

**Heritage Impact Assessment for a Mining Permit Application on the Remaining Extent of Erf 28, a Portion of Erf 30, Erf 1565, a Portion of a Gravel Road Named Saamloop Street and a Portion of an Unnamed Gravel Road, in extent 4.9979 Ha, at Delportshoop in the Dikgatlong Local Municipality, Northern Cape Province**

**(DESKTOP ASSESSMENT)**

Prepared by

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30 January 2022



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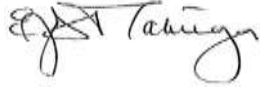
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## DOCUMENTS CONTROL

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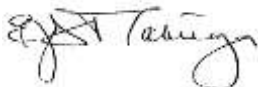
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### DECLARATION OF INDEPENDENCE

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).

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## **ABBREVIATIONS**

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

## DEFINITIONS

**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 and 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”.<sup>1</sup>

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

**Cultural Significance:** 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.

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<sup>1</sup> 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 2<sup>nd</sup> 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.

## EXECUTIVE SUMMARY

1. This document is a Heritage Impact Assessment (HIA) report prepared on behalf of Oryx Mining (Pty) Ltd to support a Mining Permit Application on the Remaining Extent of Erf 28, a Portion of Erf 30; Erf 1565, a Portion of a Gravel Road Named Saamloop Street and a Portion of an unnamed gravel road on the western outskirts of Delportshoop in the Dikgatlong Local Municipality, Northern Cape Province.
2. The piece of land measures 4.9979 Ha in extent and is located near the north bank of the Vaal River, the shortest distance being 400 m.
3. As no ground survey was undertaken, this report is informed by field data from other heritage impact assessment studies that have been undertaken in the area around Barkly West, Gong Gong, Longlands and Delportshoop. Furthermore this author has prepared a number of HIA reports based on fieldwork in the area, and the recommendations in this report are partly informed by this experience (see the Table below).
4. *Observations*
  - (i) Terrain features on the property under study are not any different from what was encountered in the area in previous studies. It can be reasonably concluded that the findings of a ground survey were not likely to turn out to be fundamentally different from what has been found in the area along the Vaal River from Barkly West to Delportshoop. It is an established fact that the area has been disturbed by mining activities in the last century, which rules out the charge of finding Stone Age provenances which are undisturbed.
  - (ii) There is poor prospect of finding Stone Age tools in undisturbed contexts due to the erosion of the surface and upper cultural horizons as a result of mine excavations over the past 120 years
  - (iii) The commonest cultural evidence relates to mining excavations in the last 120 years to retrieve diamonds. Very little of the obtaining landscape and associated structures has been ranked as heritage of high significance.

The history of mining in the area was outlined in Section 5.9 above. The impact of workings over a period of more than a century is starkly evident from the pits, piles of stones of various grades which have been observed along this section of the Vaal River in previous studies. There are a few places untouched with a possibility of finding Stone Age material in an undisturbed context. In terms of the Stone Age period in the cultural sequence the heritage sensitivity of the area is therefore found to be low.

5. The probability of occurrence of different grades of sites confirms the view that no finds in the study area are likely to warrant further action apart from documentation. During the mining phase the Chance Finds Procedure will be applied as a monitoring tool.



GRADE	RANKING	SIGNIFICANCE	PROBABILITY OF OCCURRENCE	CONFIDENCE RATING
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, and burial grounds	0% 20% (for burial grounds)	High
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%	High
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%	Medium
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	20%	High
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	75%	High

#### *6. Chance Finds Procedure (CPF)*

When the environmental and heritage approvals have been received and mining commences, an Archaeological and Heritage Chance Find Procedure (CPF) will be applied as a manual for the protection of unidentified heritage resources which may occur in the footprint of the mining right.

#### *7. Conclusion and recommendations*

The targeted area is likely to have been disturbed by diamond diggings which have occurred in the last 120 years. As a result there is little prospect of finding stone age tools which commonly occur in the Vaal – Orange River Basin in undisturbed contexts. In light of this finding, mining should be allowed to go ahead. If some important discoveries are made during mining operations, the provincial heritage resources authority or SAHRA must be notified in order for an investigation and evaluation of the finds to take place.

## **1. INTRODUCTION**

This document is a Heritage Impact Assessment (HIA) report prepared on behalf of Oryx Mining (Pty) Ltd to support a Mining Permit Application on the Remaining Extent of Erf 28, a Portion of Erf 30; Erf 1565, a Portion of a Gravel Road Named Saamloop Street and a Portion of an unnamed gravel road on the western outskirts of Delpportshoop in the Dikgatlong Local Municipality, Northern Cape Province. The piece of land which is 4.9979 Ha in extent is near the north bank of the Vaal River, the shortest distance being 400 m. This report is an assessment of heritage sensitivity in accordance with Section 38(8) of the National Heritage Resources Act (No 25 of 1999) in which mitigation measures are proposed if the development is likely to disturb or destroy heritage resources.

### **1.1. Nature of development and expected impacts**

The applicant intends to mine alluvial diamonds in superficial gravels (placers) on a portion of land nearly 5 ha in extent near the northern bank of the Vaal River. The planned mining technique is opencast block mining process with waste earth and gravels from the plant being used as backfill material prior to final rehabilitation. Opencast mining inevitably results in the disturbance or destruction of heritage resources where they exist.

## **2. LOCATION AND DESCRIPTION OF THE RECEIVING ENVIRONMENT**

This author has conducted a number heritage impact assessments in the vicinity of Barkly West, Longlands and Delpportshoop which have entailed ground surveys. He is therefore familiar with terrain features as well as the archaeological footprint of the broader area. The targeted area is on the western outskirts of Delpportshoop close to the northern bank of the Vaal River, 25 km northwest of Barkly West and 2 km upstream from the confluence of the Vaal and Harts River (Lat: 28°24'48.27"S; 24°17'37.02"E, approximate centre of the area) (Figure 1). The Vaal River is well known for a long dramatic course towards the Atlantic Ocean from a source northeast of Ermelo in Mpumalanga Province cutting through the semi-arid higgveld plains to its confluence with the Orange River at Douglas. Thereafter the Orange River continues the journey west for another 1 350km to the Atlantic Ocean. The alluvial plain on which Delpportshoop is situated, which is host to the diamonds, is the result of a long process of erosion, deposition and shifting river channels. Over a period of thousands of years

the Vaal River has created a wide plain through shifting channels, in the process depositing gravels mixed with sand. It is believed that diamonds were eroded from kimberlite pipes and deposited along the course of the river.

The Vaal River was a strategic lifeline for Stone Age communities who lived in these semi-arid parts of the highveld for thousands of years before the modern industrial age. The river continues to be of vital importance as a precious source of water for agriculture and domestic use.



Figure 1: Locality map shows the street layout of Delportshoop with Saamloop Street on the western outskirts of the town. Saamloop forms the south-western limits of the mining area.



Figure 2: Google-Earth map shows the location of the proposed mining bounded by Saamloop Street on one side

During the past 130 years, the plain has been subjected to excavations and scouring by miners, which has resulted in erosion of the original surface as can be seen in the Google Earth overview in Figure 4. Diamond seekers have worked through the gravels, some of the operators with mining rights, but reportedly a majority were illegal fortune hunters often working by night with pick, shovel and wheelbarrows, dispersing at dawn. Rehabilitation of opencast holes only came into force recently with the introduction of new environmental legislation and supporting regulations. Surface holes and piles of stones in various grades is evidence and legacy of this period in the history of mining. As a result in a section of the old floodplain between Barkly West and Delportshoop there would be a few places where Stone Age relics can be expected to be found undisturbed.



Figure 3. Google Earth map shows a portion of the footprint of the proposed mine and diggings and erosion marks of previous workings (top right), and possible active mining (top left)

### 3. LEGAL FRAMEWORK

#### 3.1. The National Heritage Resources Act (25 of 1999)

The proposed mining requires a Heritage Impact Assessment as set out under Section 38 of the National Heritage Resources Act (No 25 1999). Terms and conditions of an HIA are stated as follows:

*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, 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 000m<sup>2</sup> 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 m<sup>2</sup> in extent; or*

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

Other Sections of the **National Heritage Resources Act** (No. 25 of 1999) NHRA of relevant application are:

Section 34 of the NHRA for provisional protection of all structures and features older than 60 years.

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

Section 36 of the **NHRA** gives priority for the protection of Graves and Burial Grounds graves and burial grounds more than 60 years old, and graves and burial ground of victims of conflict.

### **3.2. International Principles and Policies**

In practice heritage management advocates protection of graves and respect for the sanctity of human remains regardless of their age. International principles are based on the same ethical considerations. The the **Vermillion Accord on Human Remains** adopted by the **World Archaeological Congress (WAC)** at the WAC Inter-Congress in South Dakota (USA) urges “*respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.*”

Some generic principles and standards for the protection of heritage resources are drawn from international charters and conventions, in particular the **Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)**, which South Africa has adopted.

## 4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

### 4.1. Cultural Sequence Summary<sup>2</sup>

There following is an outline of the cultural sequence on South Africa:

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 <sup>th</sup> Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

For thousands of years the lower Vaal Basin was occupied by hunter-gatherers who subsisted on stone tool technologies. Scatters of stone tools have been encountered on the ancient floodplain and the ridges and saddles close to the river. Many field studies have been undertaken to support heritage impact assessments. Observations comprise mainly scatters of formal tools and less formal tools (flake waste). These findings indicate general hunter-gatherer activity in the river corridor and beyond, on the plateaus. Stone Age communities were likely to have been very active along the floodplain attracted by the perennial water in the Vaal River. After a century of sporadic

<sup>2</sup> Adapted from Exigo Consultancy. 2015. Frances Baard District Municipality: Proposed Nkandla Extension 2 Township Establishment, Erf 258 Nkandla, Hartswater, Northern Cape Province. Archaeological Impact Assessment.



diggings for alluvial gold, it is no longer possible to find any stone tools in a sealed context.

#### **4.2. Historical context**

Historically the area is home to the Tlhaping segment of the Tswana, who descended from the Iron Age and probably from as far back as the Stone Age. The early 19<sup>th</sup> century was a political turning point with an increasingly uncertain security situation and internal displacements playing out. One of the key episodes was the Difaqane, was characterised by inter-tribal raids. From the late 18<sup>th</sup> to early 19<sup>th</sup> centuries Griqua herders (people of Coloured stock from the southwest) settled in this area 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.<sup>3</sup>

#### **4.3. A brief history of Vaal River alluvial diamond diggings**

The mining of alluvial diamonds in the Vaal River Valley started in 1869 carried out by a party of prospectors from Natal organised by the British Army. As they continued the search for the gemstones 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 finds 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 the same year Sir Henry Barkly, governor of the Cape visited the diggings, which prompted the miners to rename Klipdrift Barkly West. In 1872, the British annexed the diamond fields and proclaimed Griqualand West as a crown state. It was subsequently

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<sup>3</sup> 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.

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.<sup>4</sup>

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

## **5. FINDINGS OF THE STUDY**

### **5.1. Literature survey**

As no ground survey was undertaken, this report is informed by field data from other heritage impact assessment studies that have been undertaken in the area around Barkly West, Gong Gong, Longlands and Delportshoop. As has been mentioned in Section 2 of this report, this author has prepared a number of HIA reports based on fieldwork in the area, and the recommendations in this report are partly informed by this experience (see the Table below).

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<sup>4</sup> The Barkly West & Vaal River Diggings. Found at: <http://www.on-the-rand.co.uk/Diamond%20Grounds/Barkly%20West.htm>

	HIA REPORT	FINDINGS
1	<p>Matenga, E, 2021. <i>Heritage Impact Assessment and Palaeontological Desktop Assessment for a Mining Permit Application on a Portion of Erf 687 and a Portion of the Remainder of Erf 1526, Barkly West in the Dikgatlong Local Municipality, Northern Cape Province</i></p>	<p>The mining site is on the north bank of the Vaal River on the outskirts of Barkly West, 26 km upstream from Delportshoop. A large burial ground measuring 1.8 Ha located on the north bank of the Vaal River. It appears to have been used by residents in the black township of Barkly West. A rectangular setting of stones representing the remains of a building stands on a raised foundation. There is a rectangular enclosure of piled stones associated. Both structures were associated with the last mining episode in the 1990s. No material dating to the three epochs of the Stone Age was found. Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.</p>
2	<p>Matenga, E. 2019. <i>Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) requested in terms of Section 38 of the National Heritage Resources Act (No 25/1999) for a mining permit on a piece of State Land at Gong Gong on the northern banks of the Vaal River in the Magisterial District of Barkly West, Northern Cape Province</i></p>	<p>The mining site is the north bank of the Vaal River 7 km upstream from Delportshoop. No material dating to the MSA/LSA was found on the property. Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.</p>
3	<p>Matenga, E. 2019. <i>Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) requested in terms of Section 38 of the National Heritage Resources Act (No 25/1999) for a mining</i></p>	<p>The mining site is on the south bank of the Vaal River 12 km upstream from Delportshoop. Material dating to the MSA/LSA was found in three occurrences of which all contexts are</p>

	<i>permit on a portion of the remainder of Pniel 218 and a Portion of the Vaal river at Gong Gong on the southern bank of the Vaal River in Barkly West District, Northern Cape Province</i>	disturbed by diamond diggings. Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.
4	<i>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 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</i>	Mining site is near the northern banks of the Vaal River 10 km upstream from Delpportshoop. One occurrence of Stone Age flake/scrapper. Remains of several rectangular earthen structure is evidence of settlement in the recent past probably within the last 20 years. Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.
4	<i>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</i>	Vaalbos Island is on the Vaal River 7 km upstream from Delpportshoop. A single Stone Age artifact found in the river pebbles. Mine stone dykes constructed to direct water flow and stone retained ramps for the placement of earth moving equipment. Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.
5	<i>Henderson, A. &amp; J. Louw, 2019. Upgrading of the Existing Vaal Gamagara Regional Water Supply Scheme Phase 2 (VGRWSS-II). Appendix G4: Phase 1 Heritage Impact Assessment for the proposed Upgrade of the Vaal Gamagara Regional Water Supply Scheme Phase 2</i>	The authors write: "Based on experience in working in the area, the terrain is likely to include a generally low density and widespread occurrence of mainly Pleistocene Stone Age material as 'background scatter'". <sup>5</sup> Unlikely occurrence of undisturbed contexts of Stone Age material due to mine works in the last 120 years.

<sup>5</sup> Page 97.

6	<i>Van A.C. Vollenhoven, 2014. A report on a Heritage Impact Assessment for the proposed Eskom Kimberley strengthening Phase 4 Project between the Boundary and Ulco substations in the Northern Cape Province</i>	The line survey was between Kimberley and Ulco ruing east of Barkly West. Historical mining site found consisting of various (at least 21) stone packed structures or structures built with brick and clay. The site is on the west side of the R31 road 7 km south of Barkly West. <sup>6</sup>
7	<i>Hutten, M. 2013. Heritage Impact Assessment for the proposed Malenox Solar Park west of Barkly West, Northern Cape Province</i>	The mining site is 65 km west of Barkly West. Isolated occurrences of LSA tools found on the limestone reefs showed general hunter-gatherer activity in the area. <sup>7</sup>
8	<i>Matenga E. 2021. Heritage Impact Assessment &amp; 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</i>	The proposed mining is located 15 km north of Delportshoop. Stone Age tools encountered made from the predominant rock, dolomite; they were rudimentary and less formalised.

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<sup>6</sup> Page 21.

<sup>7</sup> Page 3.

## **5.2. Observations from the literature survey**

The following general observations have been made with regard to the possible heritage sensitivity of the targeted area:

- (iv) Terrain features on the property under study are not any different from what was encountered in the area in previous studies. It can be reasonably concluded that the findings of a ground survey were not likely to turn out to be fundamentally different from what has been found in the area along the Vaal River from Barkly West to Delportshoop. It is an established fact that the area has been disturbed by mining activities in the last century, which rules out the chance of finding Stone Age provenances which are undisturbed.
- (v) There is poor prospect of finding Stone Age tools in undisturbed contexts due to the erosion of the surface and upper cultural horizons as a result of mine excavations over the past 120 years
- (vi) The commonest cultural evidence relates to mining excavations in the last 120 years to retrieve diamonds. Very little of the obtaining landscape and associated structures has been ranked as heritage of high significance. The history of mining in the area was outlined in Section 5.9 above. The impact of workings over a period of more than a century is starkly evident from the pits, piles of stones of various grades which have been observed along this section of the Vaal River in previous studies. There are a few places untouched with a possibility of finding Stone Age material in an undisturbed context. In terms of the Stone Age period in the cultural sequence the heritage sensitivity of the area is therefore found to be low.

## **5.3. Other heritage resources that might occur in the area**

- Modern buildings of historical value
- Graves, burial grounds and human bones.

The Table below provides a summary of the probability of occurrence of different typologies of heritage and a confidence rating of the predictions. The ranking system 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).

#### **5.4. Probability of occurrences of different grades of sites**

The probability of occurrence of different grades of sites confirms the view that no finds in the study area are likely to warrant further action apart from documentation. During the mining phase the Chance Finds Procedure will be applied as a monitoring tool.

GRADE	RANKING	SIGNIFICANCE	PROBABILITY OF OCCURRENCE	CONFIDENCE RATING
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, and burial grounds	0% 20% (for burial grounds)	High
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%	High
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%	Medium
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources	20%	High
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	75%	High



## **5.5. Chance Finds Procedure (CPF)**

When the environmental and heritage approvals have been received and mining commences, an Archaeological and Heritage Chance Find Procedure (CPF) will be applied as a manual for the protection of unidentified heritage resources which may occur in the footprint of the mining right.

A principal aim of the CFP is to raise awareness of all personnel in the project regarding the prospect of finding archaeological resources and establish a protocol for the protection of these resources. The appointed Environmental Control Officer (ECO) and Site Manager keep copies of the CPF at the field offices. Training of field personnel on cultural heritage resources that might potentially be found on area should be provided.

## **5.6. 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**

From existing records no heritage resources existing on the proposed mining site.

#### **(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**

The risk ranking is an index of potential risks based on perceived value of the heritage likely to occur at the mining site, and potential threats posed by the proposed development. Any sites found during the mining phase and are deemed to be significant will be dealt with in accordance with the mitigation procedures in the Heritage Chance Finds Procedure.

**(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 making a significant contribution to the growth of the South African economy. Mineral wealth 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**

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

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

A Chance Finds Procedure will be used to deal with any sites or objects found during mining operations.

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

In accordance with the CP, 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.

## 5.7. 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); Mining Phase

Extent of Impact	Opencast mining methods will result in damage and destruction of archaeological resources above and below the surface.
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 mining 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.

## 6. CONCLUSION AND RECOMMENDATIONS

The targeted area is likely to have been disturbed by alluvial diamond diggings which have occurred in the last 120 years. As a result there is little prospect of finding stone age tools which commonly occur in the Vaal – Orange River Basin in undisturbed contexts. In light of this finding, mining should be allowed to go ahead. If some important discoveries are made during mining operations, the provincial heritage resources authority or SAHRA must be notified in order for an investigation and evaluation of the finds to take place.

## 7. REFERENCES

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**Matenga, E, 2021.** Heritage Impact Assessment and Palaeontological Desktop Assessment for a Mining Permit Application on a Portion of Erf 687 and a Portion of the Remainder of Erf 1526, Barkly West in the Dikgatlong Local Municipality, Northern Cape Province

**Matenga, E. 2019.** Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) requested in terms of Section 38 of the National Heritage Resources Act (No 25/1999) for a mining permit on a piece of State Land at Gong Gong on the northern banks of the Vaal River in the Magisterial District of Barkly West, Northern Cape Province

**Matenga, E. 2019.** Phase I Heritage Impact Assessment (including Palaeontological Desk Assessment) requested in terms of Section 38 of the National Heritage Resources Act (No 25/1999) for a mining permit on a portion of the remainder of Pniel 218 and a Portion of the Vaal river at Gong Gong on the southern bank of the Vaal River in Barkly West District, Northern Cape Province

**Matenga, E. 2018.** Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of Section 38 of the National Heritage Resources Act No 25/1999 for 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

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Vaalbos Island on the Vaal River near Longlands, Barkly West District, Northern Cape Province

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**Van A.C. Vollenhoven, 2014.** A report on a Heritage Impact Assessment for the proposed Eskom Kimberley strengthening Phase 4 Project between the Boundary and Ulco substations in the Northern Cape Province

**Winter S and N. Baumann, 2005.** Guidelines for involving Heritage Specialists in Environmental Impact Assessment processes.

### **Website**

The Barkly West & Vaal River Diggings. Found at: <http://www.on-the-rand.co.uk/Diamond%20Grounds/Barkly%20West.htm> Consulted October 2017.