

**HERITAGE IMPACT ASSESSMENT AND PALAEOANTHROPOLOGICAL DESKTOP
ASSESSMENT FOR A MINE PROSPECTING RIGHT ON PORTION 6 (EMIL – A
PORTION OF PORTION 3 (ONVERWAG)) OF THE FARM ELANDSDRIFT 159
AND REMAINING EXTENT OF PORTION 1 OF THE FARM SLANGHEUVEL 160,
BARKLY-WEST, NORTHERN CAPE PROVINCE**

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20 June 2021



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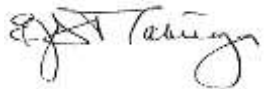
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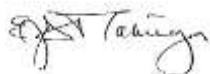
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DECLARATION OF INDEPENDENCE

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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EXECUTIVE SUMMARY

1. A Heritage Impact Assessment (HIA) study has been conducted on behalf of Bokamoso Exploration (Pty) Ltd to support a mine prospecting rights application on Portion 6 of the Farm Elandsdrift 159 and the Remaining Extent of Portion 1 of the Farm Slangheuvel 160, near Barkly West in the Dikgatlong Local Municipality, Northern Cape Province. A ground survey was conducted on 9th and 10th June 2021 for the possible occurrence of archaeological and historical material on the property.
2. The heritage sensitivity of the property is summarised as follows:
3. *The Stone Age*
A few stone tools were found. The occurrence of a cleaver (BMK08) shows the Early Stone Age origins of the stone tool cultures which became well established in subsequent epochs of the Stone Age, i.e. the Middle and Late State Age. None of the finds warrants further action.
4. *The Iron Age*
No material dating to the Iron Age was found.
5. *Historic buildings*
There are a number of buildings of different typologies on the property. Together they constitute the built environment typical of many farms in the broader area. Increasingly this is being recognised as a cultural landscape of heritage significance. The circular fields under pivot irrigation add another key element to the landscape as they are a common occurrence on the silt banks of the Vaal and Orange Rivers. None of buildings will be affected by the prospecting and mining operations.
6. *Burial grounds*
Two burial grounds were recorded (BMK04, BMK13). It is recommended that the burial grounds are fenced off and 100 m buffer reserved in accordance with

SAHRA minimum standards. If operations will encroach into the buffer area, a permit must be obtained from SAHRA.



Location of the burial grounds



Burial ground (BMK04) and the proposed buffer area



Burial ground (BMK13) and the proposed buffer area

7. Inventory of heritage sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BMK01	28°27'10.79"S	24°43'11.33"E	MSA/LSA	The main building at the farmstead is a rectangular structure with a gabled roof of IBR zinc sheeting. There are other structures and outbuildings. Mature tree plantings on the south, west and north side of the main building.	Medium B	Will not be affected
BMK02	28°27'12.35"S	24°43'11.36"E	Modern	A stone enclosure around an old abandoned swimming pool and leisure area. It is a semi-circular structure built of stone and mortar. On the outside the structure is obscured by a cover of grass and trees	Low	Will not be affected
BMK03	28°27'8.24"S	24°43'22.51"E	Modern	Large circular field under pivot irrigation. One of 4 fields situated close to one another around the homestead.	Medium B	Will not be affected
BMK04	28°27'6.04"S	24°43'14.20"E	Modern	Pioneer farmers burial ground with c 14 graves, two with ornate marble headstones. Some of the names inscribed are: Gerret Christoffel Snyders DOB 12/8/1854, DOD 19/7/1922; Clara Mariah Snyders DOB 17/5/1860 DOD 20/6/1935; Isabella Martin De Bruyn DOD 28/08/1936 at age 39; John Matthew Martin DOB 29/9/1888 DOD 26/8/1955; Open air exhibition of farm old equipment.	High	High
BMK05	28°26'55.59"S	24°43'19.09"E	Modern	Farm shed. A long rectangular building of unplastered bricks wall, gabled roof of zinc sheeting.	Low	No further action required
BMK06	28°26'51.36"S	24°43'5.46"E	Modern	One of the dwellings at the workers' residence.	Low	No further action required

BMK07	28°26'43.10"S	24°42'44.35"E	Modern	An artificial dam which was probably constructed to hold seasonal runoff. Trees were planted along the earth embankment probably to reinforce it.	Low	No further action required
BMK08	28°26'50.10"S	24°42'31.10"E	MSA/LSA	Flat area with scattered acacia bushes. A cleaver made from a conglomerate stone.	Medium B	No further action required
BMK09	28°26'28.60"S	24°42'40.30"E	MSA/LSA	A pebble stockpile forms a large mound which rises c 3 m and is 100 m in diameter. Evidence that it was a screening site for the diamond workings.	Low	No further action required
BMK10	28°26'37.20"S	24°42'15.70"E	MSA/LSA	Flat area, fine gravel with pebbles and red-brown soil. A core with flake surfaces.	Medium B	No further action required
BMK11	28°26'40.20"S	24°41'53.10"E	Modern	A low ridge with exposures of dolerite. A stone mound is evidence of early mining or prospecting.	Low	No further action required
BMK12	28°26'52.74"S	24°43'4.30"E	Modern	A simple small building situated near the workers' residence used to be a primary school on the farm until 1983 when it was closed. The school was moved to a neighbouring farm.	Low	
BMK13	28°26'11.90"S	24°42'1.90"E	Modern	A large burial ground holds ± 60 graves reserved for farm workers. Largely obscured by bushes and grass. Some graves with polished granite headstones and rims. Some of the names inscribed: Boitumelo Ismael DOB 11/8/1953 DOD 2/8/2004; Maria Lecombo DOB 25/11/1916 DOD 7/2/1993	High	High
BMK14	28°25'47.60"S	24°42'1.60"E	MSA/LSA	Open area appears to have been cleared for cultivation and under irrigation in the past. A scraper found	Low	No further action required

BMK15	28°26'20.43"S	24°43'12.74"E	MSA/LSA	A ford across the Vaal River built of concrete, water passing underneath through concrete and metal openings or tubing. It was built around 1972 to bring onions to the train station at Riverton. This was before a modern bridge was built 7 km downstream. Not passable during the rainy season as the discharge overflows.	Medium B	Will not be affected
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8. Ranking of Findings

	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.	2
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. 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.	5
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	8
		TOTAL	15

9. Recommendations and conclusions

The mine prospecting application may be given a green light to go ahead subject to the recommendations being heeded to protect the burial grounds. As a standard procedure, in the event of other heritage resources being discovered in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.

CONTENTS

DOCUMENTS CONTROL	2
EXECUTIVE SUMMARY	3
1. INTRODUCTION.....	13
2. LOCATION AND PHYSICAL SETTING	13
3. LEGAL FRAMEWORK	17
3.1. Protection of buildings and structures	18
3.2. Graves and burial grounds.....	18
3.3. The National Environmental Management Act (107/1998)	19
3.4. The Burra Charter on Conservation of Places of Cultural Significance.....	19
4. APPROACH AND METHODOLOGY	19
4.1. Literature Survey.....	19
4.2. Ground Survey.....	21
4.3. Significance ranking of findings	23
4.4. Limitations of the study.....	24
5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT	25
5.1. Cultural Sequence Summary	25
5.2. Appearance of Hominids.....	25
5.3. The Early Stone Age (2 million to 250 000 years BP)	25
5.4. Middle Stone Age (MSA) [250 000 yrs – 30 000 yrs BP].....	26
5.5. Later Stone Age (LSA)[40 000 yrs to ca2000 yrs BP]	26
5.6. Early Iron Age	27
5.7. The Later Iron Age	27
5.8. Historical context	28
5.9. The Anglo Boer War (South African War)(1899-1902)	28
5.10. Vaal River alluvial diamond diggings	28
6. FINDINGS OF THE SURVEY	29
6.1. The Stone Age.....	29
6.2. The Iron Age.....	29
6.3. Historic buildings.....	30
6.5. Ranking of Findings	35
6.6. Assessment of Impacts using the Statutory Framework.....	36
6.7. Risk Assessment of the findings.....	37
7. RECOMMENDATIONS AND CONCLUSIONS.....	38
8. REFERENCES	38

1. INTRODUCTION

A Heritage Impact Assessment (HIA) study has been conducted on behalf of Bokamoso Exploration (Pty) Ltd to support a mine prospecting right application on Portion 6 of the Farm Elandsdrift 159 and the Remaining Extent of Portion 1 of the Farm Slangheuvel 160, near Barkly West in the Dikgatlong Local Municipality, Northern Cape Province. This entailed a ground survey which was conducted on 9th and 10th June 2021 for the possible occurrence archaeological and historical material on the property. This report has been prepared in compliance with Section 38(8) of the National Heritage Resources Act (No 25 of 1999) and mitigation measures recommended in this report will be considered as part of Environmental Impact Assessment.

1.1. Nature of development and expected impacts

Diamonds are known to occur in alluvial gravel deposits on the old floodplain of the Vaal River. As prospecting and mining activities are likely to result in the damage or destruction of heritage resources in the footprint of the mining operations, a ground survey is a means of collecting empirical evidence to inform a mitigation plan.

2. LOCATION AND PHYSICAL SETTING

The property under study is set against the west bank of the Vaal River (28°26'27.85"S, 24°42'29.78"E approx. centre of the property) (Figures 1-2). It is located 10 km south of the village of Windsorton and 6 km north of Riverton, both situated on the banks of the Vaal River. The city of Kimberley is a distance of 35 km to the south. In this area the Vaal River is trending south in a series of meanders. The overall impression is that the river loops and trends northwest to its confluence with the Harts River a distance of 40 km, before taking a south-westerly course towards Douglas where it meets the Orange River. The river splits its channel creating several Islands including the much famed Bird Island (Figure 3). The Vaal River is well known for a long dramatic course towards the Atlantic Ocean from a source northwest of Ermelo in Mpumalanga Province cutting through the semi-arid higgveld plains to its confluence with the Orange River at Douglas. The present channel is flanked by an old floodplain with alluvial pebbles and a superficial overburden of sand. The alluvial plain is evidence of a long process of erosion, deposition and shifting channels. On the river banks there is clay rich silt deposit which now supports Lucerne and maize

fields under pivot irrigation. Green circles are a characteristic feature of modern farming on the banks of the Vaal and Orange Rivers, and are gaining recognition as a cultural landscape of significance (Figure 4).

The river channel is flanked by mixed indigenous vegetation of the Kimberley Thornveld biome, thick in some areas with undergrowth and impenetrable. In the southern part of property a large area was scoured during the first wave of diamond workings at the end of the 19th century into the 20th century. Exposures of gravel and stockpiles of pebbles is telling evidence of this episode when men worked with picks, shovels and wheelbarrows (Figure 5).

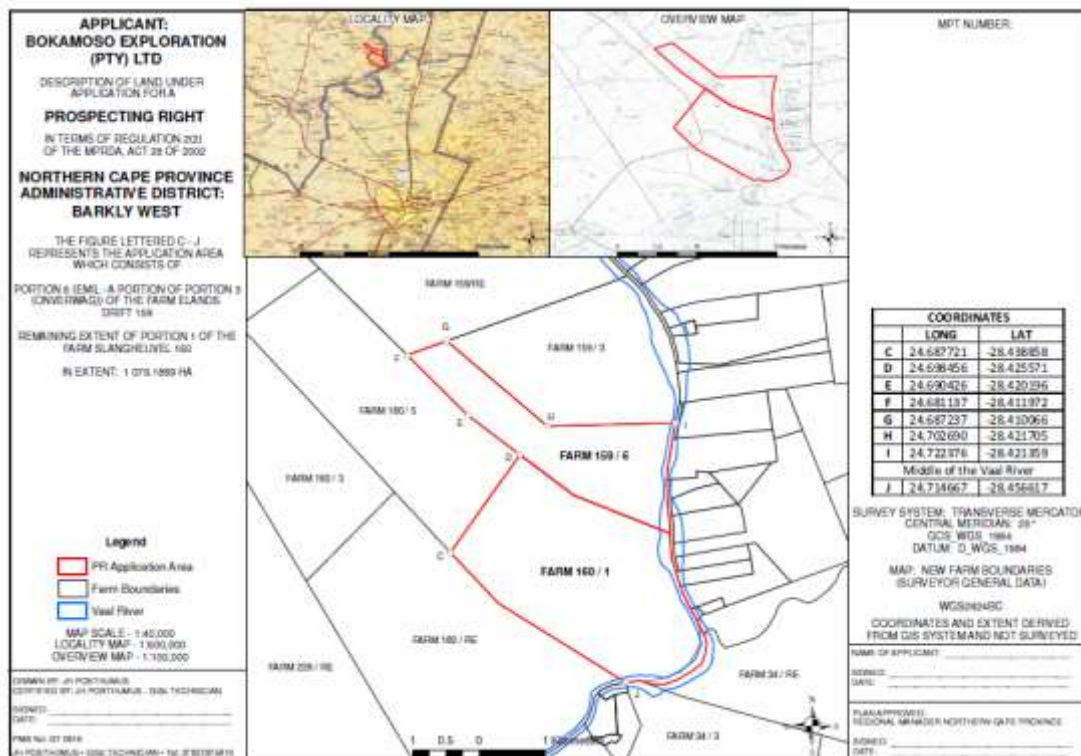


Figure 1: Locality of the proposed prospecting



Figure 2: Google Earth map shows the location of the study area on the west bank of the Vaal River between Windsorton and Riverton



Figure 3: Section of the Vaal River with an island and some rapids in the background



Figure 4: Lucerne cultivation on the banks of the Vaal River



Figure 5: Pebble stockpile from early diamond workings



Figure 6. Typical view of the Karoo biome further from the banks of the Vaal River



Figure 7: Another view of the landscape, a saddle between two low dolerite ridges. Dense grass cover

3. LEGAL FRAMEWORK

The principal law on the management of heritage resources is the National Heritage Resources Act (No 25 / 1999) (MHRA)

3.1. Protection of buildings and structures

Section 34 of NHRA is a precautionary statutory provision to protect all buildings at least 60 years old in case it is found that they are worth retaining as landmarks of cultural heritage significance. It reads:

(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.

2.2. Prescription of heritage impact assessments

Heritage Impact Assessments are prescribed when the scale of a development proposal crosses thresholds as set out in Section 38(1) of the National Heritage Resources Act (No 25 1999):

(a) the construction of a road, wall, power line, 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 50m in length;

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

(i) exceeding 5 000m² in extent; 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 regulations by SAHRA or a provincial heritage resources authority.

3.2. 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.

3.3. The National Environmental Management Act (107/1998)

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.

3.4. 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.

4. APPROACH AND METHODOLOGY

4.1. Literature Survey

This report is informed by a literature survey on the general cultural sequence and known heritage potential of the broader locality of the study. A number of reports generated through heritage impact assessment studies in the area were available as reference material.

Fourie, W. 2011. *Concentrated Solar Power EIA - Droogfontein heritage impact assessment.* Low density scatters of Middle Stone Age material were exposed around an existing quarry and dry pans were reported (p3).

Engelbrecht, J & H. Fivaz. 2019. *Phase 1 HIA report on housing development, Lethabo Park, Kimberley, Northern Cape.* They recorded sparse distribution of lithics – flakes, chips and scrapers (p24).

Morris 2018: *Proposed construction of a 132kV powerline associated with the Photovoltaic Solar Plants on the Farm Droogfontein, Northern Cape Province: Walk-Down Heritage Impact Survey of the Final Alignment and Tower Positions.* Low density occurrence of stone tools were reported (p15).

This author has carried out a number of heritage impact surveys in the broader area which confirm a wide footprint of the MSA/LSA in the Vaal-Orange Rivers basin:

Matenga, E. 2020. *Heritage Impact Assessment and Palaeontological Desktop Assessment for a Prospecting Right Application on the Remaining extent of the Farm Roodam 101 and Portion 101/1 of the Farm Roodam near Windsorton, Barkly West District, Northern Cape Province*

Matenga, E. 2019. *Phase I Heritage Impact Assessment (including Palaeontological Desktop Assessment) in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Mining Permit Application on the Remainder of Portion 3 (Bestpan), Portion 14 (Tipperary) and Portion 15 (Annex Tipperary) of the Farm Zoutpansfontein No 34 in the District of Kimberley.*

The Farm Zoutpansfontein is situated in the same area on the east bank of the Vaal River. Among the finds there were potsherds possibly dating to the Later Iron Age.

Matenga, E. 2017: *Phase I Heritage Impact Assessment Requested 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:*

A stone dyke recorded, constructed by early miners to divert the Vaal River channel.

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.

Few stone tools. Stonewalls of a recent date (20th century) recorded.

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 the proposed mine prospecting on the Remainder of the Farm Schimtdsdrift 248, Pixley Ka Seme District Municipality, Northern Cape Province*

Among the finds there were Stone Age tools and potsherds possibly dating to the Later Iron Age.

4.2. Ground Survey

A ground survey was conducted by an archaeologist and field assistant on 9th and 10th June 2021. Data was collected by means of random walking surveys with a vehicle used to move from one survey area to another. Locales that were seen as promising to yield material were also targeted. It was not necessary to walk through the fields under irrigation aware of the grubbing and disturbance of the topsoil, and removal of stones when the fields were prepared (see Figures 8-10 for a map of the track log). However, the circular green fields form part of a modern cultural landscape of farming commonly seen on the banks of the Vaal and Orange Rivers.



Figure 8: Track log overview



Figure 9: Track log, southern part of the property

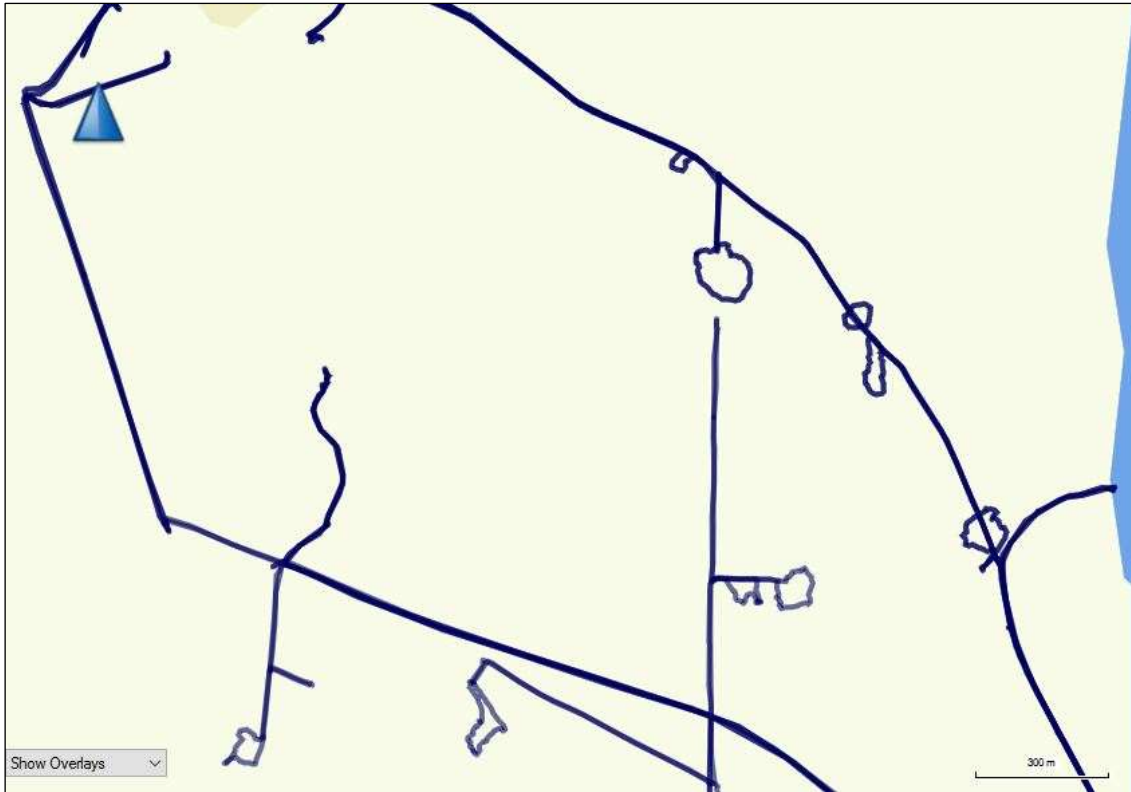


Figure 10: Track log, northern part of the property

4.3. Significance ranking of findings

Heritage sites have been ranked to show potential risks relative to their cultural significance and the expected impact of the proposed activities.

Ranking of Findings

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

4.4. Limitations of the study

Ground visibility was moderate to poor due to grass cover. A south-eastern portion of the farm is occupied by green fields, the farmstead and workers' houses. Beyond this area the ground was scoured by early diamond miners, and exposed gravel and stockpiles of pebbles is what can be seen, now partially covered by grass and Karoo scrub, which has struggled to regenerate under the new soil conditions. While these elements may be considered as a new cultural layer, it was probably created at the expense of surface scatters of stone tools that are normally encountered in the Vaal – Orange River valleys.

5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

5.1. Cultural Sequence Summary

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.
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	Nguni / Sotho/Venda people	Iron Age Farmers	Mfecance / Difaqane
(iii) Colonial period	19 th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

5.2. Appearance of Hominids

The cultural sequence begins with the appearance of hominids 3 to 4 million years ago. Taung which is located 80 km to the north of the study area is famous hominid fossil site and a UNESCO World Heritage Site proclaimed together with the Sterkfontein Caves (Krugersdorp) and Makapans Valley (Mokopane) as a serial property. To date no hominid sites have been reported along the Vaal River.

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

The Stone Age dates back more than 2 million and is divided into three epochs, the Early, Middle and Late Stone Ages. People then made stone and bone implements which were used for cutting and hunting. Material evidence is found in caves, rock-shelters and on river sides and edges of streams, and very rarely seen in open country.

Pear-shaped handaxes, cleavers and core tools are type tools of the Early Stone Age period.¹ The tool industries have been called Oldowan and Acheulian and were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. Acheulian artefacts are usually found near sites where they were manufactured and thus in close proximity to the raw material or at kill sites. 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 Province has been constructed from many heritage impact assessments that have been conducted in the last 20 years. Early (ESA) and Middle Stone Age (MSA) lithics occur over most of area with a more recent find of Later Stone Age (LSA) occupations.² 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.³

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

The Middle Stone Age (MSA), appeared 250 000 years ago and 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. By humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. There is archaeological evidence from some of the caves indicating the making of fire.⁴

A number of field surveys undertaken by this author and many other practitioners have confirm significant hunter gatherer activity in the broader area from the MSA onwards.

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

The Later Stone Age is associated with the appearance of anatomically modern humans called Homo sapiens. Several behavioural traits are noticed, such as rock art

¹ Deacon, H.J. & Deacon, J. 1999. Human Beginnings in South Africa: Uncovering the Secrets of the Stone Age. Cape Town: David Philip.

² Schalkwyk, J. 2015. Heritage Scoping Assessment for the Proposed Perseus-Kronos 765KV Transmission Power Line and Substations Upgrade, Northern Cape and Free State Provinces, p6.

³ Humphreys, A.J.B. & Thackeray, A.I. 1983. Ghaap and Gariep. Later Stone Age Studies in the Northern Cape. Cape Town: South African Archaeological Society Monograph Series 2.

⁴ Deacon, J & H. Deacon. 1999. Human Beginnings in South Africa. Cape Town: David Philip.

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. Practitioners of rock art were ancestors of the San and sites abound in the whole of Southern Africa. Wildebeest Kuil Rock Art Centre is a rock engraving site now with an interpretation centre on land owned by the !Xun and Khwe San situated c. 22km to the southwest from the study area along the R31 road from Kimberley to Barkly West. The site was first known to the public in modern times by the renowned 19th century researcher, George William Stow.⁵ There are more rock engravings on the farm Nooitgedacht near Barkly West which contain 3 sections of glaciated pavement with over 250 San and Khoi-khoi rock engravings (Fourie 2011:23)

5.6. Early Iron Age

The Iron Age was a gradual expansion of settlement of different groups of speakers of Bantu languages over a period of time that could have spanned more than 2 millennia. These communities indigenous to the continent were farmers who brought with them domestic animals, crops, pottery and metal technology. However there are few if any sites attributed to the EIA in the western parts of the country.⁶ Most Iron Age settlements are concentrated in the eastern part of the country. 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.

There is however increasing evidence that sheep and probably cattle as well might have moved into the area much earlier than the Iron Age.⁷

5.7. The Later Iron Age

The LIA is marked by the presence of stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.⁸ These sites are widely distributed as they are

⁵ Wildebeest Kuil Rock Art Centre, at: <http://www.kimberley.co.za/city/wildebeest-kuil-rock-art-centre/> (Consulted 3 May 2017).

⁶ Phillipson, D. W. 2005. African Archaeology. Cambridge: University of Cambridge Press.

⁷ University of Witwatersrand. Huffman 2007. A Handbook on the Iron Age. Scottsville: UKZN Press

⁸ 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.

found in the Northern Cape, Northwest, Limpopo, Free State and Mpumalanga Provinces.

5.8. Historical context

Before the arrival of Europeans the Tlhaping, a segment of the Tswana, were settled in the area. The Tswana probably have their ancestry in the Iron Age farmers and probably have roots in the Stone Age as well. The early 19th century was a political turning point with an increasingly uncertain security situation and internal displacements. The first of these episodes was the Difaqane characterised by inter-tribal raids. During the late 18th and early 19th centuries Griqua herders (people of Coloured stock from the southwest) settled near the confluence of the Vaal and Orange Rivers establishing a town called Klaarwater and subsequently renamed Griquatown. Meanwhile white hunters, traders and missionaries also entered the area. A little later the Afrikaners arrived bringing their stock as part of a mass exodus from the Cape called the Great Trek. The discovery of diamonds at Kimberley sparked the “rush”. The area which became known as Griqualand West was subsequently incorporated into the Cape Colony in the 1880s.⁹

5.9. The Anglo Boer War (South African War)(1899-1902)

Kimberley and its surrounds witnessed much action during the Anglo-Boer War. Quite frightening for the 50 000 residents was the Boer commandos’ siege of the town from 14 October 1899 until 15 February 1900 when it was relieved by General French (four months lockdown). To effect the siege the Boers established many redoubts and encampments around the town effectively it locking down. A command centre was located to the north of Kimberley (Fourie 2011: 24-25). A heritage impact study on the farm Droogfontein revealed these positions to be south of Droogfontein, 20 km south of the study area (Fourie 2011).

5.10. Vaal River alluvial diamond diggings

The lower Vaal River Valley has been famously associated the mining of alluvial diamonds which started in 1869. The first party of prospectors came from Natal

⁹ 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.

organised by the British Army. As they continued the search for the gemstones along the valley they struck good finds at Klipdrift (Barkly West). These finds sparked South Africa's first diamond rush. Following the news men began to flock from Britain and elsewhere to the new diggings. By April 1871 c. 5000 men had swarmed the Vaal, Modder, and Orange Rivers. The alluvial stones from the region proved to be of high quality. The miners staked claims while the local Griqua chiefs and the Boer Republics of the Transvaal and Orange Free State also joined in the fray. Ownership rights were initially given to local chiefs and Boer Trekkers. But the diggers proclaimed the Klip Drift Republic on 30th July 1870 with Stafford Parker as its elected president. In 1872, the British annexed the diamond fields and proclaimed Griqualand West as a crown state. It was subsequently incorporated into the Cape Colony in 1880. The majority of the prospectors abandoned the various Vaal River claims in the wake of richer finds at Kimberley in 1871. Mining of the river gravels has been going on sparking sporadic rushes over the last nearly one and half centuries.¹⁰

The above forms the archaeological and historical context for the identification of heritage resources in the study area.

6. FINDINGS OF THE SURVEY

The heritage sensitivity of the property is summarised as follows:

6.1. The Stone Age

The Stone Age yield was much lower when compared to other impact studies in the Orange Vaal Basin which have been undertaken by this author as well as other practitioners. The finding of a cleaver (BMK08) shows the Early Stone Age origins of the stone tool cultures which became well established in subsequent epochs of the Stone Age, i.e. the Middle and Late State Age. None of the finds warrants further action.

6.2. The Iron Age

No material dating to the Iron Age was found.

¹⁰ The Barkly West & Vaal River Diggings. Found at: <http://www.on-the-rand.co.uk/Diamond%20Grounds/Barkly%20West.htm>

6.3. Historic buildings

There are a number of buildings of different typologies on the property (BMK01, BMK05, BMK06, BMK13). Together they constitute a built environment on farms in the broader area. Increasingly this is being recognised as a cultural landscape of heritage significance. The circular fields under pivot irrigation add another key element to the landscape. Circular fields under Lucerne or maize are a common occurrence on the silt banks of the Vaal and Orange Rivers. None of buildings will be affected by the prospecting and mining operations.

6.4. Burial grounds

Two burial grounds were recorded (BMK04, BMK13). It is recommended that they are fenced off and 100 m buffer reserved in accordance with SAHRA minimum standards. If operations will encroach into the buffer area, a permit must be obtained from SAHRA (Figures 11-13).



Figure 11: Location of the burial grounds



Figure 12: Burial ground (BMK04) and proposed buffer area



Figure 13: Burial ground (BMK13) and proposed buffer area

Table 1: Inventory of heritage sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
BMK01	28°27'10.79"S	24°43'11.33"E	Modern	The main building at the farmstead is a rectangular structure with a gabled roof of IBR zinc sheeting. There are other structures and outbuildings. Mature tree plantings on the south, west and north side of the main building.	Medium B	Will not be affected
BMK02	28°27'12.35"S	24°43'11.36"E	Modern	A stone enclosure around an old abandoned swimming pool and leisure area. It is a semi-circular structure built of stone and mortar. On the outside the structure is obscured by a cover of grass and trees	Low	Will not be affected
BMK03	28°27'8.24"S	24°43'22.51"E	Modern	Large circular field under pivot irrigation. One of 4 fields situated close to one another around the homestead.	Medium B	Will not be affected
BMK04	28°27'6.04"S	24°43'14.20"E	Modern	Pioneer farmers burial ground with c 14 graves, two with ornate marble headstones. Some of the names inscribed are: Gerret Christoffel Snyders DOB 12/8/1854, DOD 19/7/1922; Clara Mariah Snyders DOB 17/5/1860 DOD 20/6/1935; Isabella Martin De Bruyn DOD 28/08/1936 at age 39; John Matthew Martin DOB 29/9/1888 DOD 26/8/1955; Open air exhibition of farm old equipment.	High	High
BMK05	28°26'55.59"S	24°43'19.09"E	Modern	Farm shed. A long rectangular building of unplastered bricks, gabled roof of zinc sheeting.	Low	No further action required
BMK06	28°26'51.36"S	24°43'5.46"E	Modern	One of the dwellings at the workers' residence.	Low	No further action required

BMK07	28°26'43.10"S	24°42'44.35"E	Modern	An artificial dam which was probably constructed to hold seasonal runoff. Trees were planted along the earth embankment probably to reinforce it.	Low	No further action required
BMK08	28°26'50.10"S	24°42'31.10"E	MSA/LSA	Flat area with scattered acacia bushes. A cleaver made from a conglomerate stone.	Medium B	No further action required
BMK09	28°26'28.60"S	24°42'40.30"E	Modern	A pebble stockpile forms a large mound which rises c 3 m and is 100 m in diameter. Evidence that it was a screening site for the diamond workings.	Low	No further action required
BMK10	28°26'37.20"S	24°42'15.70"E	MSA/LSA	Flat area, fine gravel with pebbles and red-brown soil. A core with flake surfaces.	Medium B	No further action required
BMK11	28°26'40.20"S	24°41'53.10"E	Modern	A low ridge with exposures of dolerite. A stone mound is evidence of early mining or prospecting.	Low	No further action required
BMK12	28°26'52.74"S	24°43'4.30"E	Modern	A simple small building situated near the workers' residence used to the school on the farm until 1983 when it was closed. The school was moved to a neighbouring farm.	Low	
BMK13	28°26'11.90"S	24°42'1.90"E	Modern	A large burial ground holds ± 60 graves reserved for farm workers. Largely obscured by bushes and grass. Some graves have polished granite headstones and rims. Some of the names inscribed: Boitumelo Ismael DOB 11/8/1953 DOD 2/8/2004; Maria Lecombo DOB 25/11/1916 DOD 7/2/1993	High	High
BMK14	28°25'47.60"S	24°42'1.60"E	MSA/LSA	Open area which appears to have been cleared for cultivation and under irrigation in the past. A scraper found.	Low	No further action required

BMK15	28°26'20.43"S	24°43'12.74"E	Modern	A ford across the Vaal River built of concrete, water passing underneath through concrete and metal openings or tubing. It was built around 1972 to bring onions to the train station at Riverton. This was before a modern bridge was built 7 km downstream. Not passable during the rainy season as the discharge overflows.	Medium B	Will not be affected
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Figure 14: Location of heritage sites

6.5. Ranking of Findings

	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.	2
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. 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.	5
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	8
		TOTAL	15

6.6. Assessment of Impacts using the 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

Fifteen (15) sites were recorded. Two burial grounds require additional protection measures.

(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.

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

The risk ranking is an indication of potential risks based on perceived value of the heritage and potential threats posed by the proposed development. The burial grounds must be fenced off a 100 m servitude reserved.

(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

The Northern Cape Karoo is leveraging the extraction of its vast mineral wealth for economic development, which is expected to provide unemployment relief for the province in particular and the country as a whole. General improvement in the quality of livelihoods in local communities is expected.

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

The graves will be fenced off and a 100 m buffer zone prescribed.

(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 as a result of the prospecting activities, the Provincial Heritage Resources Authority or SAHRA will be informed immediately and an archaeologist or heritage expert called to attend.

6.7. 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 No. 25 (1999).
Stage/Phase	Prospecting for minerals (test pits, drilling).
Extent of Impact	Test pits, excavations and ground clearing can result in damage and destruction of 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	High.
Mitigation measures	Protect the sites that have been ranked as significant. As a standard procedure, if archaeological or other heritage relics are found during the construction phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

7. RECOMMENDATIONS AND CONCLUSIONS

The mine prospecting application may be given a green light to go ahead with the recommendations heeded to avoid the burial grounds. As a standard procedure, in the event of other heritage resources being discovered in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.

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9. CATALOGUE OF HERITAGE SITES

SITE NO	COORDINATES		PERIOD
BMK01	28°27'10.79"S	24°43'11.33"E	Modern
			
<p>DESCRIPTION: The main building at the farmstead is a rectangular structure with a gabled roof of IBR zinc sheeting. There are other structures and outbuilding. Mature tree plantings on the south, west and north side of the main building.</p>			
HERITAGE SIGNIFICANCE		Association with modern commercial farming	
MITIGATION		Farmstead will not be affected by the development	

SITE NO	COORDINATES		PERIOD
BMK02	28°27'12.35"S	24°43'11.36"E	Modern



DESCRIPTION: A stone enclosure around an old abandoned swimming pool and leisure area. It is semi-circular structure built of stone and mortar. On the outside the structure is obscured by a cover of grass and trees

HERITAGE SIGNIFICANCE Association with modern commercial farming

MITIGATION The structure will not be affected.

SITE NO	COORDINATES		PERIOD
BMK03	28°27'8.24"S	24°43'22.51"E	Modern



DESCRIPTION: Large circular field under pivot irrigation. One of 4 fields situated close to one another around the homestead.

HERITAGE SIGNIFICANCE Landscape of pivot irrigation common on the silt banks of the Vaal and Orange River

MITIGATION Will not be affected by the proposed development

SITE NO	COORDINATES		PERIOD
BMK04	28°27'6.04"S	24°43'14.20"E	20 th





DESCRIPTION: Pioneer farmers burial ground with c 14 graves, two with marble ornate headstones. The names inscribed are:

Gerret Christoffel Snyders DOB 12/8/1854, DOD 19/7/1922

Clara Mariah Snyders DOB 17/5/1860 DOD 20/6/1935

Isabella Martin De Bruyn DOD 28/08/1936 at age 39.

John Matthew Martin DOB 29/9/1888 DOD 26/8/1955

Open air exhibition of farm old equipment.

HERITAGE SIGNIFICANCE	
MITIGATION	No further action required.

SITE NO	COORDINATES		PERIOD
BMK05	28°26'55.59"S	24°43'19.09"E	Modern




DESCRIPTION:

Farm shed. A long rectangular building of unplastered bricks, gabled roof of zinc sheeting.

HERITAGE SIGNIFICANCE	Typical modern commercial farming structure
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MITIGATION	Building will not be affected
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SITE NO	COORDINATES		PERIOD
BMK06	28°26'51.36"S	24°43'5.46"E	Modern
			
DESCRIPTION: One of the dwellings at the workers' residence.			
HERITAGE SIGNIFICANCE		Association with modern commercial farming.	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
BMK07	28°26'43.10"S	24°42'44.35"E	Modern



DESCRIPTION: An artificial dam which was probably constructed to hold seasonal runoff. Trees were planted along the earth embankment probably to reinforce it.

HERITAGE SIGNIFICANCE	Association with farming and possibly early mining operations.
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
BMK08	28°26'50.10"S	24°42'31.10"E	MSA/LSA



DESCRIPTION: Flat area with scattered acacia bushes. A cleaver made from a conglomerate stone.

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
BMK09	28°26'28.60"S	24°42'40.30"E	Modern



DESCRIPTION: A pebble stockpile from a large mound which rises c 3 m and is 100 m in diameter. Evidence that it was a screening site for the diamond workings.

HERITAGE SIGNIFICANCE	Early mining
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MITIGATION	No further action required.
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SITE NO	COORDINATES		PERIOD
BMK10	28°26'37.20"S	24°42'15.70"E	MSA/LSA




DESCRIPTION: Flat area, fine gravel with pebbles and red-brown soil. A core with flake surfaces.

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
BMK11	28°26'40.20"S	24°41'53.10"E	Modern
			
<p>DESCRIPTION: A low ridge with exposures of dolerite. A stone mound is evidence of early mining or prospecting.</p>			
HERITAGE SIGNIFICANCE		Evidence of hunter-gatherer activities during the MSA/LSA	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
BMK12	28°26'52.74"S	24°43'4.30"E	Modern
			
<p>DESCRIPTION: A simple small building situated near the workers' residence used to the school on the farm until 1983 when it was closed. The school was moved to a neighbouring farm.</p>			
HERITAGE SIGNIFICANCE		Education for the children of farm workers.	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
BMK13	28°26'11.90"S	24°42'1.90"E	Modern



DESCRIPTION: A large burial ground holds ± 60 graves reserved for farm workers. Largely obscured by bushes and grass. Some of the graves with polished granite headstones and rims.

HERITAGE SIGNIFICANCE Graves and burial grounds are sacred.

MITIGATION 100 buffer around the graves.

SITE NO	COORDINATES		PERIOD
BMK14	28°25'47.60"S	24°42'1.60"E	MSA/LSA



DESCRIPTION: Open area appears to have been cleared for cultivation and under irrigation in the past. A scraper found.

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
BMK15	28°26'20.43"S	24°43'12.74"E	Modern



DESCRIPTION: A ford across the Vaal River built of concrete, water passing underneath through concrete and metal openings or tubing. It was built around 1972 to bring oceans to the train station at Riverton. This before a modern bridge was built 7 km downstream. Not passable during the rainy season as the discharge overflows.

HERITAGE SIGNIFICANCE Association with modern commercial farming

MITIGATION No further action required.