

**Heritage Impact Assessment & Palaeontological Desk Assessment
for a Prospecting Right Application on a Remainder of the Farm
Paiskloof 149 and Portion 1 of the Farm Paiskloof 149 near Barkly
West, Northern Cape**



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27 September 2021



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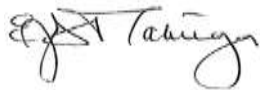
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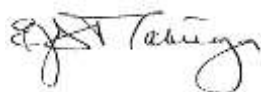
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DECLARATION OF INDEPENDENCE

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 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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CONTENTS

DOCUMENTS CONTROL	2
EXECUTIVE SUMMARY	4
ABBREVIATIONS	8
1. INTRODUCTION.....	9
2. GEOGRAPHICAL SETTING.....	11
2.1. Physical setting.....	11
3. LEGAL FRAMEWORK.....	14
4. APPROACH AND METHODOLOGY.....	17
4.1. Literature Survey	17
4.2. Local Information.....	18
4.3. Ground Survey.....	18
5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT.....	20
5.1. Appearance of Hominids.....	21
5.2. The Stone Age.....	21
5.3. The Iron Age Culture [ca. 2000 years BP].....	23
5.3.1. <i>Early Iron Age</i>	23
5.3.2. <i>The Later Iron Age</i>	24
5.4. Historical Context	24
5.5. The European Contact Period.....	24
6. FINDINGS OF THE HERITAGE SURVEY.....	25
6.1. Stone Age.....	25
6.2. Iron Age	25
6.3. Modern period (19 th /20 th century).....	25
6.4. Burial grounds.....	25
6.5. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework.....	29
6.6. Risk Assessment of the findings	30
7. CONCLUSION AND RECOMMENDATIONS.....	31
8. CATALOGUE OF FINDINGS	32
5. GLOSSARY.....	40
9. REFERENCES	42

EXECUTIVE SUMMARY

1. This Heritage Impact Assessment (HIA) report has been prepared on behalf of Bellsbank Exploration (Pty) Ltd for a prospecting right application on a Remainder of the Farm Paiskloof 149 and Portion 1 of the Farm Paiskloof 149 near Barkly West, Northern Cape.
2. A ground survey on the property was conducted on 15th and 16th September 2021 for the possible occurrence of archaeological and historical material on the property.
3. An HIA is prepared in compliance with Section 38(8) of the National Heritage Resources Act (No 25 of 1999), and the mitigation measures recommended in this report will be considered as part of Environmental Impact Assessment.
4. The following is a summary of the findings of the ground survey:

5. *Stone Age*

For thousands of years before modern times the area was occupied by hunter-gatherers who subsisted on stone tool technologies. However, the ground survey on Paiskloof yielded far fewer stone tools when compared to other studies in the vicinity, for instance on Farm 84, Farm 85 and Farm 393 situated on the escarpment 15 km to the northeast (Matenga 2016, 2017, 2018b). Furthermore the tools encountered during the study made from the predominant rock, dolomite, are rudimentary and less formalised. No further action is necessary after they have been documented.

6. *Iron Age*

No sites or relics dating to the Iron Age were found.

7. *Modern period (19th/20th century)*

In the 1970s, the property owner attempted to mine diamonds on the escarpment on a small scale. Deep holes were excavated pursuing vertical structures known to have a high chance of hosting diamonds (PKF01, PKF02 and PKF03). A flat narrow iron object with two perforated holes found on the base of the escarpment appears to

date to the same period (PKF08). All finds were considered to be of low cultural significance.

8. Burial grounds

No burial grounds were reported on the farm.

9. Table of heritage sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
PKF01	28°13'37.30"S	24°17'30.30"E	20 th Century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF02	28°13'35.70"S	24°17'34.60"E	20 th century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF03	28°13'36.30"S	24°17'33.90"E	20 th century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF04	28°14'9.50"S	24°17'29.10"E	MSA/LSA	On the base of the escarpment. Blade made from dolomite.	Low (B)	No further action
PKF05	28°14'0.60"S	24°17'43.00"E	MSA/LSA	On the base of the escarpment. Obsidian flake	Low (B)	No further action
PKF06	28°13'46.90"S	24°17'54.60"E	MSA/LSA	On the base of the escarpment. 2 dolomite scrapers.	Low (B)	No further action
PKF07	28°13'22.40"S	24°18'11.20"E	MSA/LSA	On the base of the escarpment. Less formalised tools with sharp cutting edges made from dolomite.	Low (B)	No further action
PKF08	28°13'29.20"S	24°18'7.40"E	20 th century	On the base of the escarpment. A flat narrow iron object with two perforated holes found on the base of the escarpment appears to dating to the 1970s when the property owner attempted to mine the reef diamonds.	Low (C)	No further action

10. The ranking system in the Table below relates to the national grading of heritage sites. It has been modified in order to give priority to graves and burial grounds, which have placed in Grade 1.

GRADE	RANKING	SIGNIFICANCE	NO OF SITES
1	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources. (Graves and burial grounds have been placed in this high priority category)	0
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 2 heritage resources	0
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources	0
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	3 (Stone Age)
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	5

11. Conclusion and recommendations

In light of the findings in this report, the prospecting right application can be approved. The study is mindful that some important discoveries during the excavations. If this happens operations 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.

ABBREVIATIONS

YCE	Years before our common era
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

1. INTRODUCTION

This Heritage Impact Assessment (HIA) report has been prepared on behalf of Bellsbank Exploration (Pty) Ltd for a prospecting right application on a Remainder of the Farm Paiskloof 149 and Portion 1 of the Farm Paiskloof 149 near Barkly West, Northern Cape. A ground survey on the property was conducted on 15th and 16th September 2021 for the possible occurrence of archaeological and historical material on the property. An HIA is prepared in compliance with Section 38(8) of the National Heritage Resources Act (No 25 of 1999), and the mitigation measures recommended in this report will be considered as part of Environmental Impact Assessment.



Figure 1: Google Earth map shows the location of the farm Paiskloof northwest of Barkly West, Northern Cape

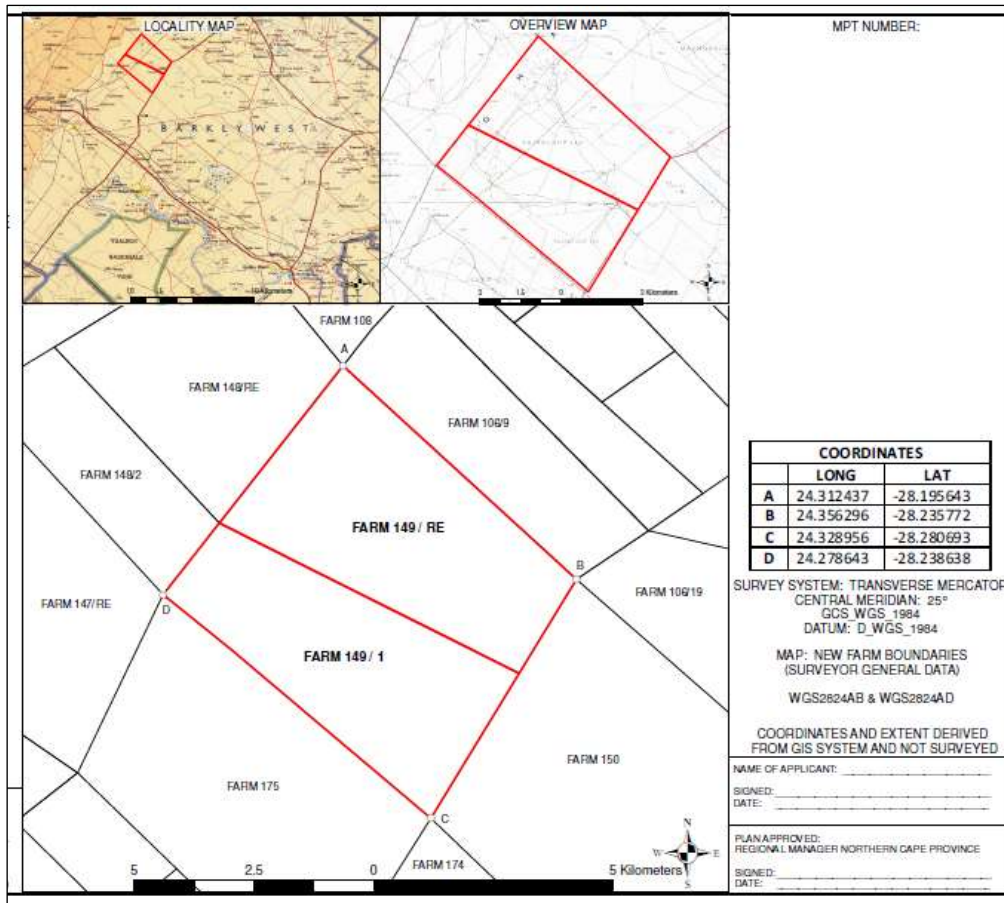


Figure 2: Standard map shows the location of the farm Paiskloof

Nature of proposed activities

Prospecting on a large scale is planned on the above property. Diamonds were mined on a small scale in the 1970s as attested by deep excavations recorded on the plateau immediately above the Ghaap escarpment. Prospecting generally has a low surface impact, but it may involve excavation of test pits and drilling with potential destructive impacts on heritage resources. Heritage resources are likely to be affected more significantly during the extraction phase as both opencast and drilling methods may entail the following:

- Large scale open excavations;
- Placement of mine plant,
- Construction of buildings for offices/workers accommodation;
- Road and / or installation of conveyor belts;
- Stockpiling (topsoil, tailings and discards)
- Waste management (including slimes dam).

In light of such activities a heritage impact assessment must be undertaken as required under Section 38 of the NHRA. This report is a preliminary identification and documentation of heritage resources on the portions of the farm Paiskloof mentioned above and suggests appropriate measures to protect them or mitigate potentially harmful impacts of the proposed development.

2. GEOGRAPHICAL SETTING

2.1. Physical setting

The farm Paiskloof lies 45 km west of Barkly West in the Northern Cape Province (Figures 1-2). The property straddles the Ghaap escarpment which separates two land elevations, a high plain and a wide valley floor in which the Harts River flows. The Ghaap Plateau is a vast elevated plain rising from the Vaal-Orange River valleys in the southeast to an altitude of c. 1300 m AMSL straddling the Northwest and Northern Cape Provinces.

The escarpment facing the Harts River consists of dolomite beds weathered into a series of terraces or steps which can be seen on the Google Earth map. Vegetation is sparse and predominantly acacia scrub. *Acacia karoo* is mixed with black thorn (Afrikaans - *haakbos* - *Acacia mellifera* subsp. *detinens*). Medium to dense acacia woodland occurs below the escarpment in a wide flat valley through which the Harts River flows in a south-westerly direction to a confluence with the Vaal River below the town of Barkly West. On the lowland plain below the escarpment the surface is covered by calcretic gravels and conglomerates with calcrete and dolomite. On the high plain the superficial bedrock is dolomite over which there is a spread of loose stones and rocks of the same material, evidence of long-term weathering.



Figure 3: Photograph taken on the edge of the Ghaap Plateau shows scrub vegetation on the plateau in the foreground and the Harts River Valley, a lowland plain in the background



Figure 4: Exposures of dolomite bedrock on the Ghaap Plateau



Figure 5: The Ghaap Plateau as seen from the farm Paiskloof



Figure 6: On the farm Paiskloof, view of the low plain towards the Harts River



Figure 7: Calcretic gravel on the low plain below the Ghaap escarpment

3. LEGAL FRAMEWORK

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

3.1. 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 an HIA:

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

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

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

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

(i) exceeding 5 000 m² in extent¹; 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.

3.2. 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.

3.3. 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.

3.4. 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—

¹ 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.

3.5. 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.

Further to the legal prescripts, we are mindful of the fact that graves and burial grounds are held sacred whether they are protected by the law or not.

3.6. 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.

3.7. 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.

4. APPROACH AND METHODOLOGY

4.1. Literature Survey

The purpose of a literature survey is to obtain background information in order to among other things determine the heritage potential of the area. A number of reports have been generated through heritage impact assessment studies undertaken in the broader area, which has set both a theoretical premises as well as influence approaches to fieldwork. Some of the reports available on SAHRIS, the information portal of SAHRA.

Matenga, E. 2018a. *Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of Section 38 of the National Heritage Resources Act No 25/1999 for a 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.* Over a period of time from the late 19th centuries miners scoured the alluvial deposits near the banks of the Vaal River searching for diamonds. Sparse occurrences of lithics were recorded.

Matenga, E. 2018b. *Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of Section 38 of the National Heritage Resources Act no 25/1999 for the proposed mine prospecting and application for a Mining Right on the Farm 85, Barkly West District, Northern Cape Province.* Stone artefacts were widely distributed on the property.

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.* Scatters of stone artefacts were encountered indicating general occupation by Stone Age hunter gathers. No significant concentrations were encountered to suggest regular settlement or workshop sites.

Matenga, E. 2016. *Phase I Heritage Impact 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.* Stone artefacts were encountered in low densities and none of the sites demonstrated concentrated or regular activity. Many mine claim pegs, an iron plaque standing in a concrete cube base were recorded as evidence of many small claims in the early pioneering years.

4.2. Local Information

Local knowledge of the area obtained from the client regarding mining and geology is acknowledged in this report (Mr Snyman, pers. com. 15th Sep 2021).

4.3. Ground Survey

A ground survey on 15th and 16th September 2021 was undertaken by means of a motor vehicle combined with random walking surveys varied with targeted surveys of areas seen as likely to yield material.

4.4. Significance Ranking

The sites found have been ranked to show potential risks and appropriate protection measures which must be taken (Table 1):

Table 1. The ranking system in the Table below relates to the national grading of heritage sites (adapted from Guidelines for involving Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005, p19). It has been modified in order to give priority to graves and burial grounds which have placed in Grade 1.

GRADE	RANKING	SIGNIFICANCE	NO OF SITES
1	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources. (Graves and burial grounds have been placed in this high priority category)	
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 2 heritage resources	
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources	
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	

5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa provides general context for identification of heritage resources in the development area. The cultural sequence spans nearly 4.4 million, the major epochs of which are the appearance of Hominids, the Stone Age, Iron Age and Historical Period.

Table 1: Cultural sequence summary²

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens</i> including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier)	Holocene	Iron Age Farmers	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Later Iron Age 900ADff	Holocene	Iron Age Farmers, emergence of complex state systems	Typically distinct ceramics, evidence of long distance trade and contacts
(ii) Mapungubwe (K2)	1350AD		Metals including gold, long distance exchanges
(ii) Historical period	Tswana / Sotho, Nguni people	Iron Age Farmers	Stone walls Mfecance / Difaqane
(iii) Colonial period	19 th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

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

5.1. Appearance of Hominids

Hominid or proto-humans appeared in South Africa more than 3million years ago. Hominid sites and their fossil remains are largely confined to dolomite caves on the highveld in Gauteng, Limpopo and Northwest Provinces.³ Hominid refers to primate species which are the immediate ancestors of man. The nearest hominid site is Taung near Vryburg (80km to the north). This site is inscribed on the UNESCO World Heritage Site in a serial nomination with the Sterkfonteing (Krugersdorop) and Makapans Valley (Mokopane).

5.2. The Stone Age

The Stone Age dates back more than 2 million years, and marks a more diagnostic appearance of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. Stone and bone implements manifest the technological development and typologies indicating chronological development.

5.2.1. *The Early Stone Age [2 million – 250 000 yrs BP]*

The Early Stone Age marks the earliest appearance of stone artefacts about 1.4 million years ago. Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). These tools, which have been called Acheulian after a site in France, 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 butchering sites. The early hunters are classified as hominids or proto-humans, meaning that they had not evolved to the present human form.

A good profile of the Stone Age is emerging partly as a result of a number of Heritage Impact Assessments that have been conducted in the region in recent years. According to Vollenhoven Early Stone Age sites have been reported on the farm Drooge Veldt No 292 near Barkly West. Further afield to the east Stone Age finds at Wonderwork Cave near Kuruman and Khathu have been widely publicised.⁴

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

⁴ van Vollenhoven, A.C.. 2014. Heritage Scoping Report Related to the Eskom Kimberley strengthening phase 4 project between the Boundary and Ulco Substations in the Northern Cape province

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

The Middle Stone Age (MSA) appeared more than 200 000 years ago. It marks 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. These were two remarkable steps in human cultural advancement.⁵ Middle Stone Age sites are known from many localities in the area including Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley to the north.⁶

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

By the beginning of the LSA, humans had evolved into *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. The practitioners of rock art are definitely the ancestors of the San and sites abound in the whole of Southern Africa. 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. A number of LSA sites has been reported in the area in the area during heritage impact studies although most researchers are hesitant to draw a fine distinction between the MSA and LSA.⁷ Both Rock paintings and engravings have been reported around Danielskuil ca80km to the west of the properties.⁸ Ancient workings of specularite at Tsantsabane and Doornfontein near Postmasburg and Beeshoek respectively seems

⁵ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

⁶ Morris, D. 2005: Report on a Phase 1 Archaeological Impact Assessment of proposed mining areas on the farms Ploegfontein, Klipbankfontein, Welgevonden, Leeuwfontein, Wolhaarkop and Kapsteevel, west of Postmasburg, Northern Cape. p3.

⁷ Schalkwyk, J 2015. Heritage scoping assessment for the proposed Perseus-Kronos 765kv Transmission Power Line and Substations Upgrade, Northern Cape and Free State Provinces.

⁸ Orton. J. 2015. Heritage Impact assessment for the Proposed 132 KV Olien-Karats Power Line at Lime Acres, Postmasburg Magisterial District, Northern Cape.

to indicate the technology and demand for minerals date back to the MSA, contrary to the notion that it started during the Iron Age.⁹

5.3. 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 (peoples practiced agriculture and kept domestic animals such as cattle, sheep, goat and chicken amongst others) and use of several metals and pottery. There is however increasing evidence that sheep might have moved into the area much earlier than the Iron Age.

5.3.1. Early Iron Age

The Early Iron is generally associated with the population of the subcontinent by speakers of Bantu languages. A sudden appearance of metal and farming technologies in South Africa, and the whole region of Eastern and Southern Africa, is postulated. Pottery styles are used as spatial and chronological markers. Coexistence and amalgamation with pre-existing Stone Age communities certainly happened, the cultural encounters producing the hybrid people and languages found in the area today.

There are few if any sites attributed to the EIA in the western parts of the country. Settlement preference for the relatively wetter woodlands to the east and eastern seaboard, compared to the arid west appears to have been a logical response to environmental opportunities and constraints. There is a strong possibility that transhumant pastoralism / seasonal hunting camps existed in the western regions from the Stone Age through to the Iron Age, although there is little or no surviving physical evidence of these activities.

⁹ Van Vollenhoven, A. C. 2014. Heritage Scoping Report Related to the Eskom Kimberley strengthening phase 4 project between the Boundary and Ulco Substations in the Northern Cape Province. Beaumont, P.B. & Boshier, A.K. 1974. Report on test excavations in a prehistoric pigment mine near Postmasburg, Northern Cape. *S. Afr. Archaeol. Bull.* 29, 41 - 59.

5.3.2. *The Later Iron Age*

The LIA is marked by the presence of extensive stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.¹⁰

5.4. **Historical Context**

What is particularly remembered of this period is the *Difaqane* or *Mfecane*, violent episodes characterised by war and displacements which affected the eastern seaboard as well as the high plateau. The Northern Cape was not spared; it was affected by the arrival of new groups from the north and east – the Tlokwa, Fokeng, Hlakwa and Phuting tribal groups – historical ethnic groups of Tswana stock.¹¹

5.5. **The European Contact Period**

As the *Difaqane* was playing out there were new arrivals in the area – the Griquas, the Korana and white communities from the southwest. There was a steady stream of White traders, hunters and missionaries from the Cape. PJ Truter and William Somerville reached the Tlhaping capital at Dithakong near Kuruman in 1801. Cowan, Donovan, Burchell and Campbell travelled into the interior which prompted James Read to establish the London Mission Society station near Kuruman in 1817. After these initial contacts, the Boer Trek starting in 1836 brought in a large number of farmers with their stock. This put pressure on existing communities creating a conflict situation which the British tried to resolve through the Keate Arbitration, setting the border between the Boers and the Bechuanaland Protectorate in 1871. Meanwhile another conflict had started over the ownership of diamond fields discovered in the area in 1867 pitting the Boers, Griquas and Korana. The British intervened again proclaiming their own territory, Griqualand West, over the diamond fields in 1871, which was eventually annexed to the Cape Colony in 1879. The discovery of diamonds at Kimberley in 1871 created the dramatic momentum for industrialisation and urbanisation. The area around Kimberley was an active theatre of the Anglo-Boer War with many skirmishes ultimately leading to a three months siege of Kimberley by the Boers in 1899-1900.

¹⁰ De Jong 2010: 36

The above cultural and historical sequence provides context for the identification of heritage resources in the area.

6. FINDINGS OF THE HERITAGE SURVEY

6.1. Stone Age

For thousands of years before modern times the area was occupied by hunter-gatherers who subsisted on stone tool technologies. However, the ground survey on Paiskloof yielded far fewer stone tools when compared to other studies in the vicinity, for instance on Farm 84, Farm 85 and Farm 393 situated on the escarpment 15 km to the northeast (Matenga 2016, 2017, 2018b). Furthermore the tools encountered during the study made from the predominant rock, dolomite, are rudimentary and less formalised.

6.2. Iron Age

No sites or relics dating to the Iron Age were found.

6.3. Modern period (19th/20th century)

In the 1970s, the property owner attempted to mine diamonds on the escarpment on a small scale. Deep holes were excavated pursuing vertical structures known to have a high chance of hosting diamonds (PKF01, PKF02 and PKF03). A flat narrow iron object with two perforated holes found on the base of the escarpment appears to date to the same period (PKF08). All finds were considered to be of low cultural significance.

6.4. Burial grounds

No burial grounds were reported on the farm.



Figure 8: Google Earth map shows the location of heritage sites documented during the ground survey

Table 2: Heritage Sites

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING	MITIGATION
PKF01	28°13'37.30"S	24°17'30.30"E	20 th Century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF02	28°13'35.70"S	24°17'34.60"E	20 th century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF03	28°13'36.30"S	24°17'33.90"E	20 th century	On the high plateau. Deep mining hole dating to the 19 th century.	Low (C)	No further action
PKF04	28°14'9.50"S	24°17'29.10"E	MSA/LSA	On the base of the escarpment. Blade made from dolomite.	Low (B)	No further action
PKF05	28°14'0.60"S	24°17'43.00"E	MSA/LSA	On the base of the escarpment. Obsidian flake	Low (B)	No further action
PKF06	28°13'46.90"S	24°17'54.60"E	MSA/LSA	On the base of the escarpment. 2 dolomite scrapers.	Low (B)	No further action
PKF07	28°13'22.40"S	24°18'11.20"E	MSA/LSA	On the base of the escarpment. Less formalised tools with sharp cutting edges made from dolomite.	Low (B)	No further action
PKF08	28°13'29.20"S	24°18'7.40"E	20 th century	On the base of the escarpment. A flat narrow iron object with two perforated holes found on the base of the escarpment appears to dating to the 1970s when the property owner attempted to mine the reef diamonds.	Low (C)	No further action

Table 3. The ranking system in the Table below relates to the national grading of heritage sites (adapted from Guidelines for involving Heritage Specialists in EIA processes by Winter S and & N. Baumann (2005, p19). It has been modified in order to give priority to graves and burial grounds which have placed in Grade 1.

GRADE	RANKING	SIGNIFICANCE	NO OF SITES
1	National	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources. (Graves and burial grounds have been placed in this high priority category)	0
2	Provincial	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 2 heritage resources	0
3A	Local	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources	0
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	3 (Stone Age)
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources	5

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

Section 38 of the NHRA

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

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

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

Eight (8) sites were documented.

(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.

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

None of the sites recorded are worthy of protection after they have been documented.

(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 in the Northern Cape is contributing significantly to the growth of the South African economy. It 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 unemployment. General improvement in the quality of livelihoods in local communities and the country at large is expected.

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

Stakeholder consultations were conducted within the scope of the broader environmental impact assessment. No objections have been raised concerning the impact of the mining on heritage resources.

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

An Environmental Control Officer will be trained to curate chance heritage finds.

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

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

6.6. 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); Mining Phase
Extent of Impact	Ground clearing and open cast mining 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	Medium.
Mitigation measures	If archaeological or other heritage relics deemed of high significance are found during the exploration 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. CONCLUSION AND RECOMMENDATIONS

In light of the findings in this report, the prospecting right application can be approved. The study is mindful that some important discoveries during the excavations. If this happens operations 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.

8. CATALOGUE OF FINDINGS

SITE NO	COORDINATES		PERIOD
PKF01	28°13'37.30"S	24°17'30.30"E	20 th Century
<div data-bbox="344 461 1137 983" data-label="Image"> </div> <div data-bbox="328 1008 1153 1554" data-label="Image"> </div>			
DESCRIPTION: On the high plateau. Deep mining hole dating to the 19 th century.			
HERITAGE SIGNIFICANCE		Mining heritage	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
PKF02	28°13'35.70"S	24°17'34.60"E	20 th century




DESCRIPTION: On the high plateau. Deep mining hole dating to the 19th century.

HERITAGE SIGNIFICANCE

Mining heritage

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
PKF03	28°13'36.30"S	24°17'33.90"E	20 th century
			
DESCRIPTION: On the high plateau. Deep mining hole dating to the 19 th century.			
HERITAGE SIGNIFICANCE		Mining heritage	
MITIGATION		No further action required.	

SITE NO	COORDINATES		PERIOD
PKF04	28°14'9.50"S	24°17'29.10"E	MSA/LSA



DESCRIPTION: On the base of the escarpment. Blade made from dolomite.

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
PKF05	28°14'0.60"S	24°17'43.00"E	MSA/LSA
			
DESCRIPTION: On the base of the escarpment. Obsidian flake.			
HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA		
MITIGATION	No further action required.		

SITE NO	COORDINATES		PERIOD
PKF06	28°13'46.90"S	24°17'54.60"E	MSA/LSA



DESCRIPTION: On the base of the escarpment. 2 dolomite scrapers.

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA.

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
PKF07	28°13'22.40"S	24°18'11.20"E	MSA/LSA



DESCRIPTION: On the base of the escarpment. Less formalised tools with sharp cutting edges made from dolomite.

HERITAGE SIGNIFICANCE

Evidence of hunter-gatherer activities during the MSA/LSA.

MITIGATION

No further action required.

SITE NO	COORDINATES		PERIOD
PKF08	28°13'29.20"S	24°18'7.40"E	20 th century



DESCRIPTION: On the base of the escarpment. A flat narrow iron object with two perforated holes found on the base of the escarpment appears to dating to the 1970s when the property owner attempted to mine the reef diamonds.

HERITAGE SIGNIFICANCE	Evidence of hunter-gatherer activities during the MSA/LSA
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MITIGATION	No further action required.
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5. 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”.¹²

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.

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.

¹² 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.

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 \pm 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.

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