGE SIGNIFICANCE: Evidence of stone tool manufacture and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
KFN22	29°20'21.9"S, 23°21'25.3"E	19th/20th Centuries

DESCRIPTION: Flat terrain. Main farmhouse has T layout. Hipped roof. Veranda flanks the east, north and west sides. Rectangular storehouse with gabled roof.

HERITAGE SIGNIFICANCE: Exemplifies modern architecture on early commercial farms.

SITE NO	COORDINATES	PERIOD
KFN23	29°20'15.4"S, 23°21'16.1"E	**19th/20th Centuries**

DESCRIPTION: Flat terrain. Rectangular structure with gabled roof and a veranda facing east, was probably a shop. Wooden window and door lintels.

HERITAGE SIGNIFICANCE: Low significance.

SITE NO	COORDINATES	PERIOD
KFN24	29°20'11.8"S, 23°21'19.6"E	19th/20th Centuries

DESCRIPTION: Flat terrain, burial ground holds 22 graves including Katharina E J Latsky. DOB: 29 March 1879; DOD: 8 Oct 1966 & Rosa Trytsman (Van Niekerk) DOB 25/01/1875 DOD: 28/12/1957).

HERITAGE SIGNIFICANCE: Burial ground. Section 36 of NHRA.

8. REFERENCES

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