

Phase I Heritage Impact Assessment Including Palaeontological Desktop Assessment for the Proposed Mining Right Application on Portion 5 of the Farm Kammagas No 200 Situated in the Nama Khoi Local Municipality in the Northern Cape



Prepared by

Edward Matenga

(PhD Archaeology & Heritage, MPhil, Archaeology; Uppsala/Sweden)

12 September 2021



(A)HSA Archaeological and Heritage Services Africa (Pty) Ltd
Reg. No. 2016/281687/07

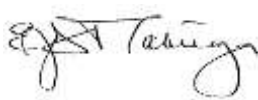
48 Jacqueline Street, The Reeds, 0157, Centurion, Pretoria

Email: e.matenga598@gmail.com.

Cell: +27 73 981 0637 / +2784 073 7774

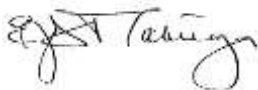
Website: www.archaeologicalheritage.co.za

APPLICANT	ENVIRONMENTAL CONSULTANT
Mafisa Mining (Pty) Ltd	Wadala Mining and Consulting (Pty) Ltd

	Name	Signature	Date
FIELD WORK & REPORT	E. Matenga		12 Sep 2021

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).



Full Name: Edward J. Matenga

Title / Position: Heritage Management Consultant

Qualifications: PhD (Archaeology & Heritage, Uppsala University, Sweden), MPhil (Uppsala), Certificate in the Integrated Conservation of Territories and Landscapes of Heritage Value (ICCROM, Rome)

CONTENTS

EXECUTIVE SUMMARY	4
ABBREVIATIONS	5
1. INTRODUCTION.....	6
2. DESCRIPTION OF THE RECEIVING ENVIRONMENT	6
3. LEGAL FRAMEWORK	10
3.1. Section 38 of National Heritage Resources Act on Heritage Impact Assessments.	10
3.2. Definition of heritage (National Estate)	11
3.3. Protection of buildings and structures older than 60 years.....	11
3.4. Protection of archaeological sites	11
3.5. Graves and burial grounds	11
3.6. The National Environmental Management Act	12
3.7. The Burra Charter on Conservation of Places of Cultural Significance.....	12
4. APPROACH AND METHODOLOGY	13
4.1. Literature study	13
4.2. Field Work	14
5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT	15
6. FINDINGS OF THE ARCHAEOLOGICAL SURVEY	17
6.1. Observations	17
6.2. Ranking of Findings	18
6.3. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework.....	19
6.4. Risk Assessment of the findings	20
7. CONCLUSION AND RECOMMENDATIONS	21
8. GLOSSARY.....	21
9. REFERENCES	23

EXECUTIVE SUMMARY

1. This report is a Heritage Impact Assessment prepared on behalf of Mafisa Mining (Pty) Ltd for a mining permit application on Portion 5 of the Farm Kammagas No 200 situated in the Nama Khoi Local Municipality in the Northern Cape.
2. Heritage Impact Assessments are prescribed under Section 38(8) of the National Heritage Resources Act (No 25/1999) which requires that screening is undertaken for the possible occurrence of heritage resources that may be affected by the proposed mining, on the basis of which appropriate mitigation measures will be prescribed.
3. This report is based on ground survey undertaken on 5 September 2021.

4. *Observations*

No archaeological or historical relics were found except for a building complex from where the mine administration operated. The building frame stands, but the roof is missing. The building bears no important architectural elements and is therefore considered of low heritage value.

5. In the broader area around Springbok it has been observed that there is a sparse occurrence of archaeological finds which are generally expected to date to the Stone Age periods. There is little that remains of the original surface in a large western and northern part of the property due to opencast mining and the presence of large stockpiles of earth and stones. The south-eastern and eastern margins of the mining area which are untouched are occupied by dunes with a fairly deep red sand burden. If there were archaeological artefacts they are buried under the windblown sands.

6. *Conclusion and Recommendations*

No archaeological or historical relics of heritage value were observed in the footprint of the mine. The mining application can be considered in light of these findings. 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

CPF	Chance Finds Procedure
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

1. INTRODUCTION

A Heritage Impact Assessment has been prepared on behalf of Mafisa Mining (Pty) Ltd for a mining permit application on Portion 5 of the Farm Kammagas No. 200 situated in the Nama Khoi Local Municipality in the Northern Cape.

Heritage Impact Assessments are prescribed under Section 38(8) of the National Heritage Resources Act (No 25/1999) which requires that screening be undertaken for the possible occurrence of heritage resources that may be affected by the proposed mining, on the basis of which appropriate mitigation measures will be prescribed. This report is based on ground survey undertaken on 5 September 2021. This procedure allows appropriate measures to be taken as mitigation.

2. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The farm Kammagas 200 can be approached via the R355 from Springbok to Kleinsee on the Atlantic coast. From the point where the road descends the Springbok highlands it is running close to the north bank of Buffelsrivier all the way to the Kleinsee. At distance of 55 km from Springbok, Kammagas 200 is set against the south bank of the Buffelsrivier wedged in a triangle formed by an unnamed stream approaching from the south meeting with the Buffels one kilometre from mine (Figure 1-3). The Buffels is an ephemeral river featuring a wide streambed; it is one of the major drainage arteries with a network of stream feeders descending from the Springbok highlands. There is little that remains of the original surface in a large western and northern part of the property due to opencast mining and the presence of large stockpiles of earth and stones. The south-eastern and eastern margins of the mining area which are untouched are occupied by dunes with a fairly deep red sand burden (Figures 4-6).

On a macro-scale the study area lies in a transitional area between the low coastal plains and the Springbok highlands. The Springbok highlands are a broken landform with extensive, exposed bedrock granite rocks, huge granite and gneiss domes and mountains separated by valleys which lie between the high plain of Poffader and the lowland coastal plain (Figures 9-10).

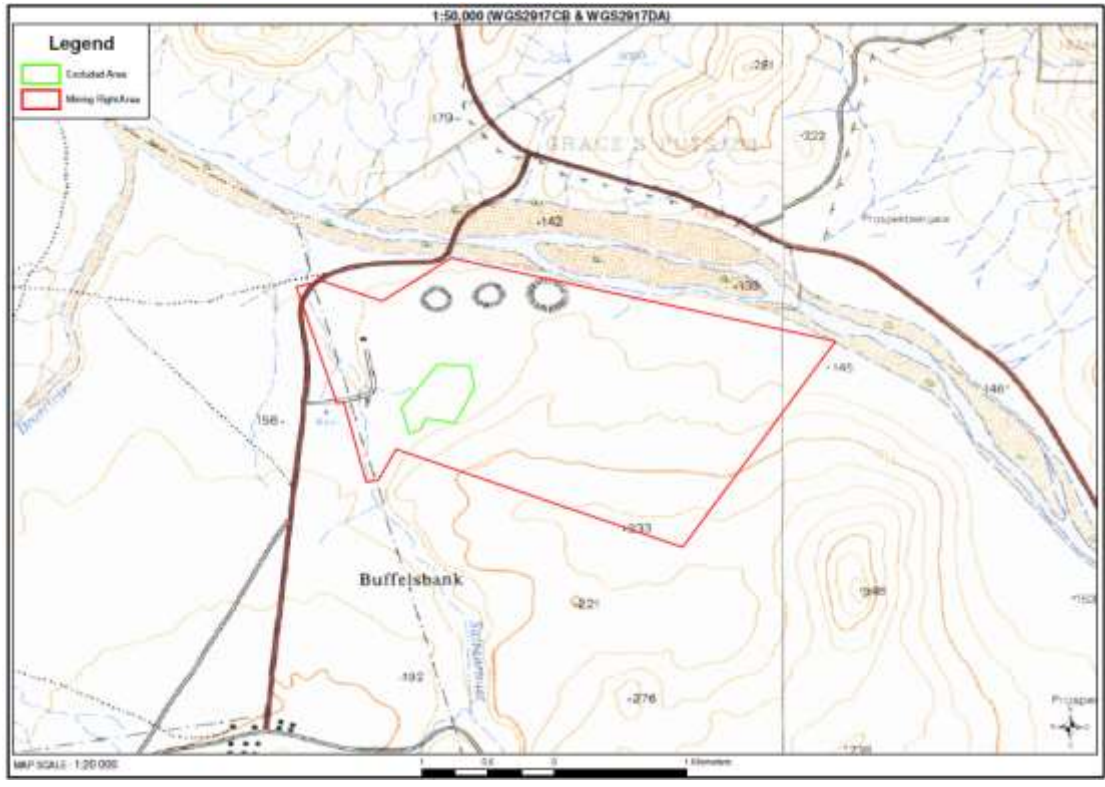


Figure 3: Standard map shows the footprint of the mine set against the south bank of the Buffelsrivier



Figure 4: A sand dune lies immediately to the southeast of the mining area



Figure 5: Mine holes or test pits in the foreground and earth stockpiles in the foreground



Figure 6: Wind ruffled sand dune east of the mining area



Figure 7: Wind ruffled sand dune in the foreground and mining area in the background



Figure 8: Another view of the sand dunes



Figure 9: Narrow floodplain between Buffelsrivier (left) and the mining area (right, not in the picture), Springbok highlands in the background



Figure 10: View north from the mine shows the lowland plains across the Buffelsrivier and exposed granite basement rock in the foreground

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 a HIA:

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

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

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

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

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

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

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

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

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

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

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

¹ Areal extent of the proposed development triggers the HIA.

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—

- (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 study

Until recently there was little archaeological fieldwork taking place in the Springbok area. In the wake of increasing investment in the mining industry in the Northern Cape Province many heritage impact assessment surveys are being undertaken as part of the environmental authorization process. Prior to this new development thrust most of the archaeological research in the western part of the Northern Cape focussed on the Namaqualand coast and the Richtersveld area.

The Namaqualand coastline is extremely rich in archaeological sites and is well researched. Stone Age people exploited marine shell fish and left behind shell middens and shell scatters along the coastline. Terrestrial animal bones and ostrich eggshells along with cultural materials like stone artefacts, pottery and ostrich eggshell beads have also been encountered. A large number of shell scatters and middens have been seen along the bank of the Orange River stretching more than 2 km inland from its mouth (Smuts et al 2019, p74).

Much has been written about the transhumant economy of Nama herders whose land form part of the World Heritage property (Townsend 2014, p5, EcoAfrica 2019). The tangible and intangible dimensions of this vibrant culture nurtured in the semiarid environment are the unique elements which have been considered for the recognition of the Richtersveld as a cultural landscape of outstanding universal value as defined in the World Heritage Convention (1972).

In most of the surveys around Springbok sparse occurrences of stone flakes have been recorded:

Three stone flakes were recorded during an HIA for a proposed Wind Energy Farm near Springbok, Okiep and Concordia, where some faded rock was also recorded (Kaplan 2010). A few stone flakes were also encountered in a powerline route between Springbok and Nababeep during scoping for the same project.

A low density scatter of Later Stone Age (LSA) flakes, chunks, cores and utilized pieces, in quartz and silcrete were recorded near Bulletrap (north of Springbok) during an assessment of several borrow pits (Kaplan (2008).

No pre-colonial resources were documented during a heritage scoping assessment for a proposed water pipeline between Rooiwinkel and Nababeep (Kaplan 2011a), and between Okiep and Bulletrap alongside the N7 (Kaplan 2011b), projects which are part of the current Namaqualand regional water supply scheme being administered by the applicant.

A few stone tools and a possible grave/grave marker were recorded by Smith (2013a) during a HIA for a proposed solar energy farm near Carolusberg, and dispersed scatters of stone tools, a stone kraal, colonial-era artefacts and a possible grave were also encountered by Smith (2013b) during a HIA for a proposed solar energy farm near Nababeep.

No archaeological heritage was encountered by Gagher (2012) during a HIA for a proposed solar energy farm south of Springbok and no pre-colonial archaeological traces were encountered by Morris during a survey of the proposed upgrading of the Goegap Nature Reserve facilities a few kilometres outside Springbok.²

Overall there seems to be sparse occurrences of archaeological finds in the Springbok area of the Northern Cape, which are generally expected to date to the Stone Age periods.

4.2. Field Work

A ground survey was undertaken on 5 September 2021. It was observed that there is little that remains of the original surface in a large western and northern part of the property due to opencast mining and the presence of large stockpiles of earth and stones. The south-eastern and eastern margins of the mining area which are

² This inventory of findings is in an HIA report by ACRM 2016. Heritage Impact Assessment, Namaqualand Regional Water Supply Scheme – Upgrade of the Water Supply Pipeline from Okiep to Concordia and Carolusberg, Northern Cape Province, p17.

untouched are occupied by dunes with a fairly deep red sand burden (see map of the track log in Figure 11).

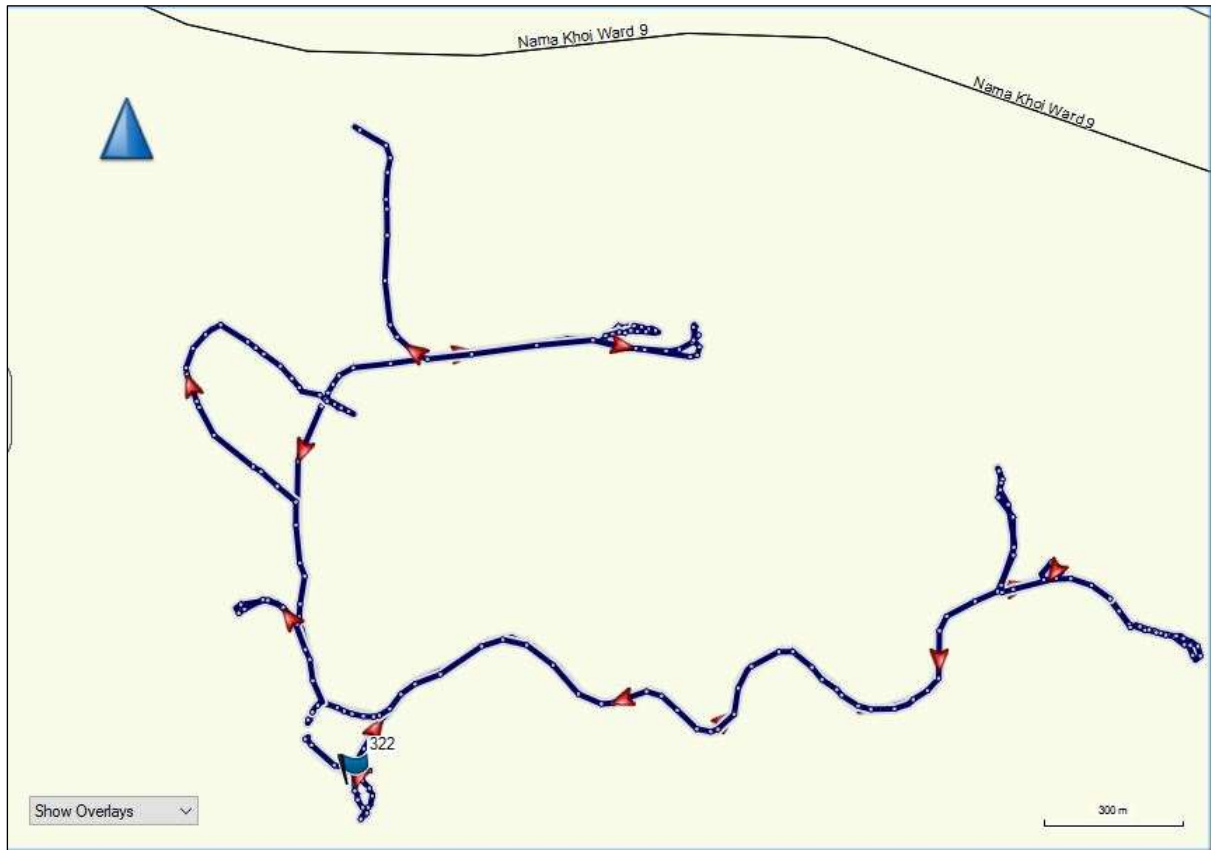


Figure 11: Map of the track log

5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

Table 1 below is an outline of the cultural sequence in South Africa and provides a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest.

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 BP	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 BP	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

Since the Early Stone Age hundreds of thousands of years ago the constraints presented by the Karoo environs of Namakwaland have had a tight grip on the lifeway of indigenous communities. The communities in turn established an intimate relationship with the environment to the extent that on the basis of contemporary observations researchers have been able to reconstruct modes of existences thousands of years into the past. Historically the interior of Namaqualand is home to the Little Namaqua, a group of Khoikhoi herders with sheep and cattle and lived in encampments of mat/grass huts. The Little Namaqua are known to have moved seasonally with their livestock in a transhumance cycle between the Kamiesberg in the summer months and the Sandveld near the coast in the winter months (Webley 1992). Due to the nomadic existence the Little Namaqua had no clearly defined territorial boundaries. The Trekboers took advantage of their migratory existence to settle in the area when loan farms were granted after 1750. The Little Namaqua eventually were relocated to `reserves' such as Leliefontein, Steinkopf, Kommaggas, Carolusberg, Concordia and the Richtersveld (ACRM 2016, pp16-17).

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

6. FINDINGS OF THE ARCHAEOLOGICAL SURVEY

6.1. Observations

No archaeological or historical relics were found except for a building complex from where the mine administration operated. The building frame without a roof is in a state of dereliction, and bears no important architectural elements (Figure 12).



Figure 12. A broken building complex where the mine administration was based

In the broader area around Springbok it has been observed that there is a sparse occurrence of archaeological finds which are generally expected to date to the Stone Age periods. There is little that remains of the original surface in a large western and northern part of the property due to opencast mining and the presence of large stockpiles of earth and stones. The south-eastern and eastern margins of the mining area which are untouched are occupied by dunes with a fairly deep red sand burden. If there were archaeological artefacts they would be buried under the windblown sands.

6.2. 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.	0
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.	0
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	1 (ruined building complex)
		TOTAL	1

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

Section 38 of the NHRA

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

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

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

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

There are no Grade I or Grade II sites.

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

N/A

(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.

6.4. 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

No archaeological or historical relics of heritage value were observed in the footprint of the mine. The mining application can be considered in light of these findings. 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. 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".³

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.

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

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

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

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

Late Stone Age: The period from ± 30 000 years ago up until the introduction of metals and farming technology around 2000 years ago, but overlapping with the Iron Age in many areas up until the historical period.

Middle Stone Age: a period of stone tool cultures with complex chronologies marked by a shift towards lighter, more mobile toolkit, following the Early Stone Age and preceding the Late Stone Age; the transition from the Early Stone Age was a long process rather than a specific

³ 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.

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.

9. REFERENCES

ACRM, 2016. Heritage Impact Assessment, Namaqualand Regional Water Supply Scheme – Upgrade of the Water Supply Pipeline from Okiep to Concordia and Carolusberg, Northern Cape Province

EcoAfrica, 2019. Richtersveld Cultural and Botanical Landscape World Heritage Site Integrated Management Plan (IMP) 2021 – 2026 (Draft).

Kaplan, 2011a Archaeological scoping the proposed construction of a new water pipeline between Rooiwinkel and Nababeep, Northern Cape. Report prepared for EnviroAfrica. ACRM Cape Town (Cited in ACRM 2016).

Kaplan, J. 2011b. Archaeological scoping the proposed construction of a new pipeline between Bulletrap and Okiep, Northern Cape. Report prepared for EnviroAfrica. ACRM Cape Town (Cited in ACRM 2016).

Kaplan, J. 2010. Archaeological Impact Assessment for a proposed wind energy facility near Springbok, Northern Cape. Report prepared for DJ Environmental Consultants. ACRM, Cape Town (Cited in ACRM 2016).

Kaplan, 2008. An archaeological assessment of three proposed borrow pits alongside DR2595 N7 to Bulletrap, Northern Cape Province (Cited in ACRM 2016).

Gaigher, S. 2012. Heritage Impact Assessment Report Basic Assessment, proposed establishment of the Brax Energy Photovoltaic Solar Park on a Portion of the Farm Voelklip near Springbok in the Northern Cape Province. Report prepared for Shawn Johnston Sustainable Future/Savannah Environmental

Smallberger, J.M. 1995. A history of copper mining in Namaqualand. Scholtz Trust.

Smith, A. B. 2013a. Proposed Solar PV Facility Melkboskuil Farm 132/6 Carolusberg: A Heritage Impact Assessment. Report prepared for Footprint Environmental Services (Cited in ACRM 2016).

Smith, A. B. 2013b. Proposed Solar PV Facility Klipdam Farm 134/17 Springbok, Northern Cape: A Heritage Impact Assessment. Report prepared for Footprint Environmental Services (Cited in ACRM 2016).